

MINISTRY OF HIGH AND SECONDARY SPECIAL EDUCATION OF THE
REPUBLIC OF UZBEKISTAN

BUKHARA STATE MEDICAL INSTITUTE

Department of Therapeutic Stomatology

“APPROVE”
Vice-rector for academic and educational work
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“ 5 ” 09 2020 year



Subject:

Preclinical Restorative

Dentistry

For 1 course students

Area of education:	500000 -	Public health and social maintenance
Area of expertise:	510000 -	Public health
Direction of Education:	5510400	Stomatology

Bukhara 2020

Compiled by:

Kazakova N.N – PhD assistant of the Department of Dentistry of Bukhara State Medical Institute

Reviewers:

Daminova Sh.B - Professor, Department of Pediatric Dentistry

Tashkent Medical Academy, MD, professor

Ulama AS - Professor of Dentistry 1-Tashkent

Institute of Postgraduate Medical Education, MD

Instructor's Manual considered and approved by the Central methodical commission of the Faculty of Dentistry BSMI

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CURRICULUM

ON THE SUBJECT

Preclinical Restorative Dentistry

Area of education:	500000 -	Public health and social maintenance
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Working curriculum on discipline was formulated on the basis of the working of the curriculum and the curriculum.

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Working curriculum subjects discussed at the meeting of the Department of Therapeutic Dentistry protocol processing **number 1 of 28 August 2020** and recommended for passage by the Faculty Council.

1. INTRODUCTION

Discipline "Preclinical Restorative Dentistry" (phantom course) is taught to students of dental faculty 1 course I V semester.

Work program propaedeutic therapeutic dentistry compiled from a sample program propaedeutic therapeutic dentistry, considered the requirements of educational standard of the Republic of Uzbekistan.

The work program highlights the major goals and objectives of the subject, the volume of theoretical knowledge and manual skills, teaching techniques, methods of testing students' knowledge, new teaching technologies.

1.1. Course Objectives

The main purpose of preclinical restorative dentistry is to develop students Faculty of Dentistry and the theory of practical knowledge, manual skills and preparation stages of the formation of cavities on to Black (I, II, III, IV, Class V s); imposition of temporary and permanent fillings, and I discovered cavities of different groups of teeth, treatment and root canal on phantoms.

To accomplish this goal the following objectives enes: learned and gradually form a future specialist practical knowledge necessary amount of manual skills by propedevti ke therapeutic dentistry; Mr. auchit and provide digestible material ix propaedeutics therapeutic dentistry students grafted dental faculty practice.

1.2 Requirements for qualifying students in the discipline

After the end of the study discipline "Propedevtika therapeutic dentistry" bachelor **should know:**

- About ENERAL knowledge about the structure of the teeth and their tissues, timing and pattern of eruption and the change of teeth, forming the roots of teeth, with the organism as a whole.
- Get inside **zubochelolyustnyu** system of external and internal factors.
- Anatomy and histology Loyal teeth, histochemistry and food, thickness of enamel, dentin, cementum.
- The mechanism of the drills.
- The mechanism of the tip.
- Elements of ergonomics.
- Functions hog depending on the form.
- Function intruments and it used when filling and inspection.
- Principles, stages, preparation sequence.
- Classification of carioz cavities on Black.
- Elements of cavities.
- Calculation of the amount of filling material depending on the size of the cavity.
- Criterion and hardening time of various filling materials.
- Topographical anatomy of the mouth and teeth of various groups.
- Negative and positive properties of filling materials.
- Bachelor must **have skills:**
- Dissection of class I cavities on phantoms.
- Dissection of class V cavities on phantoms.
- Dissection of class II cavities on phantoms.

- Preparation cavities class III on phantoms.
- Dissection of cavities I V class on phantoms.
- Staging a temporary filling of artificial dentin on phantoms.
- Overlay devitaliziruyushey paste under the bandage from aqueous dentin.
- Drug treatment of cavities on phantoms.
- Drying the cavity on phantoms.
- Imposition of insulating gaskets on phantoms.
- Imposing medical pads on phantoms.
- Finishing the permanent seals of various filling materials.
- Sealing silicate cements on phantoms.
- Filling carious cavities composite restorative materials.
- Carrying out the main stages of restoration of teeth on phantoms.
- Removing permanent seal on phantoms.
- Autopsy cavity lateral incisor on phantoms.
- Mechanical treatment of root canals on phantoms.
- Expansion of the mouths of root canals.
- Drug treatment of root canals on phantoms.
- Technique of root canal resorcinol-formalin paste and plastic filling materials on phantoms.

1.3. Discipline relationship with other disciplines in the curriculum and the role of the health system

This discipline is closely linked to biophysics, biochemistry, dental materials and equipment from the curriculum. For mastering the discipline will be needed in theory and in practical knowledge of physics, organic and inorganic chemistry, which were obtained while studying in academic high schools, colleges. Whereas, the knowledge gained in the discipline will be the basis for a deeper assimilation of clinical disciplines, pharmacology.

Discipline Propedevtika therapeutic dentistry plays a key role in shaping the general dentist. He, along with other clinical disciplines gives a broader concept of dentistry and clinical reasoning develops student.

1.4. Modern information and educational technology in teaching discipline

The criteria for determining the quality of knowledge, together with the educational process are: the teaching of high scientific and pedagogical level, read problematic lectures, conducting classes in the form of discussions, use of advanced educational technology and multimedia tools to develop thinking listener, be tredovatelny, with each student to work individually, attract listening to a free analysis and scientific research.

When designing a course "Propedevtika therapeutic dentistry" were used the following conceptual approaches:

Education aimed at personality. This training is in essence directed to the full development of each participant. In the design of this training will be provided not one particular person, but a purposeful method obecheniya interconnected with the Future of specialization.

Systemic approach. Learning technology should encircle all features of the system: the logic of the process, the interconnectedness of all links integrity.

Orientation with respect to the activity. This training is aimed at forming personality traits, activates and increases the intensity of activity listener, also aims at opening all its qualities, opportunities and iniciativnosti.

Dialogic approach. This approach indicates the need to establish educational interaction relations. The result is enhanced autoactivation and affirmation of the individual.

Organization of joint training. This means on the need to draw attention to the formation and maintenance activities I teacher and student democracy, equal rights and work together in assessing the results.

Problem-based learning. Representation learning content in the form of problems that activates student activities. At the same time, is formed and develops creative dialectical observation methods to address the extreme objective scientific knowledge. As a result, provided the creative activity of the student.

Presenting information using modern tools and techniques - introduction in educational process of new computer and information technologies.

Methods and techniques of teaching. Lecture (introduction on the topic, visualization), problem-based learning, organizer s pinbord test ovye questions, practical skills.

Forms of organization learning: dialogue polylogue joint communication and fronalnoe, collective and group study.

Learning Tools: along with E s traditional forms of learning (tutorial texts of lectures) computer and information technology.

Methods of communication: direct relations based on feedback operative communication with the audience.

Methods and means of feedback: observation, quiz, diagnostics training based on an analysis of the current and final control.

Methods and tools for management: planning training sessions in the form of process map that defines the steps of training. Joint movement teacher and student in achieving this goal, the control of classroom and extracurricular independent works.

Monitoring and evaluation: monitoring planned learning outcomes during the training session and during the entire course. At the end of course assessment of students' knowledge in the form of tests and organizers.

During training, the discipline of "Dental materials and equipment" used computer technology and educational software, prepare handouts on the topic. Be conducted by assessing the students orally or in the form of computer-based testing.

The distribution of those classes and hours in the discipline n ropedevtika therapeutic dentistry

Number	Title order	Total hours	Lectures	Practical exercises	Independent work
1	Phantom course. Goals and objectives. Ergonomics. Kinds of dental instruments and their use. Stages and principles of preparation of hard dental tissues. Requirements for each stage.	5	2	3	-
2	Classification of cavities (G. V. Black). Rules for the plastic blocks and phantoms, the formation of cavities. Preparation and formation of cavities 1 class.	5	-	3	2
3	Preparation and formation of cavities 2 class.	5	-	3	2

4	Preparation and formation of cavities 3 class	5	-	3	2
5	Preparation and formation of cavities 4 class	5	-	3	2
6	Preparation and formation of cavities 5 class	5	-	3	2
7	Preparation and formation of deep cavities and atypical.	5	-	3	2
8	Classification of filling materials. Temporary filling materials, insulating and therapeutic pads, properties, and application.	5	-	3	2
9	Cements and x types (zinc phosphate, silicate, silicone phosphate, glass ionomer cements), the methods of application.	5	-	3	2
10	Amalgam. Their properties, composition, indications.	4	-	3	1
11	Composite filling materials. Classification, properties and indications for use.	7	2	3	2
12	Methodology seal the cavities's class is different s composite restorative materials.	5		3	2
13	Endodontics. Topographic anatomy of the various groups of cavities in permanent teeth.	5	2	3	-
14	Tech disclosure cavity incisors, canines, premolars and molars. Means for pulp devitalization their application.	5	-	3	2
15	Endodontic instruments, their types, application. Conduct mechanical and medical treatment well passable root canals. Expanding bad passable root canals. The notion of impregnation. Technique of impregnation.	5	-	3	2
16	Filling materials for root canal filling. Technique root canal filling materials different	3	-	3	-
	Only	79	6	48	25

2. SUBJECTS TEACHING MATERIALS

2.1. Lectures

1. Concept of caries. Classification of cavities. Tools for preparation of hard dental tissues. Drill. Methods and preparation stages of cavities.

(2 hours)

About all the knowledge about the development of dental caries;
Do svoyat classification of cavities;
About I sign ed with tools for the preparation of hard dental tissues;
B Udut have an idea of a drill;
C can use the tools and equipment to be scrap dentistry preparation phase cavity.
A: 1,3,5. D: 2,3,5,6,10,14,18,20.

2. Composite materials, classification. Composite mat erially chemical and light curing. Bonding system. Restoration of teeth. Types of halogen lamps and their application. Restoration classes.

(2 hours)

About I sign ed classification of composite materials;
P oluchat information about the properties, use, benefits of composite filling materials.
About yatsya sign and inculcate bonding system.
About I m familiar with the restoration of smiling teeth.
Y values are about the kinds of halogen lamps, and their applications.
About possession w t restoration technique classes.
A: 1,3, 4, 5. D: 7,13,14,16,19,21.

3. Notion of endodontics. (2 hours)

And zuchit endodontic (vnutrizubnoe) dentition.
About own oral disclosure by various groups of teeth.
P azlich and be endodontic instruments, able to choose from.
P ht e and consequently used tool use endodontically x s.
In Execute phased treatment of root canals.
About - 1,3,4,5. D - 1, 7,13,14,16,19,2 2.23.

2. Two. PROPOSED SCOPE PRACTICAL LESSONS

1. Phantom course. Goals and objectives. Ergonomics. Kinds of dental instruments and their use (3 hours).

Give an idea of the phantom, the purpose and objectives of the phantom course. Explain to students the concept of "Ergonomics" tell about its connection with the discipline "Propedevtika therapeutic dentistry." familiarize with equipment m dental office, Mr. RUPP s dental instruments that are used in odontology. Define the term "preparation" stages of preparation.

The technology used is learning: *"The Cat in the bag"; Organizer "Cluster"*

References: O-1, 2, 4. 4,8,11,13-D.

2. Classification of cavities (G. V. Black). Rules for the plastic blocks and phantoms, the formation of cavities. Preparation and formation of cavities Class I (3 hours).

With form a general idea of caries. Know the classification of cavities on Black. Provide knowledge of the principles and characteristics of the preparation stages of class I to Black. Formulate the basic requirements for the implementation of each stage of preparation.

Used technology training: *organizer "Cluster"*

References: O-1, 2, 3,4. D-1, 2,6,11,18.

3. Preparation and formation of cavities class II (3 hrs.)

On the form and shape of the main provisions of the preparation of class III cavities. Give students the concept of an "additional the playground" x requirements to which matured to impose it. Teach students the correct choice for the preparation burs cavities class III.

Used technology training: *organizer "Cluster"*

References: O-1, 2, 3,4. D-1, 2,6,11,18.

4. Preparation and formation of cavities class III (3 hrs.)

On the form and shape of the main provisions of the preparation of class III cavities. Give students the concept of an "additional the playground" x requirements to which matured to impose it. Teach students the correct choice for the preparation burs cavities class III.

The technology used is learning: *"Gallery Tour"; Organizer "Cluster"*.

References: O-1, 2, 3,4. D-1, 2,6,14,18.

5. Preparation and formation of cavities Class IV (3 hrs.)

Since forming the basic provisions, features and form cavities preparation class IV. Give students the concept of an "additional playground the" x requirements to which matured her placing in the formation of cavities IV class. Teach students the correct choice for the preparation burs cavities Class IV.

The technology used is learning: *"The Cat in the bag"; Organizer "Cluster"*.

References: O-1, 2, 3,5. D-1, 4,6,11,18.

6. Preparation and formation of cavities Class V (3 hrs.)

Since forming the basic provisions, features and form preparation class V cavities. Give students the concept of wedge-shaped defects, peculiarities preparation class V cavities and wedge-shaped defect. Teach students the correct choice for the preparation burs cavities Class V.

The technology used is learning: *"Gallery Tour"; Organizer "Cluster"*.

References: O-1, 2, 3,4. D-1, 3,6,11,18.

7. Preparation and formation of deep cavities and atypical (3 hrs.)

With a general idea of forming deep and atypical cavities. Give an idea of deep dissection and atypical cavities. Writing knowledge of forests used for preparative p HVAC and deep cavities and atypical her.

The technology used is learning: *"Snowballs" organizer "cluster."*

References: O-1, 2, 3,5. D-1, 4,6,11,18.

8. Classification of filling materials. Temporary filling material s, insulating gaskets and medical and x properties and terms of use (3 hours).

With a general idea of forming cream of gauge of materials; give a classification of filling materials; give an idea of temporary filling materials, to form knowledge e indications and contraindications to the use of temporary filling materials; give an idea of the therapeutic and separators used in therapeutic dentistry; ability to form a mixing technique temporary filling materials and affixing seals.

The technology used is learning: *"Who is the greatest? Who is faster? "*; Organizer *"Cluster"*.

References: O-1, 2, 3,4. D-1, 2,6,17,18.

9. Permanent filling material. Cements. Their types (zinc phosphate, silicate, silico-phosphate, glass ionomer cements), the methods of application (3 hrs.)

With formulate a coherent system of knowledge about the material and x is used for permanent sealing; learn indications and contraindications for the use of n Ju cements teach students zameshena anija technologies, entering into a cavity, modeling cements provide assistance to students in the development of methods for restoration of the contact point.

The technology used is learning: *"Brainstorm" organizer "cluster."*

References: O-1, 2, 4,5. D-6,7,9,10,15,19.

10. Amalgams, their properties, composition, indications (3 hrs.)

And zuchit composition and properties of different kinds and amalgams; explore the indications and contraindications to the use of amalgam fillings; master the features of various classes of cavity preparation for amalgam; explore tools for working with amalgam; about svoit technique finishing amalgam fillings.

The technology used is learning: *"Brainstorm" organizer "How?"*.

Literature : O-1, 2, 3,4. 2,4,5,8,11,15-D.

11. Composite filling materials. Classification, properties, indications for use (3 hours).

With the general form is the permanent ix filling materials, composites; to classify the permanent filling material s; give an idea of the use of e, the positive and negative properties of composites.

The technology used is learning: *"Black Box", organizer, "How?"*

Literature : O-1, 2, 4. 3,4,8,11,12,16,17-D.

12. Methodology seal the cavities of different class composite restoratives (3 hrs.).

And zuchit composition and properties of various types and composites; explore the indications and contraindications to the use of composite fillings; master the features of various classes of cavity preparation for composites; explore tools for working with composites; svoit method of iku finishing of composite fillings.

The technology used is learning: *interactive game "Snowballs" organizer "cluster."*

Literature : O-1, 2, 4. 4,8,10,12,18,21-D.

13. Endodontics. Topographic anatomy of the various groups of cavities in permanent teeth (3 hrs.).

L amb e notion of endodontics ; explore the topographic anatomy of the various groups of teeth cavity ; clarify indications for approx e pared endodontic instruments , to learn the specifics of each endodontic instrument.

The technology used is learning: *interactive game "Snowballs" organizer "cluster."*

Literature : O-1, 2, 4. 4,8,11,18,20,21,23-D.

14. Tech disclosure cavity incisors, canines, premolars and molars. Means for devitalization pulp with them (3 hrs.).

H auchit students autopsy cavities of different groups of teeth on phantoms; give the basic concepts of application of endodontic instruments; give an idea about the facilities for pulp devitalization, their composition, indications and contraindications.

The technology used is learning: *interactive game "Round Table" and organizer of "clusters"*.

Literature : O-1, 2, 4. 4,8,11,13,18,22,23-D.

15. Endodontic instruments, their types, application. Conduct mechanical and medical treatment well passable root canals. Expanding bad passable root canals. The notion of impregnation. Technique of impregnation (3 hrs.).

Since forming a basic understanding of endodontic instruments, their types, applications. Explain the methodology for mechanical and medical treatment well passable root canals. Give an explanation of the method of expansion am passable bad root canal. Share this impregnation methods and its n rovedeniya.

The technology used is learning: *interactive game "handle in the middle of the table," organizer "Why".*

Literature : O-1, 2, 4. 1,4,8,11,18,20,23-D.

16. Filling materials for root canal filling. Technique root canal filling materials different (4 hrs.).

With a general idea of the form of filling materials for root canal I. Explain existing methods different root canal filling materials for root canal.

The technology used is learning: *interactive game "handle in the middle of the table," organizer "cluster."*

Literature : O-1, 2, 4. 1,2,4,6,7,13,18-D.

2.3. Indications on the organization of work laboratornh

Laboratory work on discipline in the model curriculum is not given.

2.4. Indicators on the organization of coursework

Course work in the discipline in the model curriculum is not given.

2.5. Form and content of self-study on the organization

Independent work of students (CDS) on discipline Propedevtika therapeutic dentistry is part of the process under study, fully furnished methodological and information resources.

Forms of independent work of students in the discipline set out:

1. Self-development in order to separate the theoretical academic literature;
2. On this theme the preparation of information (abstracts and presentations);
3. Development and filling graphic organizers;
4. Crossword;
5. Formulate and solve situational problems;
6. Removing and presentation videos.

CDS is performed outside normal working hours, based on the thematic focus of the CDS, which is available in the curriculum. CDS protection is done during the practice session.

At the beginning of the academic year faculty students explains rules for the implementation of the CDS. Students are free to choose the theme of the CDS.

Types of independent work carried out in the audience:

1. Processing of the tooth cavity on phantoms.
2. Preparation of an essay on the theme of the CDS (10 printed pages).
3. Preparation of a report on the CDS.
4. Preparation of the presentation of the report on the CDS.
5. Prepare a report on the work of the Internet and electronic textbooks.
6. To study and submit a scientific report on modern methods of clinical and medical research.

7. Preparation of new training tables on CDS.
8. Develop new handouts (tables, organizers, diagrams, drawings, graphics, crossword puzzles).
9. Develop a set of case studies.
10. A test on CPC.
11. Statement of the seals on phantoms.
12. Make a report on the new literature, monographs, Medline.
13. Preparation of working games.
14. Create crossword puzzles (at least 10).
15. Active participation in scientific papers.
16. To prepare the abstract on lectures and workshops.
17. Preparation of teaching phantoms (1 - Phantom of 5 teeth).
18. Create a video.
19. Preparation of thematic album.

Topics of reports and abstracts on discipline

1. Fundamentals of ergonomics in dentistry.
2. The stages and principles of preparation of hard dental tissues.
3. Stages of preparation of cavities for restoration.
4. Stages of restoration cavity I-Class. Technique.
5. Stages of restoration cavity III-class. Technique.
6. Stages of restoration cavity IV-class. Technique.
7. Stages of restoration cavity II-class. Technique.
8. Stages of restoration cavity V-Class. Technique.
9. Dissection of a tunnel and filling by the method of "lateral tunnel."
10. Filling of "sandwich method". Indications and contraindications.
11. The sensitivity after surgery "Postbonding."
12. The mechanism of adhesion of the composite to enamel and dentin.
13. The reasons for poor quality of the restoration work.
14. Standardization of endodontic instruments for machining channels.
15. Tools for the passage of the root canal.
16. Tools for the expansion and alignment of the walls of the root canal.
17. Tools to determine the length and root canal filling.
18. Endodontic instruments for curved and almost impassable channels.
19. Solutions for root canal treatment.
20. Funds for the chemical expansion of root canals. Method of application.
21. Funds for the temporary filling of root canals.
22. Funds for permanent filling of root canals.

Independent work outside the classroom

Independent work outside of class consists of individual self-development of theoretical topics in the academic literature; Preparation of information (abstracts and presentations); development and filling graphic organizers; Crossword, situational problems; Removing and presentation videos. Students are better able to absorb the information on the topic, develop independent thinking and creativity.

Independent work of students in the discipline along with the current estimate is evaluated on certain points.

Number	Topics independent works	Quest	Deadlines	Volume (Hours)
I semester				
1	Anatomical structure of the teeth.	According to the literature on the internet or draw pictures on the theme, create crosswords. Make	2 - week	3

		individual assignments and presentations.		
2	Modern types of drills and their capabilities.	According to the literature on the internet or draw pictures on the theme, create crosswords. Make individual assignments, presentations or abstracts.	3 - week	2
3	Topographic anatomy of the oral teeth of the upper and lower jaw to her.	According to the literature on the internet or draw pictures on the theme, create crosswords. Make individual assignments, presentations or abstracts.	4 - week	2
4	Histological structure of hard dental tissues (enamel, dentin, cementum).	According to the literature on the internet or draw pictures on the theme, create crosswords. Make individual assignments, presentations or abstracts.	5 - week	2
5	Tunneling technique of preparation.	According to the literature on the internet or draw pictures on the topic, make organizers. Make individual assignments, presentations or abstracts.	6 - week	2
6	Sealing "sandwich" technique. Indoor and outdoor way of sealing.	According to the literature or on the internet to make organizers. Remove videos, make presentations.	7 - Week	2
7	The mechanism of action of therapeutic pads. Application technology.	According to the literature on the internet or draw pictures on the theme, create crosswords. Make individual assignments, presentations or abstracts.	8 - week	2
8	Compomers their properties.	According to the literature or on the internet to make organizers. Remove videos, make presentations.	9 - Week	2
9	Flowable composites, their properties and applications.	According to the literature or on the internet to make crosswords. Make individual assignments, presentations or abstracts.	10 - week	2
10	Fundamentals of adhesive systems composites.	According to the literature or on the internet to make organizers. Remove videos, make presentations.	11 - week	2
11	Almost e basics of working with composite filling materials.	According to the literature on the internet or draw pictures on the theme, create crosswords. Make individual assignments, presentations or abstracts.	12 - week	1
12	Practical basis for the formation of cavities (various classes) on phantoms.	According to the literature or on the internet relating to compile crosswords. Make individual assignments, presentations or abstracts.	13-14 - the week	1

13	Types of modern dental instruments. TOY p tools for dental restoration. Spreader and plagency.	According to the literature or on the internet to make organizers. Remove videos, make presentations.	15 - week	2
Only				25

2.6. List of practical skills in the discipline

1. Dissection of class I cavities on phantoms.
2. Dissection of class V cavities on phantoms.
3. Dissection of class II cavities on phantoms.
4. Dissection of class III cavities on phantoms.
5. Dissection Class IV cavities on phantoms.
6. Staging a temporary filling of artificial dentin on phantoms.
7. Overlay devitaliziruyushey paste under the bandage from aqueous dentin.
8. Drug treatment of cavities on phantoms.
9. Drying the cavity on phantoms.
10. Imposition of insulating gaskets on phantoms.
11. Imposing medical pads on phantoms.
12. Finishing the permanent seals of different filling materials.
13. Sealing silicate cements on phantoms.
14. Filling cavities kari oznyh composite restorative materials.
15. Carrying out the main stages of restoration of teeth on phantoms.
16. Removing permanent seal on phantoms.
17. Autopsy cavity lateral incisor on phantoms.
18. Mechanical treatment of root canals on phantoms.
19. Expansion of the mouths of root canals.
20. Drug treatment of root canals on phantoms.
21. Technique of root canal resorcinol-formalin paste and plastic filling materials on phantoms.

2.7. Information and methodological equipment program

During training, the discipline of "Dental materials and equipment" used modern pedagogical methods and Information and Communication Technologies:

1. To all lectures are presentations and didactic technologies:
 - The discipline created videos and movies, latest electronic textbooks and computer programs used;
 - 2. At the workshops used educational technology: brainstorming, black box, organizers, working in small groups.
- Also on discipline are: n rezentatsii lectures: 2 - Uzbek, 2 in Russian.
 Training videos: 17 educational films and commercials (1 for each practical class).
 New educational technology: interactive games - 17, organizers - 17.
 Test questions: 170 multiple-choice questions (each practical lesson on 10 test questions).

2.8. Rating control students' knowledge based on evaluation criteria for the discipline "Dental Materials and Equipment"

The main criterion of the quality of STI student is its rating, the term of the current evaluation, the evaluation of the intermediate monitoring and evaluation of the final control.

100 points in the whole discipline "Propedevtika therapeutic dentistry" distributed as follows:

Number	Type of control	The maximum score	Factor	Passing score
1.	Monitoring with a view of the CDS	50	0.5	On February 7, 5
3.	The final control	50	0.5	27, 5
	TOTAL	100	1	55.0

Discipline "Propedevtika therapeutic dentistry" lasts one semester (IV semester) for students 2-course Faculty of Dentistry.

Criterion of evaluation workshops is the current estimate, the term control of student readiness to engage and assess the quality of the job. Exercise discipline "Propedevtika therapeutic dentistry" is divided into several parts (description of each practice session is given in "Technology Education" on the subject "Propedevtika therapeutic dentistry") and each part is evaluated accordingly.

Control criteria used to assess the knowledge and skills of the student.

Number	Rating	Excellent	Good	Satisfies I-but	Dissatisfaction but I-
	Progress in%	100% - 86%	85% - 71%	70% - 55%	54% - 37%
1	Theory of free energy part	20-17,1 point	January 7 - April 1, 1 point	April 1, 0 - 1 score	1 0 9 - 7 5 score
2	Analytical part: organizer	15-13 score	January 2, 9 - 1 0.6 score	0.5 1 - 8, 2 score	8.1 - 5.5 score
	Test questions and case studies	15-13 score	January 2, 9 - 1 0.6 score	0.5 1 - 8, 2 score	8.1 - 5.5 score
3	The practical part	40-35.6 score	35.5-31 points	30.9-26.6 score	26.5-19 points
4	Test Questions	10 - 8, 6 points	8.5 - 7.1 score	7 - 5.5 score	5.4 - 3, 5 points

Evaluation criteria TC

Number	Progress in%	Rating	Student's knowledge level
1	96-100%		For practical class fully prepared: a full synopsis with relevant drawings (album). In the theoretical part of the lesson for each question gives n A complete, correct, reasoned response, which is accompanied by modern information from additional information sources. Summarizes and makes decisions, think creatively, independently analyzes. Actively and creatively involved in the analytical

		Excellent "5"	<p>part of the lesson: the leader and analyzes in the decision of organizers, right to make informed decisions and summarizes. Case studies, tests and resolves correctly, with a creative approach m, with complete explanation of the answer and additional examples.</p> <p>Manual skills performs well, knowing the sequence of steps.</p> <p>CDS has prepared a presentation using additional innovation and information technology.</p>
2	91-95%		<p>For practical class fully prepared: a full synopsis with relevant drawings (album).</p> <p>In the theoretical part of the lesson for each question gives n A complete, correct, reasoned response, which is accompanied by modern information from additional information sources. Summarizes the theoretical part and decides, think creatively, independently analyzes.</p> <p>Actively and creatively involved in the analytical part of the lesson: the leader and analyzes in the decision of organizers, right to make informed decisions and summarizes. Case of the problem and solves tests correctly.</p> <p>Manual skills performs well, knowing the sequence of steps.</p> <p>CDS has prepared a presentation using additional innovation and information technology.</p>
3	86 - 90%		<p>For practical class fully prepared: a full synopsis with relevant drawings (album).</p> <p>In the theoretical part of the lesson for each question gives n A complete, correct, reasoned response.</p> <p>Summarizes the theoretical part and decides, think creatively, independently analyzes.</p> <p>Actively and creatively involved in the analytical part of the lesson: analyzes in solving organizers, right to make informed decisions and summarizes. Case studies, tests and decides correctly, but there are some errors in the justification of the answer. Manualnomu th Skill performs well, knowing the sequence of steps.</p> <p>CDS has prepared a presentation using additional innovation and information technology.</p>
4	81-85%		Good

		"4"	<p>decides, but there are 1-2 errors. Manualnomu th Skill performs well, knowing the sequence of steps. CDS has prepared a presentation using additional innovation and information technology.</p>
5	76-80%		<p>Ready for practical exercises: a full konspek t, but the drawings did not fit the theme (album). In the theoretical part of the lesson gives the correctanswer, but at 1-2 can not answer the question. Actively involved in the analytical part of the lesson: a decision organizers decides correctly, but there are errors in the study. Case studies, tests and decides, but there are 1-2 errors. Manualnomu th Skill performs with some errors in steps. CDS has prepared a presentation with additional information technologies.</p>
6	71-75%		<p>Ready for practical exercises: a full konspek t, but the drawings did not fit the theme (album). In the theoretical part of the lesson gives the correctanswer, but at 1-2 can not answer the question. No justification responses. Actively involved in the analytical part of the lesson: a decision organizers decides correctly, but there are errors in the study. Case studies, tests and decides, but there are 2-3 errors. Manualnomu th Skill performs with some errors in steps. CDS has prepared a presentation using additional innovative technologies.</p>
7	66-70%	Satisfactory "3"	<p>To practical training is not fully ready: Abstract not written completely, but ri ures fit the theme (album). In the theoretical part of the lesson gives the correctanswer half of the questions. No justification responses. In the analytical part Partial classes: a decision organizers decides correctly, but there are errors in the study. Case studies, tests and decides, but there are 2-3 errors. Manualnomu th Skill performs with some errors in steps. CPC prepared in abstract form.</p>
8	61-65%		<p>To practical training is not fully ready: Abstract not fully written, pu ures not fit the theme (album). In the theoretical part of the lesson gives the correctanswer half of the questions. No justification responses. In the analytical part Partial classes: a decision organizers made a mistake, as there is an error in</p>

			<p>the study. Case studies, tests and decides, but there are 2-3 errors. Manualnomu th Skill performs with some errors in steps. CPC prepared in abstract form.</p>
9	55-60%		<p>To practical training is not fully ready: Abstract not written completely, no album. Theoretical part of the student is not fully learned to these questions did not give a complete answer. In the analytical part Partial classes: in solving Organizer makes some mistakes, and there are errors in the study. Case studies, tests and resolves difficult and with errors. Manualnomu th Skill performs with errors in steps. CDS is not fully prepared.</p>
10	50-54%		<p>To practical training is not fully ready: Abstract not written completely, no album. Theoretical part of the student did not learn, at the questions left unanswered. In the analytical part Partial classes: in solving Organizer makes some mistakes, and there are errors in the study. Sit uatsionnye tasks and tests solved incorrectly. Manualnomu th Skill failed. CDS is not fully prepared.</p>
11	46-49%	Unsatisfactorily "2"	<p>To practical training is not fully ready: Abstract not written completely, no album. Theoretically not part of the student learned to these questions did not answer. In the analytical part Partial classes: in the decision allows organizers blunders Sit uatsionnye tasks and tests solved incorrectly. Manualnomu th Skill failed. CDS is not fully prepared.</p>
12	41-45%		<p>To practical training is not fully ready: Abstract not written completely, no album. Student theoretical part of the lesson is not learned on the questions left unanswered. Not Partial classes in the analytical part. Sit uatsionnye tasks and tests solved incorrectly. Has no idea about the rules of execution of manual skill. CDS is not prepared.</p>
13	36-40%		<p>To practical training is not fully ready: Abstract not written completely, no album. Theoretically not part of the student learned to these questions did not answer. Not Partial classes in the analytical part. The decision IT uatsionnyh tasks and tests made many mistakes.</p>

			Has no idea about the rules of execution of manual skill. CDS is not prepared.
14	31-35%		To the practical lesson mu not ready: abstract and no album. Theoretical part of the student did not learn, at the questions left unanswered. Not Partial classes in the analytical part. Has no idea about the rules of execution of manual skill. CDS is not prepared.

Evaluation criteria CDS

Evaluation of the CDS for practical training is 5 points. 5 points are placed on certain evaluation criteria CDS. 5 points added to the TC.

Number	Progress in%	Rating	Student's knowledge level
1	4, 6-5	Excellent "5"	Work original, performed at a high level, with the use of innovative technologies. During the presentation, the students showed himself knowledgeable, fully owning material. CDS is built on a strictly laid plan, accompanied by visual material. The student answered all questions. During spolzova us explanations and interactive methods.
2	4.1-4.5		Quality work, with a creative approach, consistent with the program, is based on the subsequent literature. Presentation informative, made by modern sources. Student fully owns the information, there corresponds reasonably to all questions.
3	3, 6-4	Good "4"	Work is well built, using multimedia technology. Performed by modern sources. Rapporteur has information, but some of the questions could not about to analyze.
4	3, 1-3, 5		Presentation is built well, is based on modern sources. Rapporteur fully owns the information. Some questions about could not analyze.
5	2, 6-3	Satisfactory "3"	Work average. At registration there are shortcomings. During the defense were malfunctioning. The student could not fully explain the work.
6	2 1 - 2 5		In the design work has shortcomings and mistakes. Subject is not fully disclosed. The student was unable to answer questions about them and analyze.
7	2 and <	Unsatisfactorily "2"	The work is not quality, has many significant errors, the topic is not fully disclosed. Student e

			theor cally did not understand the essence of the work.
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Criteria for evaluation of the final control (IR)

Final control based solutions cathedral conducted orally. IR is conducted at the end of the semester, and measured at a 100-point scale-factor of 0.5. By IR allowed students who do not have "nb" for practical classes and lectures.

Tickets are available for IR with 3 questions (2-theoretical, 1 - manual skills).

Failing grade (less than 55) on the final retake control without coefficient.

Criteria IR

Number	Rating	Excellent	Good	Satisfactorily	Unsatisfactorily
	Performance in%	100% - 86%	85% - 71%	70% - 55%	54% - 37%
1	1 - question	30 - 25.6	25.5 - 21	20.9 - 16.6	16.5 - 12
2	2 - question	30 - 25.6	25.5 - 21	20.9 - 16.6	16.5 - 12
3	3 - question	40 - 35.6	35.5 - 31	30.9 - 26.6	26.5 - 19

Criteria for assessment of practical skills

	Rating	Excellent	Good	Satisfactory	Unsatisfactorily
	Performance in%	100% - 86%	85% - 71%	70% - 55%	54% - 37%
	Practical skill points	40 - 35.6	35.5 - 31	30.9 - 26.6	26.5 - 19

List of suggested reading

Main reading:

1. Magid E.A., Muxin N.A. «Atlaspo fantomnomukursuiterapevtisheskoystomatologii» M.: Medicina, 1987.
2. Kamilov H. P. va b. - «Stomatologik asbob va ashyolar» -Tashkent, 2005 y.
3. Borovskiy E.V. «Terapevtisheskaya stomatologiya». - M.,1982g.
4. Borovskiy E.V. «Terapevtisheskaya stomatologiya». - M.,1998g.
5. Mamedova F.M. "Uchebnie zadaniya po predklinicheskomu kursu terapevticheskoy stomatologii". -T., 1989 g.
6. The Biologic Basis of dental Caries. An Oral Biologi textbook. -1980. ed. Lewis Menaker.
7. Endodontics 3rd edition. - 1985. John Ide Ingle.
8. Kamilov H. P. va b. «Terapevtik stomatologiya propedevtikasi»-Tashkent, 2006y.
9. Borovskiy E.V. «Terapevtisheskaya stomatologiya». - M.,1989g.
10. Borovskiy E.V. «Stomatologiya. Rukovodstvo k praktisheskim zanyatiyam» ». - M.,1987 g.

Additional literapura:

1. 1-5 course Uchun t erapevtik stomatologiyadan Amal kunikmalar. Ilyustratsion ukuv uslubiy kullanna. Tashkent 2010-85 bet.
2. The anatomical shape of the chewing surface of the tooth - Atlas and practical guidance - Enrico Steger-102 page. - 224 color illustrations ITATION, Publisher "quintessence" -2593 KB-2, 53MB.

3. Dubov, MA, TA Shpak, Kornetova IV Modern technologies in endodontics. Textbook. Allowance. - St. Petersburg. 2005. - 96s.-5 45MB
4. Epishev VA Mamedov FM "Formularies therapeutic stomatology". - Tashkent. Medicine 1981.
5. Illustrated guide to Endodontology / Rudolf Beer, Michael A. Baumann, Andrew M. Kielbasa; Lane. with it.; Ed. EAVolkov. -M.: MEDpress Inform 2006 240c.: ill.-28 7Mb
6. Kamilov JP, Mamedov FM "Davolash stomatologiyadan" recipe spravochnigi. - 1995.
7. Kamilov JP, Yusupalihodzhaeva SH, Hudanov B.O. Therapeutics stomatologiyadi asoslari endodontics. Tashkent, 2009-245 bet.
8. Wedge FRESH anatomy of human teeth. Gorbunova IL Tutorial-M.: Medical Book. 2006 136str.-2 50MB
9. Composite restoratives and lining materials. Moscow Book plus 2002-221 p-10, 3MB
10. Maksimovskiy YM / Phantom course odontology. Atlas: Proc. allowance. - Moscow: JSC "Publisher" Medicine ", 2005.-328s.: il. (Ucheb. lit. For stud. Stomat. Factor. Med. Universities).
11. Materials science in dentistry. A.V.Vyazmitina, TL Usevich. Series of Textbooks. ROSTOVN / W: Phoenix, 2002 352s.-5Mb
12. Propaedeutic dentistry: a textbook / ed. E.A.Bazikyana. - M.: GEOTAR Media, 2010. -768 P.: Il.
13. Rizaev JO "Stomatologiyada q'llaniluvchi dori vositalari." Tashkent, 2012y.
14. Endodontics Manual for general dentists Martin Troup, Gilberto Debelyan. Moscow, St. Petersburg, Kiev, Almaty, Vilnius-2005-4-79str., 03Mb
15. Skorikova LA, VA Volkov, Bazhenov NP, Lapin NV, Urich IV propaedeutics and dental diseases. Rostov-on-Don, "Phoenix", 2002-640 page-9, 48Mb
16. Stephen Cohen, Richard Burns. Endodontics. Sank-Petersburg, "Peace and family-95", "Interline 2000" - 696 p-23, 7Mb
17. Dental abinet to: equipment, materials, tools: Textbook. allowance for medical universities / VN Trezubov, LM Mishnev, MM Soloviev, OA Krasnoslobodtseva; edited by VN Trezubova - 2nd ed., Ext. And rev. - SPb.: SpetsLit, 2006-144 p. 9, 14Mb
18. Dentistry - Textbook for universities - NN Bazhanov, Moscow, GEOTAR-MED, 2002-316 pages - 7.63 MB
19. Preventive dentistry - EV Borovsky, VS Willow new, YM Maksimovskiy LN Maksimovskaya, Moscow, "Medicine" 2002 736str, 11.4 MB
20. Preventive dentistry textbook for medical students. Edited by EV Borowski-M. "Medical Information Agency." 2004-840 p-11, 2MB
21. Khomenko LA, Bidenko NV Practical endodontics. Tools, materials and methods - M.: Book plus. 2002-216 pages - 6.47 MB.
22. Khomenko LA, Bidenko NV Practical endodontics. Tools, materials and methods, third edition, additions, corrections M. book plus. 2005-209 pages 19.2 MB.
23. Endontologiya / R.Bir, M.Baumann, S.Kim. lane. from English. under Society. Ed. Prof. TF Vinofadovoy-M.: MPDpress Inform, 2004, 368s, ill.-112Mb.
24. www: stomatologi. ru
25. <http://www.zub.ru>
26. <http://www.Edentworld.ru>

Model of instructional technology

Lesson number 1

1.TEMA: "The purpose and objectives of the subject" Propedeutics dentistry. " Ergonomics. Dental tools and their application. Principles and stages of preparation of dental hard tissues. "

<i>Time: 135 minutes</i>	<i>The number of students :8-10</i>
<i>The type and form of training sessions I</i>	Hands-on Guide
<i>The structure of the training session</i>	1. Introduction. 2. Theoretical part

	<p>3. Analytical part:</p> <ul style="list-style-type: none"> - Cluster and organizer - Test and Case study <p>4. Prakticheskaya part</p>
<i>The purpose of the activity:</i>	<ul style="list-style-type: none"> - Formulate the basic concepts of the subject "Propedeutics dentistry" - To introduce students to the profession, to explain the main provisions of dentistry. - Clarify that studies the subject "Propedeutics dentistry" - Give the basic concepts of dental materials and dental equipment. - Give an idea of manual skills.
<i>The student should know:</i>	<ul style="list-style-type: none"> - Dentistry major sections - That studying preventive dentistry - The goals and objectives of the subject Propedeutics Dentistry - The concept of ergonomics - Basic dental equipment, its use, purpose
<i>The student should be able to:</i>	<p>Safety-master technique when working on the drill</p> <ul style="list-style-type: none"> - To be able to turn on and off dentist's drill
<p><i>The tasks of the teacher:</i></p> <p>To acquaint that studying preventive dentistry, educate students - concepts of ergonomics. Buchit on the main sections of dentistry, describe the aims and objectives of the subject Propedeutics Dentistry show basic dental equipment, its use, purpose</p>	<p><i>Learning outcomes:</i></p> <ul style="list-style-type: none"> - Ras appears that studies with preventive dentistry - Tell the concept of ergonomics. Main sections dentistry - To develop the students' dental equipment, its use, purpose
<i>Training Methods</i>	The lecture, brainstorming, story, video enu, practical training, work with the book, dialogue, learning games, pinbord. organizer.
<i>Forms of learning</i>	Group work ("Learning Together", "Work with <i>me-ideas</i> "), single
<i>Training Aids</i>	A OSKA-stand, f lipchart in ideofilmy, writing board, m dressed, models, Mr. Rafik, charts, chart notes, checklist, texts.
<i>Learning Environment</i>	Especially technologically equipped rooms.
<i>Monitoring assessment</i>	Recitation: rapid test, writing-topic test

"The purpose and objectives of the subject" Propedeutics dentistry. " Ergonomics. Dental tools and their application.

Principles and stages of preparation of dental hard tissues. "

Flow chart of lesson

Phases and time occupation (135 min)	Activity	
	Teacher	students
1 - chast.45 vby 5 min 10 minutes 20 min 10 minutes	<p>1.1. Checking notebooks and visited schae mosti</p> <p>1.2 explained to the class topic and expected results. Familiarize with lesson plan.</p> <p>1. 3. Tell keywords, references to independent work (Section № .8)</p> <p>1.5. To introduce the criteria assessment during class (section number 6) change</p>	<p>Listen, write.</p> <p>Determine ask questions, Are reviewing with the evaluation criteria</p>
2 - stage. 45 min 10 minutes 10 minutes 15min 10 minutes 10 min	<p>2.1. Quick Test / faq / knowledge strengthens brain Curtains</p> <p>2.2. On yasnyaet s plan and structure the practice session ("web" work and play) (section number 3)</p> <p>2 .4. Dividing T students into groups and work rules are explained klassterom (section number 4)</p> <p>2.6. Post a stud ents visual aids for the best of its Appropriation (tests and case studies, models, products, computer programs, phantoms) to give idea how to Use them (section number 4)</p> <p>2.7. change</p>	<p>Answer, write. Work in groups,</p> <p>Groups perform</p> <p>Groups perform are</p>
3 - phase. 45 min 20 minutes 5 min 10 minutes 10 minutes	<p>3.1. Perform skills (section number 5)</p> <p>3.3. Summing up the lessons, the analysis of the work done and the students' attention is drawn to the fact that n Rigaudeau them in future work</p> <p>3.5. Assess the work of groups, Analysis provedeniya degree studies. Analysis of the checklist (section number 7)</p> <p>3.6. Give the job to Unauthorized noy work and op mined criterion of evaluation.</p>	<p>Perform practical skills</p> <p>Self-evaluate themselves and each other. Ask questions write t job</p>

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4. Motivation

Knowledge of the concepts of object "Propedeutics dentistry" to help students understand the increasingly elaborate and the tasks they have to decide in the study of the subject.

5. Interdisciplinary and Intra communications.

The teaching of this subject is based on the knowledge of students of the subject Dental equipment and materials, anatomy, physiology. The results obtained in the course of training knowledge will be used in the study of faculty and hospital dentistry, as well as other clinical disciplines.

6. C ontains

6.1Teoretic part

The purpose of propaedeutics dentistry is the etsya prepare students to work in the clinic for the treatment of ka dental caries and its complications.

During the course of propaedeutics dentistry student is required to perform the following tasks:

- to examine the management and operation of therapeutic cabin that dental clinics, equipment and tools tary, their organization and purpose;
- check the terms of ergonomics in dentistry;
- Know embryology, histology and anatomy of the teeth, in a vershenstve study anatomical and topographical structure of the root O channels;
- master the basic principles of the preparation of curry oznyh cavities to master the methodology and techniques of endo-donticheskikh interventions in the teeth of different groups;
- to know the physical and chemical properties of the filling ma rials of different groups, methods for their preparation and application tion, particularly for filling cavities of various classes resources; master root canal filling;
- familiarize yourself with the safety rules.

ERGONOMICS IN DENTISTRY

Ergonomics - a comprehensive scientific discipline that studies schaya functional state of human capabilities in the labor pa processes in order to create optimal conditions for it tions of labor. Ergonomics is closely related to psychology, physiology ergy, hygiene, uses the data of anatomy, toxicology, engineering sciences.

The tasks of ergonomics

- Ensuring maximum comfort for the physician's work, the creation and use of equipment, furniture, tools, clothing, taking into account the anthropometric measurements and anatomy and physiological peculiarities of the job.
- Good ergonomic and rational distribution equipment.
- Providing comfort air environment, lighting, noise, and vibration.
- Reducing the psychological and emotional stress on the doctor, the security of the technical wasps ciency, fitted with the cabinet.
- Reduction of physiological stress on the right by a doctor the villa organization of the workplace, the choice of convenient postures (bases TION and auxiliary), rational labor movements, poppy imum simplification of medical records.
- Proper organization of work and leisure, developed processing techniques for the prevention of occupational diseases.

Development of methods of work with the staff, improving the quasi professional development of doctors and nurses.

The importance of ergonomics in dentistry acquires particular importance these days because of the widespread use in climate nick of modern technologies and tools.

Principles of preparation of cavities on Blake:

1. Thorough, complete removal of carious dentin.
2. The expansion for the sake of warning - preventive expansion of immune cavity to areas with a view to prevention of toothDenia relapse - caries. Immune zones - it bumps and convex surfaces of the teeth.
3. Cavity Preparation "yaschikooobraznoy" forms, OJEC pechivayuschey fillings and tooth resistance to the forces arising schim when chewing.
4. Removal of overhanging having no bearing enamel margins in order to prevent relapse and they were broken off tooth decay.
5. The formation of a cavity that is convenient for the seals. Consider the processing steps used in the cavities Black's use of the recommendations.

Preparation begins with the *opening bars of the carious tee*. goal of this phase is to create access to the astonished nym tissues and clarification of the caries process. Disclosure The term is a taper or plamevidnogo diamond bur at high speed rotation thereof. Forest are along the edges of the cavity digged enamel sheds. Further examples nyayut round bur small size to the size of the mouth cavity and caution GOVERNMENTAL motion to extend the cavity as long as it will not be available for review.

The expansion cavity is konusovid GOVERNMENTAL, plamevidnymi fissure burs or medium size. Line the edge of the enamel, fissure caries was excised.

According to the principle of biological tselesoobraznosi (Lukomsky, 1955) enamel and dentin tissue excised sparingly, perhaps to of healthy tooth structure.

Debridement involves the removal of necrotic th, softened dentin. Usually carried out ekskavato rum and globular burs of various sizes at low speed rotation. Most macerated tissue is removed eq skavatorom. Round bur first dissect the wall, and then the bottom. To avoid damage to the pulp of the tooth, the motion of boron should be directed away from the center of the cavity to the outer tion tooth surface.

Formation of cavities is one of the most important Nation techniques that provide a secure fit plom would. During the processing of the cavity must purchase the "box-shaped" form at the surface and the average caries. Walls ki must be parallel to each other and perpendicular to the bottom. With deep caries in the bottom left convex participants framework of close pulp horns. To give the desired shape of the cavity is better to use cylindrical (formation of the walls), obratnokonusnye (forming a flat bottom) and coarse shevidnye drills with the mandatory water-cooled, since Ku cavity formation is carried out in close proximity with the

pulp of the tooth. In this case, the overheating of the solid tissues it may lead to inflammation. At the bottom of the deep caries formed large globular burs. The walls of the cavity as possible should be left thick enough that they are not breaking off under load during chewing. In order to reduce the stress of deformation in the filling of the cavity angles between faces optionally We go to form rounded. When forming by cavity in the dentin using rotate hog create retention points in the form of grooves, which provide additional support seal.

Treatment of enamel margins (Finishing) is concluding tional step in the formation of the cavity. It is carried out Tse view to ensuring a reliable and prevention of fit Denia development of secondary caries. The outer part of the enamel prisms at the inlet in a cavity has PBO ry of the underlying dentin and is the site of the most lower resistance chewing pressure. Broke off their leads to the appearance of secondary caries. When dissection provides for a bevel along the edge of the cavity (fold) at 45 °. In addition, the resulting skew increases the plane contact area filling material to enamel and Fuse injuring a seal against axial displacement during exposure to the same sequence of pressure. Smoothing the edges of the enamel and the creation of the bevel is performed using diamond burs acicular, llamevid-tion or cone-shaped at high speed using a water cooling system.

Technique tooth preparation, carious, YaV wish to set the subject of constant public debate.

C., the advent of new composite materials having enamel and dentin binding components originated la position regarding the possibility of revising the rules of form ming cavity. At low caries activity, postoyannm ipolzova Research protivokarioznyh funds svoevremennm treatment Research of early forms of the disease tion to carry out preventive some extension is not required. Eliminates the need for a significant increase in size ditch prepariruemoy cavity in order to make her traditional tional "yaschikoobraznoy" form we. Forming a cavity District - formula form, fill layers of its composite material with the adhesion to dentin and enamel may be provided on the securely lock the seal to the tooth.

The processing steps of cavities using adhesive technology.

Disclosure cavity. Purpose and methodology of this phase is similar to the preparation of cavities conducted in accordance accordance with the recommendations of BLACK. Types and Sizes hog used for this purpose are the same.

The second stage of processing cavity when using vanii adhesive technology combines three phases of tra ditional preparation technologies that were previously performed nyalis separately (preventive expansion, debridement and formation of cavities). Removal of affected tissue in - leads to the formation of spherical cavity and does not require imparting s of "yaschikoobraznoy" form, there is no need to hard tissue a considerable distance, since processing ve exists to visually and instrumentally evaluated healthy sections of enamel and dentin. This stage is carried out with the help schyu rapidly rotating spherical burs from the mandatory use of water cooling.

Processing of enamel margins in accordance with the requirements of enamel bonding techniques spend mowing the edges under the corner scrap 45 ° to the surface. This not only protects the edges on cavity from possible damage, but also creates a dense bessche left join with the tissues of the tooth due to adhesion mechanisms ma hold restorative material in the cavity. Received tion bevel increases the contact area of restorative ma the material to enamel. Thus, the introduction of the principles of adhesive fixing filling material does not deny, but rather complements and Saveur perfections of the classic scheme for preparation of carious - cavity by BLACK. Both methods have advantages and under ings. The task of the doctor, holding techniques, right application adopt them to achieve the best clinical effect

Criterion for evaluating the theoretical part

Maximal score 20 - 17.2 points	17-14,2 score	April 1 - 11 points	10.8 -7.4 point	7.2 score
Fine	good	Average	Dissatisfaction,	poorly

			but	
100 -86%	85-71%	70-55%	54 - 37%	36% or less

ANALYTICAL PART

Each team assesses each other gruppu. Esli trebobovanie fully met 15-point s.

group №	right and accurate answer (5)	use of visual methods (5)	Application Regulations (2, 5)	Activity Group (2, 5)	total score
1.					
2.					

As used in this lesson new educational technologies: hosting the game, "Cat in the Bag"

The methodology of the business game

"Pig in a poke"

At a game, you must have:

Bag (white opaque)

A set of tools for inspection

A set of tools for sealing

Rules of the game:

Each student gets one tool out of the bag and tells the group to which it belongs and its application.

Criterion for evaluating the analytical part

Mak.ball.-15 well	good	satisfactorily	Dissatisfaction, but	poorly
15 - 12.9	12.75 - 10.65	10.5 - 8.25	8,1-5,55	5.4 and lower
100% - 86%	85% -71%	70-55%	54% -37%	36% or less

1. Sleeves for drills can be:

A hard *

B. flexible *

V. simple, complex

G. metal, plastic

D. Solid

E. all the answers are correct

2. tweezers is used:

A. for making seals

B. Mixing of sealing mass

VA to hold the cotton turundas *

G. to determine the mobility of the teeth *

D. removal of dental plaque

- E. to hold endodontic instruments and burs *
- 3. For nekroektomii used:
 - A round burs *
 - B. Fissure
 - B. Cone
 - G. obratnokonusnye
 - D. rotate
 - E. Excavator *
- 4. For handpiece used drills size:
 - A. 2.2mm *
 - B. 2.7 mm *
 - V. 7 - 2.2 cm
 - H. 4.0 cm-4.4
 - D. 3.2 -3.6 cm
 - IE 6 - 3.2 cm
- 5. Metal spatula knead:
 - A sealing cement-based materials *
 - B. evikrol
 - B. kompalyt
 - G. gerkulayt
 - D. Diamond
 - E. temporary filling materials *
- 6. Plastic spatula knead:
 - A filling materials based on composites *
 - B. Silitsin *
 - B. phosphate cement
 - G. unifas
 - D. laktodont
 - E. Water dentin
- 7. Filling material in a cavity administered by:
 - A trowel *
 - B. shtofer
 - C. Excavator
 - D. Probe *
 - E. tweezers
- 8. With a needle Miller
 - A. determine the length, direction, and cross-channel *
 - B. remove the remains of the pulp
 - B. seal up the channel
 - G. expand channel
 - D. remove infected dentin layer of the channel walls
 - E. tamped filling material in the channel *
- 9. To remove dental plaque is used:
 - A backhoe *
 - B. trowel
 - B. shtofer
 - G. tweezers
 - D. skalery *
 - E. zond

Criterion for evaluating the tests:

Mak.ball.-15 well	good	average	dissatisfaction, but	poorly
15 - 12.9	12.75 - 10.65	10.5 - 8.25	8,1-5,55	5.4 or less
100% - 86%	85% -71%	70-55%	54% -37%	36% less

97

7. control used to assess students' knowledge:

- Oral answer
 - Active participation in the discussions
 - The solution of test problems
- And demonstration of basic skills

8. The evaluation criteria of the current control

№	Progress in%	Evaluation	The level of knowledge of the student
1	96-100%	Excellent "5"	<p>Full correct answer to the questions on the classification of dental equipment and filling materials, composition, properties and application of sealers structure of the main parts of the dental equipment, their application, prepariovaniya filling various cavities elements endodontics safety when working in the dental equipment. Sums up the results and make decisions, creative thinking, self-analyzes. Case studies and tests resolves correctly, with a creative approach, with full justification for the answer.</p> <p>Actively and creatively involved in interactive games, right to make informed decisions and summarizes and analyzes.</p> <p>Manual'nye steps performs well, knowing the sequence of steps.</p>
2	91-95%	Fine "5"	<p>Full correct answer to the questions on the classification of dental equipment and filling materials, composition, properties and application of sealers structure of the main parts of the dental equipment, their application, preparation of various filling cavities elements endodontics safety when working in the dental equipment. Sums up the results and make decisions, creative thinking, self-analyzes. Case studies and tests resolves correctly, with a creative approach, with full justification for the answer.</p> <p>Actively and creatively involved in interactive games, right to make informed decisions and summarizes and analyzes.</p> <p>Manual'nye performs steps, knowing the sequence of steps.</p>

3	86 - 90%	Fine "5"	<p>Full correct answer to the questions on the classification of dental equipment and filling materials, composition, properties and application of sealers structure of the main parts of the dental equipment, their application, elements of Endodontics, preparation and filling safety when working in the dental equipment. Sums up the results and make decisions, creative thinking, self-analyzes but there are 1-2 errors in the response. Own analyzes. Inaccuracies in solving situational problems, but with the right approach. Actively participate in interactive games, make the right decisions.</p> <p>Manual'nye performs steps, knowing the sequence of steps but there are 2-3 grammatical errors.</p>
4	81-85%	Good "4"	<p>Full correct answer to the questions on the classification of dental equipment and filling materials, composition, properties and application of sealers structure of the main parts of the dental equipment, their application, preparation and filling various cavities elements endodontics safety when working in the dental equipment. Sums up the results and make decisions, creative thinking, self-analyzes, but there is a 2-3, inaccuracies, errors. Applies in practice with the matter, said confidently, has fine views. Situational problems solved correctly, but the rationale for not fully answer.</p> <p>Actively participate in interactive games, take the right decision.</p> <p>Manual'nye steps performs confidently, knowing the sequence of steps</p>
5	76-80%	Good "4"	<p>Correct but incomplete coverage of the issue. The student knows the dental equipment and filling materials, composition, properties and application of sealers structure of the main pieces of dental equipment, their application, preparation and filling various cavities, endodontics elements, but not fully versed in the mechanism of action and the development of side effects. With the matter, said confidently, has fine views. Actively participate in interactive games. On case studies and tests gives partial solutions.</p> <p>Manual with step does not perform confidently, knowing the sequence of steps</p>
6	71-75%	Good "4"	<p>Correct but incomplete coverage of the issue. The student knows the principles of classification of different preparation and filling of cavities, but does not provide complete lists n the use of filling materials, their side effects, the basic properties</p>

			that are not fully versed in endodontics. With the matter, said confidently, has fine views. Situational problems and tests give partial solutions. In the conduct of manual skill is confusing sequence of steps.
7	66-70%	Satisfactory nary "3"	The correct answer half of the questions. The student knows the classification is not complete lists the principles of dissection, indications pr first name stomatologicheskog of dental equipment and materials, eleienty endodontics, basic properties, but poorly versed in the dissection, confuses the names of filling materialov. Ponimaet heart of the matter, said confidently, is the exact representation only Topics on certain issues. Situational problems solved correctly, but there is no justification response. Manual skill carries with difficulty.
8	61-65%	Satisfactory nary "3"	The correct answer half of the questions. The student knows the classification of Black's, not full lists the principles of dissection and sealing, the basic properties of the filling materials, but poorly versed in the choice of filling material, confuses the titles aniyah filling materials, confuses the work of root kanalahz Tells uncertainly is accurate representations only on specific issues threads . Makes mistakes in solving situational and test tasks. The student spends 2-3 steps of manual skills
9	55-60%	Satisfactory nary "3"	Reply with errors on half of the questions. The student makes an error in the classification of Black's, indications of dental equipment and dental materials, fixed with voystvah, in the principles of dissection and sealing. Tells uncertainly has partial views on the topic. Case studies, tests and solved correctly. A student holds a 1-2 pitch from manual skills.
10	50-54%	Satisfactory nary "3"	The correct answer to the third set of questions. The student knows Black's classification, indications for use, dental equipment and filling materials, composition, endodontic treatment, properties and application of sealing materials, building major parts dental equipment, their application Case Studies and tests solved correctly if the wrong approach. Manual skills are not fully executed
11	46-49%	Unsatisfactory "2"	The correct answer to the fourth set of questions. The student knows Black's classification, indications for use, dental equipment and filling materials, composition, properties and application of filling materials, principles of

			preparation and filling of cavities of different classes, the structure of the main parts of dental equipment, their application. Case studies, tests and solved correctly if the wrong approach. Manual skill is executed.
12	41-45%	Unsatisfactory "2"	Lighting fifth of the questions correctly. The student knows Black's classification, indications for dental equipment and filling materials, composition, properties and application of filling materials, the principles of filling and sealing various cavities, the structure of the main parts of dental equipment, their application Do not know the concept of conducting manual steps. Manual skill is executed.
13	36-40%	Unsatisfactory "2"	Lighting tenth of the issues with the incorrect approach. The student does not know the classification, indications for use, dental equipment and filling materials, composition, properties and application of sealing materials, building major parts dental equipment, their application . Do not know the concept of conducting manual steps. Manual skill is executed
14	31-35%	Unsatisfactory "2"	The questions do not give answers. Manual skill does not know and does not perform.

№	Evaluation	fine	good	Satisfactory	dissatisfaction, but	poorly
	Assimilation in%	100% -86%	85% - 71%	70-55%	54% -37%	36% or less
1	The theoretical part	20-17,2 mark	17-14,2 score	April 1 - 11 points	10.8 -7.4 point	7.2 score
2	The analytical part: Organiser	15 - 12.9	12.75 - 10.65	10.5 - 8.25	8 1-5,55	5.4
3	Test	15 - 12.9	12.75 - 10.65	10.5 - 8.25	8,1-5,55	5.4
4	The practical part	40-34,4-point	34-28,4 score	28 22ball	21,6-14,8 score	14.4 points
5	Test questions	10 - 8 6	8 5 - 7 1	7 0 - 5 5	5 4 - 3 7	3, 6 points

Chronological map lab:

№	Step lessons	Type of activity	Time-min.	Change
1.	Check	Notebook, the degree of participation of students	5 min. 5 min	

		Subject, purpose and objectives .. The plan, list of references Familiarization with the assessment criteria	5 min 5 min.	
2.	The theoretical part	The discussion of brain shtu pM Business Game "Web"	January 5 min. 15 minutes	5 min
3.	analytical part	Tests and solution case studies , Drafting organizers, organizer Cluster Visual aids	2 0 min 15 minutes	
4.	The practical part	Carrying out the practical skills and the conclusion of the work done.	2 0 min. 15 minutes	10 minutes
5	Total	Analysis of theoretical issues and evaluations, homework and Unauthorized te a job	10 minutes. 5 min	

CHECKLIST:

6. Key questions on the topic:

- 1.What is a phantom?
- 2.Tseli and objectives propaedeutics dentistry.
- 3.Ponyatie "Ergonomics"
- 4.Osnaschenie dental office.
- 5.Stomatologicheskie tools for inspection.
- 6.Stomatologicheskie tools for sealing.
- 7.Endodonticheskie tools.
- 8.Vidy tips.
- 9.Bory used for the preparation of cavities.
- 10.Tehnika security dentistry.

Recommended reading.

Summary

1. Borovsky EV "Preventive dentistry" AM 1975
2. Magid EA, Mukhin, NA Atlas of phantom rate and Dentistry Moscow, Medicine, 1987
3. Bohr EV "Preventive dentistry." - M., 2003
4. Borovsky EV "Preventive dentistry." - M., 1998

More

- 5.Epishev VA The main questions of ethics. The text of the lectures. - T., 1985 ..
6. EI Sokolov, Traensky GN History M.M.SI Dentistry. - 1998. .
7. Luchino ML Dental caries. - N. Novgorod, 1996.
8. Ovrutsky GD, Leontiev VK Dental caries. - M., 1986.
9. Makeev IM "New in dentistry" (special issue-№ 3 (96 (47)))

Model of instructional technology

Lesson number 2

1.TEMA:

Classification of cavities. Requirements for each stage of formation of artificial cavities on plastic blocks. Dissection of class 1.

<i>Time: 135 minutes</i>	<i>The number of students :8-10</i>
<i>The type and form of training sessions I</i>	Hands-on Lab
<i>The structure of the training session</i>	<ol style="list-style-type: none"> 1. Introduction. 2. Theoretical part 3. Analitic part: <ul style="list-style-type: none"> - Cluster and organizer -Test and Case study 4. Practical part
<i>The purpose of the activity:</i>	<ul style="list-style-type: none"> - -Establish a common understanding of the caries -Know the classification of cavities on Black -Know the concept of dissection -To provide knowledge of the principles and stages of preparation class 1 -Formulate the basic requirements for the implementation of each stage of preparation
<i>The student should know:</i>	<ul style="list-style-type: none"> - -An overview of the caries - Classification of cavities on Black -The concept of the dissection -Basic principles and stages of preparation of the 1st class. -Basic requirements for the implementation of each stage of preparation
<i>The student should be able to:</i>	<p>Safety-master technique when working on the drill</p> <ul style="list-style-type: none"> -To be able to turn on and off dentist's drill fix the boron in the tip -Select the corresponding boron for each stage of preparation -Dissect different forms on plastic blocks

<p><i>The tasks of the teacher:</i></p> <p>To acquaint with the general ideas of caries.</p> <p>A classification of cavities on Black</p> <p>Give an idea of dissection</p> <p>-To provide knowledge of the principles and stages of preparation</p> <p>-Formulate the basic requirements for the implementation of each stage of preparation</p>	<p><i>Learning Outcomes:</i> Students</p> <p>Ras with kazhut about public views on caries.</p> <p>will learn classification of cavities on Black</p> <p>formulate the basic requirements for the implementation of each stage of preparation of the 1st class.</p>
<p><i>Training Methods</i></p>	<p>The lecture, brainstorming, story, video enu, practical training, work with the book, dialogue, learning games, pinbord. organizer.</p>
<p><i>Forms of learning</i></p>	<p>Group work ("Learning Together", "Work with <i>me-ideas</i>"), single</p>
<p><i>Training Aids</i></p>	<p>A OSKA-stand, f lipchart in ideofilmy, writing board, m dressed, models, Mr. Rafik, charts, chart notes, checklist, texts.</p>
<p><i>Learning Environment</i></p>	<p>Especially technologically equipped rooms.</p>
<p><i>Monitoring assessment</i></p>	<p>Recitation: rapid test, writing-topic test</p>

Classification of cavities. Requirements for each stage of formation of artificial cavities on plastic blocks. Dissection of class 1.

Flow chart of lesson

Phases and time occupation (135 min)	Activity	
	Teacher	students
1 - part .45 Dakiki		

5 min		Listen, write.
10 minutes	1.1. Checking notebooks and visited schaemosti	
20 min	1.2 explained to the class topic and expected results. Familiarize Zanathy plan.	Determine ask questions,
10 minutes	1. 3. Tell keywords, references to independent work (Section № .8)	Are reviewing with the evaluation criteria
	1.5. To introduce the cr ITER assessment during class (section number 6)	
	Break	

2 - stage. 45 min	2.1. Quick Test / faq / knowledge strengthens brain	Answer, write.
10 minutes	Curtains	Work in groups,
10 minutes	2.2. Explains plan and structure ofthe practice session ("web" work and play) (section number 3)	Groups perform
15min	2 .4. Dividing T students into groups and work rules are explained klassterom (section number 4)	
10 minutes	2.6. Post a stud ents visual aids for the best of its Appropriation (tests and case studies, models, products, computer programs, phantoms) to give idea how to Use them (section number 4)	Groups perform are
10 min	2.7. Break	

3 - phase. 45 min	3.1. Perform skills (section number 5)	Perform practical skills
20 minutes		
5 min	3.3. Summing up the lessons, the analysis of the work done and the students' attention is drawn to the fact that n Rigaudeau them in future work	Self-evaluate themselves and each other.
10 minutes		
10 minutes	3.5. Assess the work of groups, Analysis prrovedeniya degree studies. Analysis of the checklist (section number	Ask questions write

	<p>7) 3.6. Give the job to Unauthorized noy work and op mined criterion of evaluation.</p>	<p>t job</p>
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4. Motivation

Knowledge of presentation and principles of dissection of hard tissues of the tooth, the classification of cavities by Black, drills, their species, the basic functions and their use is essential in the treatment of diseases of the teeth. Need to make the right choice for hog dissection, painless to all manipulations in the mouth. The resulting volume of theoretical knowledge and proven manual skills in the following will help future specialist successfully apply them in practice.

5. Interdisciplinary communication and Intra

The teaching of this subject is based on the knowledge of the students basics of anatomy, physiology, physics, knowledge of the subject "Dental equipment and supplies." Acquired during the course knowledge will be used in the study of faculty and hospital dentistry, as well as other clinical disciplines.

6.0. Teoretica part

6 .1. Contents

Dental caries - the disease process that occurs settlement le eruption of the tooth due to the influence of various factors (local and general), manifested demineralized tion and destruction of the hard tissue with the formation of a defect in the form of a cavity.

The main treatment for cavities is preparation - surgical treatment of the tooth, where the use - intersect non-viable dental hard tissue with subsequent schim sealing.

At preparing cavities guided Black anatomical classification, which takes into account the surface ABILITY localization of the lesion. Distinguish 5 classes lo localization of caries.

I class - the area of natural fissures of molars and premolars, blind holes incisors and molars.

II Class - contact (side) surface of the molars and premolars.

Class III-contact surfaces of incisors and canines without breaking the cutting edge.

IV Class - contact surfaces of incisors and canines with violations of integrity and cutting edge angle

V Class - cervical region of the teeth on the vestibular side and the oral surface.

When dissection should follow the principles without which it is impossible to achieve compliance goals preparation of - creating a cavity not only convenient for the seals, but also ensures its secure fit.

The concept includes a cavity formed by the following elements: edges, walls, corners, bottom. The walls of the cavity are vertical, depending on the surface of the crown, which they parallel. The angles between the parallel walls standing upright are the main elements of fixation of restorative material. The bottom of the cavity is considered to be the surface facing the pulp of the tooth, no localization of restorative principles. Basic principles of preparation of cavities were formulated at the beginning of XX century by the American tooth restorative physician J. Black, which are based on two basic premises - "Retention" and "Resistance", providing a secure fit and a warning is reducing material loss and development of secondary caries.

For Class I cavities are carious lesions placed in the natural fissures of molars and premolars, in the blind pits incisors and molars.

The most common cavities are located in the natural fissures on the chewing surfaces of molars and premolars. This so-called fissure caries. Thus by cavity can be located out -isolated from each other, separated by durable enamel walls. Such cavities dissects are separate. However, if such cavities are separated by a thin partition low strength is more advisable to combine them into a single cavity. Often in the pathological process involved all the fissures on the chewing surfaces, making one a cavity. In this case, give oral lozenge, cruciate or oval shape.

Another option cavities belonging to Class I is the Cavities are located in the natural fossa on the buccal surface of the molars.

With a small cavity and save a considerable unaltered layer of hard tissue on chewing surface, create a cavity only in the buccal surface. When the cavity becomes large, after removal of the affected tissue is a thin enamel edge. In order to avoid it were broken

off when chewing cavity output at the same quantity the surface where additional flat form site survey depth of 0.5-1 mm. below the enamel-dentin border.

The cavity also includes the class I cavity forming Xia blind pits on the lingual surface of the incisors. Their preparation requires special caution. In particular, since the bottom of the cavity is close to the pulp. Faure mu make or cylindrical cavity cal or rectangular shape.

Disclosure of spherical cavity held pine forests, and the extension - fissure bur, movements from within outwards. Necrotomy carry sharovid nym boron; overhanging edge of the enamel is removed or plamevidnym fissure bur, working them iznut. When outwards. Shape of the cavity-ratnnokonusnym or conical boron, with the mandatory water-oh lazhdeniem, since the formation is carried out in the immediate proximity with the pulp of the tooth. In Ord - ures spend processing enamel margins plamevidnym or conical boron, forming a bevel enamel - whether at an angle of 45 °.

Dissection of the hard tissues of the tooth should be carried out carefully controlled by eye using an extra artificial light, considering the review sites are inaccessible to direct the surgical field by dentists OUTER mirror. The hand must have a firm foothold in the teeth or jaws of the patient, in order to avoid injury to the patient.

Well-formed cavity is as follows:

Sidewalls - smooth and parallel to each other with rounded angles therebetween.

Bottom - smooth and flat.

The bottom of the cavity side walls at junctions formation zuyut angle of 90 °.

When dissecting class I cavities possible us the following complications.

The most serious complication is perforation of the bottom ka rioznoy cavity. Most often it is associated with surgery it carries without visual control. Sometimes the cause of complications - tion some rough manipulation excavator or boron, unsuitable for this cavity. Another complication may be the wall of the cavity broke off at the wrong you Borel preparation techniques or selection tool. Less frequent punching the wall cavity, which is considered relies near the neck of the tooth. This may be flat Khoi overview of the cavity and the lack of experience.

Filling defects in class I possibly with the aid of different TION filling materials. Therefore, there are certain differences in the preparation of the cavity under the filling. Thus, when using - use of ceramic materials damaged enamel prism was removed,

and enamel edge is beveled. In case changes cements and amalgams of diamond cutting tools beveled edge is on its entire thickness at an angle of 45 °.

When using tabs enamel edge mowing bo Lee hollow in the upper layer but at the same throughout, while the application of the composite material of the treated logo for a considerable

distance. When used for plom birovaniya amalgams and cement prefer not create bottlenecks retentate tional items, since as a result of shrinkage of the material at these sites are formed in the cracks, and therefore retentive ITATION items will not perform its function. When using vanii composite filling materials chemical Who curing cavity to form a strictly parallel parallel to the walls and the appropriate treatment of the enamel edges, due to which, fixation of fillings.

As used in this lesson new educational technologies: hosting the game "**The handle on the middle of the table**"

The methodology of the business game

"Knob in the middle of the table"

The list of questions for the game:

1. Perechislite elements cavity, the requirements to be met by either.
What are the stages 2. Iz preparation of cavities for filling.
3. Perechislite drills used at preparing cavities.
4. Nazovite tools used for sealing.

Case Studies

1. Caries defect is located in the pit blind upper lateral incisor. Which class of defects it should be classified?
2. Carious lesions localized to the cervical region 36. Which class of carious defects it should be classified?
3. The fissure in 36 carious lesions of medium depth. What form it will have after the preparation?
4. Patsient yaviyasya the dental clinic complaining of pain during the meal (with sweet and sour). A doctor in the survey found a cavity in the enamel and dentinav the anterior fissure tooth 16.

Job.

1. tools used to survey the cavity.
2. Define a class of 16 tooth on Black
3. How to apply carious process in enamel and dentin?
4. List the stages of preparation of cavities 16 tooth.
5. Explain appointment stage opening cavity and name burs used for this manipulation.

Answers.

1. Visual inspection and probing cavity is made using a dental mirror and probe.
2. This cavity refers to class 1 on Black.
3. Enamel is the most dense tissue of the tooth, as is 98% of smineralnyh components. In this regard, the carious process ezhmali rasprostronyat slower than the dentin. Enamel is overhanging edges, to be deprived of dentin.
4. . Stages of preparation: Disclosure cavity, nekretomiya, the formation of cavities, trim the edges.
5. Stage disclosure Cavities used to a more thorough inspection of cavities and the possibility of subsequent stages of preparation. To disclose carious plosti in osovnom apply fisssurnye and round burs.

Manual skills

1.Preparation of cavities of class I on the phantoms.

Purpose: Learning how to dissect the cavities class 1 Black.

Indications: Dissect cavities class 1 Black.

Fully furnished: phantoms drill, dental burs, dental tools for sealing.

Performs step by step:

№	The steps of manual skills (milestones)	Failed to comply with Stage	Partially fulfilled the stage
1.	Correctly identify the affiliation to the cavity lists a class.	0	8
2.	Choose the right drills for each stage of preparation.	0	7
3.	Perform the steps of opening and expanding cavity.	0	7
4.	Pavilno choose the appropriate form of the cavity in	0	7

	Depending on the location and depth.		
5.	Properly form a cavity (steep walls, angles, flat bottom).	0	8
6.	Create bevel the edges of cavities at an angle of 45 ⁰ .	0	7
7.	Check availability necrotic dentine dental probe.	0	6

7. control used to assess students' knowledge:

- Oral answer
- Active participation in the discussions

Results of written responses

- The solution of test problems

8. The evaluation criteria of the current control

№	Progress in%	Evaluation	The level of knowledge of the student
1	96-100%	Fine "5"	<p>Full correct answer to the questions on the classification of dental equipment and filling materials, composition, properties and application of sealers structure of the main parts of the dental equipment, their application, prepariovaniya filling various cavities elements endodontics safety when working in the dental equipment. Sums up the results and make decisions, creative thinking, self-analyzes. Case studies and tests resolves correctly, with a creative approach, with full justification for the answer.</p> <p>Actively and creatively involved in interactive games, right to make informed decisions and summarizes and analyzes.</p> <p>Manual'nye steps performs well, knowing the</p>

			sequence of steps.
2	91-95%	Fine "5"	<p>Full correct answer to the questions on the classification of dental equipment and filling materials, composition, properties and application of sealers structure of the main parts of the dental equipment, their application, preparation of various filling cavities elements endodontics safety when working in the dental equipment. Sums up the results and make decisions, creative thinking, self-analyzes. Case studies and tests resolves correctly, with a creative approach, with full justification for the answer.</p> <p>Actively and creatively involved in interactive games, right to make informed decisions and summarizes and analyzes.</p> <p>Manual'nye performs steps, knowing the sequence of steps.</p>
3	86 - 90%	Fine "5"	<p>Full correct answer to the questions on the classification of dental equipment and filling materials, composition, properties and application of sealers structure of the main parts of the dental equipment, their application, elements of Endodontics, preparation and filling safety when working in the dental equipment. Sums up the results and make decisions, creative thinking, self-analyzes but there are 1-2 errors in the response. Own analyzes. Inaccuracies in solving situational problems, but with the right approach.</p> <p>Actively participate in interactive games, make the right decisions.</p> <p>Manual'nye performs steps, knowing the sequence of steps but there are 2-3 grammatical errors.</p>
4	81-85%	Good	Full correct answer to the questions on the

		"4"	<p>classification of dental equipment and filling materials, composition, properties and application of sealers structure of the main parts of the dental equipment, their application, preparation and filling various cavities elements endodontics safety when working in the dental equipment. Sums up the results and make decisions, creative thinking, self-analyzes, but there is a 2-3, inaccuracies, errors. Applies in practice with the matter, said confidently, has fine views. Situational problems solved correctly, but the rationale for not fully answer.</p> <p>Actively participate in interactive games, take the right decision.</p> <p>Manual'nye steps performs confidently, knowing the sequence of steps</p>
5	76-80%	Good "4"	<p>Correct but incomplete coverage of the issue. The student knows the dental equipment and filling materials, composition, properties and application of sealers structure of the main pieces of dental equipment, their application, preparation and filling various cavities, endodontics elements, but not fully versed in the mechanism of action and the development of side effects. With the matter, said confidently, has fine views. Actively participate in interactive games. On case studies and tests gives partial solutions.</p> <p>Manual with step does not perform confidently, knowing the sequence of steps</p>
6	71-75%	Good "4"	<p>Correct but incomplete coverage of the issue. The student knows the principles of classification of different preparation and filling of cavities, but does not provide complete lists n the use of filling materials, their side effects, the basic properties that</p>

			are not fully versed in endodontics. With the matter, said confidently, has fine views. Situational problems and tests give partial solutions. In the conduct of manual skill is confusing sequence of steps.
7	66-70%	Satisfactory nary "3"	The correct answer half of the questions. The student knows the classification is not complete lists the principles of dissection, indications pr first name stomatologicheskog of dental equipment and materials, eleienty endodontics, basic properties, but poorly versed in the dissection, confuses the names of filling materialov. Ponimaet heart of the matter, said confidently, is the exact representation only Topics on certain issues. Situational problems solved correctly, but there is no justification response. Manual skill carries with difficulty.
8	61-65%	Satisfactory nary "3"	The correct answer half of the questions. The student knows the classification of Black's, not full lists the principles of dissection and sealing, the basic properties of the filling materials, but poorly versed in the choice of filling material, confuses the titles aniyah filling materials, confuses the work of root kanalahz Tells uncertainly is accurate representations only on specific issues threads . Makes mistakes in solving situational and test tasks. The student spends 2-3 steps of manual skills
9	55-60%	Satisfactory nary "3"	Reply with errors on half of the questions. The student makes an error in the classification of Black's, indications of dental equipment and dental materials, fixed with voystvah, in the principles of dissection and sealing. Tells uncertainly has partial views on the topic. Case studies, tests and solved

			correctly. A student holds a 1-2 pitch from manual skills.
10	50-54%	Satisfactory nary "3"	The correct answer to the third set of questions. The student knows Black's classification, indications for use, dental equipment and filling materials, composition, endodontic treatment, properties and application of sealing materials, building major parts dental equipment, their application Case Studies and tests solved correctly if the wrong approach. Manual skills are not fully executed
11	46-49%	Dissatisfactory "2"	The correct answer to the fourth set of questions. The student knows Black's classification, indications for use, dental equipment and filling materials, composition, properties and application of filling materials, principles of preparation and filling of cavities of different classes, the structure of the main parts of dental equipment, their application. Case studies, tests and solved correctly if the wrong approach. Manual skill is executed.
12	41-45%	Dissatisfactory "2"	Lighting fifth of the questions correctly. The student knows Black's classification, indications for dental equipment and filling materials, composition, properties and application of filling materials, the principles of filling and sealing various cavities, the structure of the main parts of dental equipment, their application Do not know the concept of conducting manual steps. Manual skill is executed.
13	36-40%	Dissatisfactory "2"	Lighting tenth of the issues with the incorrect approach. The student does not know the classification, indications for use, dental equipment and filling materials, composition, properties and

			application of sealing materials, building major parts dental equipment, their application . Do not know the concept of conducting manual steps. Manual skill is executed
14	31-35%	Dissatisfactory "2"	The questions do not give answers. Manual skill does not know and does not perform.

9. Chronological map classes

№	Stages classes	Forms classes	Time in min.	
			180	225
1	The opening word of the teacher (justification themes)		5	10
2	The discussion on the practical classes, the use of new educational technologies (small group discussions, case studies, "snowball method", round table, etc.), as well as checking the source of students' knowledge, the use of visual aids (slides, audio and video tapes, models, phantoms, ECG, X-ray, etc.)	The survey, an explanation	50	50
3	Summing up the discussion		10	15
4	Giving students a task to perform the practical part of training. Dacha explanations and notes for the task. Self Supervision.		25	30
5	The assimilation of the practical skills of students by teachers (Curation thematic patient)	Medical history, business games clinical case studies	30	40
6	Analysis of the results of laboratory and instrumental investigations thematic patient, differential diagnosis, treatment plan and recovery, prescribing medications, etc.	work with clinical laboratory instruments	25	30
7	Discussion of the extent to which target classes on the basis of the developed theoretical	Recitation, quiz, debate, discussion of	25	30

	knowledge and the practical results of the student's work, and in view of this assessment of the group.	the results of practical work		
8	The conclusion of this lesson instructor. Assessment of the students on 100 point system and its announcement. Dacha assignments to students at the next class (set of questions)	Information, questions for self-study.	10	20

10. Control questions:

1. Perechislite stages of preparation of dental hard tissues.
2. Nazovite elements cavity.
3. What is held burs disclosure and expansion of cavities?
4. What is nekroektomiya?
5. How right to form edges of cavities?
6. What forests are used in the performance of each stage of preparation?
7. Tsel of medical treatment?
8. What are the Criteria formed carious lesions?
9. Like methods of anesthesia used in the dissection cavity?
10. Pochemu caries treatment should not be limited only by excision of the affected tissues, as is necessary and formation of voids?

11. Recommended literature

Summary

1. Bohr EV "Preventive dentistry" AM 1975
2. Magid EA, Mukhin, NA Atlas of phantom rate and Dentistry Moscow, Medicine, 1987
3. Bohr EV "Preventive dentistry." - M., 2003
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6. Abu Ali Ibn Sina "Tib konunlari." Kitob 3, Volume 1, Part VI, VII, VIII. , Tashkent, 1979. - B. 351-394.80.
8. Epishev VA The main questions of ethics. The text of the lectures. - T., 1985 ..

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7. EI Sokolov, Traensky GN History M.M.SI Dentistry. - 1998. .
8. Mamedov, LA From the stories of created drills // J. Dentistry. - 999, № 3. - P.65-69.

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10. Dental tools. Sterilization of course for 1st year students Matney. Ibragimova MH 2,001 th. Tashkent.

Lesson number 3

1.TEMA: Classification of cavities. Ation prep class I cavities.

Flow chart of lesson

Phases and time occupation (135 min)	Activity	
	Teacher	students
1 - part .45 Dakiki 5 min 10 minutes 2 0 min 10 minutes	<p>1.1. Checking notebooks and visited schaemosti</p> <p>1.2 explained to the class topic and expected results. Familiarize Zanathy plan.</p> <p>1. 3. Tell keywords, references to independent work (Section № .8)</p> <p>1.5. To introduce the cr ITER assessment during class (section number 6)</p> <p>change</p>	<p>Listen, write.</p> <p>Determine ask questions,</p> <p>Are reviewing with the evaluation criteria</p>
2 - stage. 45 min 10 minutes 10 minutes 15min 10 minutes	<p>2.1. Quick Test / faq / knowledge strengthens brain Curtains</p> <p>2.2. On yasnyaet s plan and structure the practice session ("web" work and play) (section number 3)</p> <p>2 .4. Dividing T students into groups and work rules are explained klassterom (section number 4)</p> <p>2.6. Post a stud ents visual aids for the best of its Appropriation (tests and case studies, models, products, computer programs, phantoms) to give idea how to Use</p>	<p>Answer, write.</p> <p>Work in groups,</p> <p>Groups perform</p> <p>Groups perform are</p>

10 min	them (section number 4) 2.7. change	
3 - phase. 45 min 20 minutes 5 min 10 minutes 10 minutes	3.1. Perform skills (section number 5) 3.3. Summing up the lessons, the analysis of the work done and the students' attention is drawn to the fact that n Rigaudeau them in future work 3.5. Assess the work of groups, Analysis prrovedeniya degree studies. Analysis of the checklist (section number 7) 3.6. Give the job to Unauthorized noy work and op mined criterion of evaluation.	Perform practical skills Self-evaluate themselves and each other. Ask questions write t job

4. Motivation

Knowledge of presentation and principles of dissection solid stomach tooth for Class I, classification of cavities by Black, drills, their species, the basic functions and their use is essential in the treatment of diseases of the teeth. Need to make the right choice for hog dissection, painless to all manipulations in the mouth. The resulting volume of theoretical knowledge and proven manual skills in the following will help future specialist successfully apply them in practice.

5. Interdisciplinary communication and Intra

The teaching of this subject is based on the knowledge of the students basics of anatomy, physiology, Premet "Stomatolgicheskoe equipment and materials." Acquired during the course knowledge will be used in the study of the phantom of the course, the faculty and hospital dentistry, as well as other clinical disciplines.

6.Soderzhanie Occupation

At preparing cavities guided Black anatomical classification, which takes into account the surface ABILITY localization of the lesion. Distinguish 5 classes to localization of caries.

III class - the area of natural fissures of molars and premolars-ditch, blind holes incisors and molars.

IV Class - contact (side) surface of the molars and premolars.

Class III-contact surfaces of incisors and canines without breaking the cutting edge.

VI Class - contact surfaces of incisors and canines with violations of integrity and cutting edge angle

VII Class - cervical region of the teeth on the vestibular side and the oral surface.

For Class I cavities are carious lesions placed in the natural fissures of molars and premolars, in the blind pits incisors and molars.

The most common cavities are located in the natural fissures on the chewing surfaces of molars and premolars. This so-called fissure caries. Thus by cavity can be located out -isolated from each other, separated from durable enamel wall. Such cavities dissects are separate. However, if such cavities are separated by a thin partition low strength is more advisable to combine them into a single cavity. Often in the pathological process involved all the fissures on the chewing surfaces, making one a cavity. In this case, give oral lozenge, cruciate or oval shape.

Another option cavities belonging to Class I is the Cavities are located in the natural fossa on the buccal surface of the molars.

With a small cavity and save a considerable unaltered layer of hard tissue on chewing on - surface, create a cavity only in the buccal surface ABILITY. When the cavity becomes large, after removal of the affected tissue is a thin enamel edge. In order to avoid it were broken off when chewing cavity output at the same frequently the surface where additional forming plane site survey depth of 0.5-1 mm below the enamel-dentin border.

The cavity also includes the class I cavity forming blind pits on the lingual surface of the incisors. Their preparation requires special caution. In particular, since the bottom of the cavity is close to the pulp. Form make or cylindrical cavity or rectangular shape.

Disclosure of spherical cavity held pine forests, and the extension - fissure bur, movements from within outwards. Necrotomy carry sharp boron; overhanging edge of the enamel is removed or plane bur, working them outwards. Shape of the cavity - conical boron, with the mandatory water-cooling, since the formation is carried out in the immediate proximity with the pulp of the tooth. In Ord -

ures spend processing enamel margins planevidnym or conical boron, forming a bevel enamel - whether at an angle of 45 °.

Dissection of the hard tissues of the tooth should be carried out carefully controlled by eye using an extra artificial light, considering the review sites are inaccessible to direct the surgical field by dentists OUTER mirror. The hand must have a firm foothold in the teeth or jaws of the patient, in order to avoid injury to the patient.

Well-formed cavity is as follows:

Sidewalls - smooth and parallel to each other with rounded angles therebetween.

Bottom - smooth and flat.

The bottom of the cavity side walls at junctions formation zuyut angle of 90 °.

When dissecting class I cavities possible us the following complications.

The most serious complication is perforation of the bottom ka rioznoy cavity. Most often it is associated with surgery it carries without visual control. Sometimes the cause of complications - tion some rough manipulation excavator or boron, unsuitable for this cavity. Another complication may be the wall of the cavity broke off at the wrong you Borel preparation techniques or selection tool. Less frequent punching the wall cavity, which is considered relies near the neck of the tooth. This may be flat Khoi overview of the cavity and the lack of experience.

Filling defects in class I possibly with the aid of different TION filling materials. Therefore, there are certain differences in the preparation of the cavity under the filling. Thus, when using - use of ceramic materials damaged enamel prism was removed and the enamel edge is beveled. In case changes cements and amalgams of diamond cutting tools beveled edge is on its entire thickness at an angle of 45 °.

When using tabs enamel edge mowing bo Lee hollow in the upper layer but at the same throughout, while the application of the composite material of the treated logo for a considerable distance. When used for plom birovaniya amalgams and cements can not create bottlenecks retentate tional items, since as a result of shrinkage of the material at these sites are formed in the cracks, and therefore retentive-ITATION items will not perform its function. When using vanii composite filling materials chemical Who curing cavity to form a strictly parallel parallel to the walls and the appropriate treatment of the enamel edges, due to which, fixation of fillings.

All the teeth cavity dissected in medio-distal to the board without leaving the avenue Edelev gingival third. Nekrek tomiyu produce excavator and round bur directed Substituting it perpendicular to the buccal tooth surface. Class V cavity usually give kidney-shaped configuration or tion elongated oval. Gingival margin should have a semi lunar shape. A top - straight or curved.Prides-nevaya wall must be carefully otreparirova for, as this area is

considered to be resistant to Naim retse-wondrous caries. It may be possible not only at a right angle to the bottom, but at an acute to avoid sliding seals. The walls of the cavity must be arranged at right angles to the bottom. The bottom of cavity often do convex topography given coronal tooth cavity. Form the bottom increasingly obratnokonusnym boron

As used in this lesson new educational technologies: hosting the game "Tour Gallery»

Hosting the game "Tour the gallery."

To carry out the game I needed.

1. The required number of questions.
2. Blank sheets of paper.
3. Multi-colored pens (3-4 colors)

Rules of the Game: All the students are divided into three equal groups, then each group draws a question within 5 minutes of its particular color pen write your answer, then the group clockwise exchange sheets with answers and complete, and correct or confirm the answer of the previous . Each sheet responses should thus be from 3 answer written in different handles. Students are evaluated by the degree of correctness of the answer, additions or corrections, and the degree of participation in the game, the maximum score corresponds to the analytical bounds ball training.

Questions:

1. Klassifikatsiya cavities on Black
2. What is nekroktomiya?
3. How boron is being expanding cavity?
4. Why carious lesions is a form of "inverted cup"?

6.1 The analytical part

Case Studies

1. Kariozny defect is located in the pit blind upper lateral incisor. Which class of defects it should be classified?
2. Karioznaya cavity is localized in the cervical region 36. Which class of carious defects it should be classified?

3. In the fissures 36 carious lesions of medium depth. What form it will have after the preparation?

4. The buccal surface 27 is located below the equator crown cavities. Select the option of forming a cavity.

5. In the cervical region 15 has a cavity of decay, extending under the gum. Gипertроfированна gums, comes in a cavity, bleeding when touched. Enter the technique of forming a cavity in this case.

6. U singly located 35 circular tooth decay, hit all the cervical area. Choose the option of forming cavity. Explain your answer.

7. Patient came to the dental clinic with complaints of pain in the tooth by chemical irritants doctor on examination discovered a cavity in the cervical region on the buccal surface of the tooth 27.

Job.

1. Opredelite class of cavities by Black 27 tooth.

2. What are the main stages of tooth decay lechniya various classes.

3. Describe stage endcap cavity.

4. Perechislite materials, characterized by mechanical strength and vyvsokimi aesthetic qualities.

5. Ukazhite criteria for assessing the quality of finishing of composite fillings.

Answers.

1. This cavity belongs to class 5.

2. etap caries treatment: pain relief, prepairovanie Cavities and choice of filling material, the isolation of the tooth with saliva, antiseptic, drying the cavity, the imposition of an insulating gasket or adhesive systems, constantly filling material, trim seals, correction of occlusion.

3. Finish the edges of the cavity is the final stage of preparation. He is smoothing the edges of the cavity, removing burrs, roughness of enamel, finishing and polishing. This manipulation produced a carborundum stone, finishing a 16 - or 32-sided carbide bur, fine diamond head at low speed with a mandatory air-water cooling.

Such materials include 4.K hybrid composites.

5. Okonchatelnaya finishing fillings made of composite materials can be carried out immediately after the setting and hardening, but lutshe a day. The polished surface should have a shine after drying air "dry brilliance" from pores, the probe should slide without delays in various parts of the surface of the seal shall not be detected by a transition line "enamel-composite" dental floss

should be entered with force into the interdental space and without delay slide on the contact surface, it should not be torn and stuck.

Manual Skill

2.Preparirovanie cavities Y class on phantoms.

Objective: Learn how to dissect cavities *Y-class* Black.

Indications: Dissect cavities *Y-class* Black.

Fully furnished: phantoms drill, dental burs, dental tools for sealing.

Performs step by step:

№	Steps manualnogo skills (milestones)	Failed to comply with Stage	Partially fulfilled the stage	Follow all steps
1.	Correctly identify the affiliation to the cavity lists a class.	0	9	18
2.	Choose the right drills for each stage of preparation.	0	8	16
3.	Whether close to the gum cavity, make electrocoagulation gums.	0	9	18
4.	A cavity formed in the shape of an oval or kidney-shaped.	0	8	16
5.	The bottom of the cavity must be convex (due to the proximity of the pulp).	0	9	18
6.	On the walls of the cavity to form a retention items with the back tapered or rotate boron.	0	7	14

7.Vidy control used to assess students' knowledge:

- Oral answer
- Active participation in the discussions

Results of written responses

- The solution of test problems

8. The evaluation criteria of the current control

№	Progress in%	Evaluation	The level of knowledge of the student
1	96-100%	Fine "5"	<p>Full correct answer to the questions on the classification of dental equipment and filling materials, composition, properties and application of sealers structure of the main parts of the dental equipment, their application, prepariovaniya filling various cavities elements endodontics safety when working in the dental equipment. Sums up the results and make decisions, creative thinking, self-analyzes. Case studies and tests resolves correctly, with a creative approach, with full justification for the answer.</p> <p>Actively and creatively involved in interactive games, right to make informed decisions and summarizes and analyzes.</p> <p>Manual'nye steps performs well, knowing the sequence of steps.</p>
2	91-95%	Fine "5"	<p>Full correct answer to the questions on the classification of dental equipment and filling materials, composition, properties and application of sealers structure of the main parts of the dental equipment, their application, preparation of various filling cavities elements endodontics safety when working in the dental equipment. Sums up the results and make decisions, creative thinking, self-analyzes. Case studies and tests resolves correctly, with a creative approach, with full justification for the answer.</p> <p>Actively and creatively involved in interactive games, right to make informed decisions and summarizes and analyzes.</p>

			Manual'nye performs steps, knowing the sequence of steps.
3	86 - 90%	Fine "5"	<p>Full correct answer to the questions on the classification of dental equipment and filling materials, composition, properties and application of sealers structure of the main parts of the dental equipment, their application, elements of Endodontics, preparation and filling safety when working in the dental equipment. Sums up the results and make decisions, creative thinking, self-analyzes but there are 1-2 errors in the response. Own analyzes. Inaccuracies in solving situational problems, but with the right approach.</p> <p>Actively participate in interactive games, make the right decisions.</p> <p>Manual'nye performs steps, knowing the sequence of steps but there are 2-3 grammatical errors.</p>
4	81-85%	Good "4"	<p>Full correct answer to the questions on the classification of dental equipment and filling materials, composition, properties and application of sealers structure of the main parts of the dental equipment, their application, preparation and filling various cavities elements endodontics safety when working in the dental equipment. Sums up the results and make decisions, creative thinking, self-analyzes, but there is a 2-3, inaccuracies, errors. Applies in practice with the matter, said confidently, has fine views. Situational problems solved correctly, but the rationale for not fully answer.</p> <p>Actively participate in interactive games, take the right decision.</p> <p>Manual'nye steps performs confidently, knowing</p>

			the sequence of steps
5	76-80%	Good "4"	<p>Correct but incomplete coverage of the issue. The student knows the dental equipment and filling materials, composition, properties and application of sealers structure of the main pieces of dental equipment, their application, preparation and filling various cavities, endodontics elements, but not fully versed in the mechanism of action and the development of side effects. With the matter, said confidently, has fine views. Actively participate in interactive games. On case studies and tests gives partial solutions.</p> <p>Manual with step does not perform confidently, knowing the sequence of steps</p>
6	71-75%	Good "4"	<p>Correct but incomplete coverage of the issue. The student knows the principles of classification of different preparation and filling of cavities, but does not provide complete lists n the use of filling materials, their side effects, the basic properties that are not fully versed in endodontics. With the matter, said confidently, has fine views. Situational problems and tests give partial solutions.</p> <p>In the conduct of manual skill is confusing sequence of steps.</p>
7	66-70%	Satisfactory nary "3"	<p>The correct answer half of the questions. The student knows the classification is not complete lists the principles of dissection, indications pr first name stomatologicheskog of dental equipment and materials, eleienty endodontics, basic properties, but poorly versed in the dissection, confuses the names of filling materialov. Ponimaet heart of the matter, said confidently, is the exact representation only Topics on certain issues. Situational problems solved correctly, but there is no justification</p>

			<p>response.</p> <p>Manual skill carries with difficulty.</p>
8	61-65%	Satisfactory nary "3"	<p>The correct answer half of the questions. The student knows the classification of Black's, not full lists the principles of dissection and sealing, the basic properties of the filling materials, but poorly versed in the choice of filling material, confuses the titles aniyah filling materials, confuses the work of root kanalahz Tells uncertainly is accurate representations only on specific issues threads . Makes mistakes in solving situational and test tasks.</p> <p>The student spends 2-3 steps of manual skills</p>
9	55-60%	Satisfactory nary "3"	<p>Reply with errors on half of the questions. The student makes an error in the classification of Black's, indications of dental equipment and dental materials, fixed with voystvah, in the principles of dissection and sealing. Tells uncertainly has partial views on the topic. Case studies, tests and solved correctly.</p> <p>A student holds a 1-2 pitch from manual skills.</p>
10	50-54%	Satisfactory nary "3"	<p>The correct answer to the third set of questions. The student knows Black's classification, indications for use, dental equipment and filling materials, composition, endodontic treatment, properties and application of sealing materials, building major parts dental equipment, their application Case Studies and tests solved correctly if the wrong approach.</p> <p>Manual skills are not fully executed</p>
11	46-49%	Neudovlet- voritelno "2"	<p>The correct answer to the fourth set of questions. The student knows Black's classification, indications for use, dental equipment and filling materials, composition, properties and application</p>

			of filling materials, principles of preparation and filling of cavities of different classes, the structure of the main parts of dental equipment, their application. Case studies, tests and solved correctly if the wrong approach. Manual skill is executed.
12	41-45%	Neudovlet- voritelno "2"	Lighting fifth of the questions correctly. The student knows Black's classification, indications for dental equipment and filling materials, composition, properties and application of filling materials, the principles of filling and sealing various cavities, the structure of the main parts of dental equipment, their application Do not know the concept of conducting manual steps. Manual skill is executed.
13	36-40%	Neudovlet- voritelno "2"	Lighting tenth of the issues with the incorrect approach. The student does not know the classification, indications for use, dental equipment and filling materials, composition, properties and application of sealing materials, building major parts dental equipment, their application . Do not know the concept of conducting manual steps. Manual skill is executed
14	31-35%	Neudovlet- voritelno "2"	The questions do not give answers. Manual skill does not know and does not perform.

9. Chronological map classes

№	Stages classes	Forms classes	Time in min.	
			180	225
1	The opening word of the teacher (justification		5	10

	themes)			
2	The discussion on the practical classes, the use of new educational technologies (small group discussions, case studies, "snowball method", round table, etc.), as well as checking the source of students' knowledge, the use of visual aids (slides, audio and video tapes, models, phantoms, ECG, X-ray, etc.)	The survey, an explanation	50	50
3	Summing up the discussion		10	15
4	Giving students a task to perform the practical part of training. Dacha explanations and notes for the task. Self Supervision.		25	30
5	The assimilation of the practical skills of students by teachers (Curation thematic patient)	Medical history, business games clinical case studies	30	40
6	Analysis of the results of laboratory and instrumental investigations thematic patient, differential diagnosis, treatment plan and recovery, prescribing medications, etc.	work with clinical laboratory instruments	25	30
7	Discussion of the extent to which target classes on the basis of the developed theoretical knowledge and the practical results of the student's work, and in view of this assessment of the group.	Recitation, quiz, debate, discussion of the results of practical work	25	30
8	The conclusion of this lesson instructor. Assessment of the students on 100 point system and its announcement. Dacha assignments to students at the next class (set of questions)	Information, questions for self-study.	10	20

10. Key questions on the topic:

Control questions:

1. Klassifikatsiya cavities by Black.

2. Perechislite elements cavity.

3. Requirements applicable to the formation of cavities.

4. Specify tools used during various stages of preparation of cavities.

5. Osobennosti preparation of cavities I and V classes.

6. What cavities are cavities I and V classes on Black.

7. How should form a cavity of class I, if the chewing surface of the tooth has two closely spaced cavities?

8. What cavity shape is preferred for Class V?

9. Like there are ways to eliminate ingrown in Class V cavities gum?

10. How preparation methods are used to improve fixation, filling in the cavities of class V?

1. Rekomenduemaya literature:

Summary

1 E. Borowski "Preventive dentistry" AM 1975

2. Magid EA, Mukhin, NA Atlas of phantom rate and Dentistry Moscow, Medicine, 1987

3. Bohr EV "Preventive dentistry." - M., 2003

4 E. Borowski "Preventive dentistry." - M., 1998

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5. Luchino ML Dental caries. - Nizhny Novgorod, 1996.

6. Ovrutsky GD, Leontiev VK Dental caries. - M., 1986.

7. Methods of determining the degree of sterilization. -1991.

8. Stomatologik zhihozlar. Turlari a drill. Sterilization of course I TALABALAR Uchun. Maruza Matney. Ibragimov MH 2,001 th. Tashkent.

JP, Ibragimova MH-Tashkent, 2005y

Model of instructional technology

Lesson number 4

1. TEMA Dissection of e class II cavities.

<i>Time: 135 minutes</i>	<i>The number of students :8-10</i>
<i>The type and form of training sessions I</i>	Hands-on Lab
<i>The structure of the training session</i>	<ol style="list-style-type: none"> 1. Ction Century. 2. Theoretical part 3. Analiticheskaya part: <ul style="list-style-type: none"> - Cluster and organizer - Test and Case study 4. Prakticheskaya part
<i>The purpose of the activity:</i>	<ul style="list-style-type: none"> - preparirova form the main provisions of Class II cavities - Teach students dissection class II - - To provide knowledge about the use of different types of elections for dissection
<i>The student should know:</i>	<ul style="list-style-type: none"> - -The main provisions of St. airovaniya cavities Iiklassa - The basic principles of preparation of cavities Class II
<i>The student should be able to:</i>	<p>Safety-master technique when working on the drill</p> <ul style="list-style-type: none"> - To be able to turn on and off dentist's drill <p>dissect a cavity Class II</p>
<i>The tasks of the teacher: to form the main provisions of preparation I Class II cavities</i> -Teach students dissection class II -Teach students to provide knowledge about the use of different types of elections for dissection and	<p><i>Learning outcomes:</i></p> <p>learn the technique of Safety at work on the drill</p> <ul style="list-style-type: none"> - To be able to turn on and off dentist's drill <p>dissect a cavity Class II</p> <p>-</p>
<i>Training Methods</i>	The lecture, brainstorming, story, video enu, practical training, work with the book, dialogue, learning games, pinbord. organizer.

<i>Forms of learning</i>	Group work ("Learning Together", "Work with <i>me-ideas</i> "), single
<i>Training Aids</i>	A OSKA-stand, flipchart in ideofilm, writing board, models, Mr. Rafik, charts, chart notes, checklist, texts.
<i>Learning Environment</i>	Especially technologically equipped rooms.
<i>Monitoring assessment</i>	Recitation: rapid test, writing-topic test

Preparation of activities II class. Technological map of lesson

Phases and time occupation (135 min)	Activity	
	Teacher	students
1 - part .45 Dakiki 5 min 10 minutes 20 min 10 minutes	<p>1.1. Checking notebooks and visited schamosti</p> <p>1.2 explained to the class topic and expected results. Familiarize Zanathy plan.</p> <p>1. 3. Tell keywords, references to independent work (Section № .8)</p> <p>1.5. To introduce the cr ITER assessment during class (section number 6)</p> <p>change</p>	<p>Listen, write.</p> <p>Determine ask questions,</p> <p>Are reviewing with the evaluation criteria</p>
2 - stage. 45 min 10 minutes 10 minutes 15min 10 minutes	<p>2.1. Quick Test / faq / knowledge strengthens brain</p> <p>Curtains</p> <p>2.2. On yasnyaet s plan and structure the practice session ("web" work and play) (section number 3)</p> <p>2 .4. Dividing T students into groups and work rules are explained klassterom (section number 4)</p> <p>2.6. Post a stud ents visual aids for the best of its Appropriation (tests and case studies, models, products,</p>	<p>Answer, write.</p> <p>Work in groups,</p> <p>Groups perform</p> <p>Groups perform are</p>

10 min	computer programs, phantoms) to give idea how to Use them (section number 4) 2.7. change	
3 - phase. 45 min 20 minutes 5 min 10 minutes 10 minutes	3.1. Perform skills (section number 5) 3.3. Summing up the lessons, the analysis of the work done and the students' attention is drawn to the fact that n Rigaudeau them in future work 3.5. Assess the work of groups, Analysis prrovedeniya degree studies. Analysis of the checklist (section number 7) 3.6. Give the job to Unauthorized noy work and op mined criterion of evaluation.	Perform practical skills Self-evaluate themselves and each other. Ask questions write t job

4. Motivation

Knowledge of presentation and principles of dental hard tissue dissection by II, III, IV classes. Need to make the right choice for hog dissection, painless to all manipulations in the mouth. The resulting volume of theoretical knowledge and proven manual skills in the following will help future specialist successfully apply them in practice.

6.Soderzhane classes.

According to Black's classification, the second class caries TION cavities include cavities located on the contact surfaces of molars and premolars.

Options preparation class II cavities depend on the location, extent of the pathological process and the presence of adjacent teeth. Often resort to ren tgenografii and other complementary imaging techniques (fluorescent stomatoskopiya).

With the defeat of the contact surfaces of caries in the region STI crown equator and closer to the neck of the tooth, where access to the cavity is free due to the absence of the next tooth and

no need to take the main cavity on the chewing body surface, while the main chamber is formed without the additional site.

The main cavity without additional site forming dissolved and when cariosity extends near the chewing surface of a tooth crown.

In the presence of the adjacent teeth when handling cari gious cavity is difficult or even impossible, access to it is created through the chewing surface. Diamond or boron carbide remove enamel and dentin, which gives access to a cavity.

Special attention is required drugs ing gingival wall kvtoroe performed only after the expansion ka rioznoy cavity when it is available for review at the polyustyu all over. Gingival wall should be located gatsya directly or ostryumglom to the bottom of the main cavity. If the angle will - children blunt, may occur lunge Seal of the masticatory load kyo. Dissect gingival walls ku main cavity is best then *p obratnokonusnogo* or part of a quartz fissure bur. Feature of

class II cavity preparation is the formation of additional sites that needed to create a secure environment fixing the seal. After the formation of the main cavity begin to create - NIJ *additional site* in the form of a step, contributed kotorsh own uniform distribution of chewing pressure on the tooth. Additional space is formed within the enamel whether and dentine area 1/2- 1/3 of the chewing surfaces STI; smaller area does not provide locking seal. Width equal to the width of the additional site wasps novnoy cavity. Deepen the additional space necessary Dimo 0.5 - 1 mm below emalevodentinnoy border. When untill sufficiently deep area may occur fracture fillings, and the disparity between the sizes of the primary and secondary cavity leads to a rapid loss fillings. The bottom of the main chamber must move at a right angle to the bottom of the additional tional area. An additional area attached directly coal shape with rounded corners, or a form of "swallow On the tail, "a narrow portion of which is formed between the tubercle E, and extended - for distant from the cavity hill kami.

At the same time carious front and rear It surfaces of molars and premolars (bilateral defects - thou) cavities contact surfaces can be joined by a common additional area created by the same - in heating the surface. An important condition for the creation of such cavities is concern about the strength of the tooth. During the pre Parry should not be an ass fucking strength of the crown.

In the presence of carious lesions on the contact surface ABILITY adjacent teeth (related defects) preparirova of defects produced in one visit. If we impose plom will in one tooth, not forming a cavity in the next, and then proceed with the dissection of a nearby tooth, it can

damage the seal previously delivered. In the presence of hypertrophy of the gingiva filling for carious cavity, it is necessary to anesthetize, remove or coagulate, and only then proceed to preparation of the cavity.

Complications of dissection class II cavities.

1. Perforation of the bottom and the wall cavity.
2. Damage to adjacent teeth when trying to process a cavity without removing it by chewing on surface.
3. Damage to the papilla.

According to Black's classification, belong to the third class Class II cavities, which are located at the contact surface of incisors and canines without at violations of cutting edge.

Options preparation class III cavities are caused by involvement in the pathological process of weight loss or lingual on the surface of the tooth crown or the simultaneous defeat of these surfaces.

When the lesion is limited to hard tissues limit E only contact surface STI and the absence or presence of the adjacent tooth wide mesial period, create wasps' nest triangular cavity without additional site. The base of the triangle Single drawn to the neck of the tooth. The sides are parallel to the vertical edges of the crown. The top of triangles Golnik turned to the cutting edge. The cavity formation can be V-shaped in this form when the vestibular and lingual walls powerful enough. The main cavity of the triangle form with an additional flat on the lingual POWER hnost formed when the enamel on the lingual side is missing or a contact by Infected area with neighboring E teeth and push them with wedges or others contribute to failure. So post lar, and in cases where insufficient carious lesions but deep, but it takes considerable area at stake contact surface and conditions fixing it does not seal well. In these cases, to access to carious defect create a lingual wall, and in addition to the primary on cavity on the contact surface In particular, creates additional space at right angles to the main cavity. For better fixation of fillings in some cases, are strong points in the underlying dentin, one of the most well-preserved walls of the cavity.

When the carious cavity is formed on cervical and lateral surfaces, the formation of cavities must be taken at each surface separately. If required form additional sites, connect to - which do not recommended because more likely to break off a bit.

With deep cavities class III with the destruction of vestibular and lingual surfaces, enamel surface is dissected and form a cavity extending from the vestibular surface STI on the lingual. In such cases it is advisable rotate through the creation of a small spherical bur or depressions in the form of supporting cuts in the direction of the cutting edge.

Disclosure cavity I I depends on the extent of damage and the extent of their availability. Of aesthetic cal considerations necessary can possibly save:> bo on the vestibular surface STI crown of the tooth.

In conducting necrectomy pay special attention to removal tion of pigmented dentin to exclude him prosvechiva through the enamel of the vestibular surface to be stored even in the absence of underlying dentin, on the basis of aesthetics.

At the bottom of shallow carious cavities create flat. At the bottom of the deep carious lesion is formed into a roll, in order to avoid injuries of the pulp, taking into account is the projection of the pulp horns.

Obstacle to the formation of gingival wall polo STI class III may be a hypertrophy of the interdental sosoch ka, ingrown into the cavity. In this case, an inflamed papilla coagulated or excised. Further formation of bands ti is performed after wound healing.

Complications at preparing cavities class III.

Can be in the form of a perforated bottom of the cavity, the walls of the tooth broke off, damage to adjacent teeth boron, injuries Rowan papilla.

Cavities of Class IV, according to Black's classification, are cavities that are localized at the contact on surfaces of incisors and canines with the defeat of the cutting edge and the angle of the crown.

Options for the formation of cavities of this definition lyayutsya state of the cutting edge and the labial and lingual walls. Dissection of the cavity Class IV consists of two stages - the main container processing and forms mation additional support pads that way exists fixing the seal and prevents it from shifting in the side tion direction. Sometimes, to clarify the relation bottom ka rioznoy Class IV cavity of a tooth with a cavity to the x technological research of the tooth.

The main handle a cavity as well as class III cavity. It is better to spend cavity preparation on the lingual surface as possible keeping the labial surface of the hard tissues.

Space for additional support site and its shape is determined by considering the vastness of the carious lesion and a standing cutting edge.

In cases where the preserved vestibular and lingual walls and defect angle is not great, with additional space zdayut by forming grooves parallel to the cutting edge, taking into account the topography of the tooth cavity.

When the cutting edge is plane, and the crown angle slightly destroyed, additional ploschadkamozhnet be formed as grooves in this plane, with the aid schyu thin fissure bur.

In cases where the cutting edge of the thin wall and the weight tibulyarnaya and lingual largely destroyed Seni, create additional space in the thickness of the lingual (palatal) wall, forming the ground at right angles to the axes novnoy cavity with vertical walls.

Additional area must cover at least one third lingual (palatal) surfaces and have a depth of 0.5 - 1 mm below the enamel-dentin border. Gingival wall of the additional Executive pad typically is a continuation-Neva prides main cavity wall and the wall located on the against it, is created by a distance of 2.5 - 3 mm from the cutting edge. In disclosing the cavity are spherical or fissure bur, followed by replacement with a reverse taper to form the bottom and sides.

When using adhesive technology preparation defects IV class has certain peculiarities.

Processing cavity only removed

the affected tooth before the onset of visual and Institute strumentalno evaluated healthy dentin. Walls polo STI is given slegka.zakruglenny character. All faces re moves to the bottom of the cavity walls, the transition from one wall to another form without the expressed kinks.

In processing the enamel margins remove all overhanging, not rugged areas. Enamel mowed at an angle of 45 ° to the surface ABILITY tooth. To create an invisible eye of the transition from the enamel of the tooth to the seal on the labial surface of the tooth angle skashi tion of enamel must be increased. In the process of preparation of enamel should not be placed seals border in concentrations of occlusal forces.

In total reconstruction of the vestibular surface of the principle vinirovaniya, ie wall composition insulating material.

In conducting *vinirovaniya* should consider the following guides circumstances:

1. Optimal cosmetic effect is achieved by removing all altered, colored areas of solid tissue It tooth. If it is impossible to carry out the complete removal of a primary layer of opaque material is applied, the mask color spots.

2. The depth of the vestibular surface preparation for depends on the position of the tooth in the dentition, the degree of color change and the size of the carious defect.

3. When extending the tooth cutting edge treatment is needed and the palatal surface, with the creation of more extensive areas.

4. Vinirovanie contraindicated in patients with symptoms of parafunktsy and level bite.

At preparing the cavity Class IV may follow ing complications:

1. Perforation of the tooth cavity.

2. Break off the walls of the tooth.

3. Damage to the intact enamel on the labial side of the tooth.

4. Thermal injury of the pulp caused by overheating of the tissue at preparing it.

5. Endangering papilla.

6. Improper formation of enamel margins.

7. Incomplete removal of pigmented dentin, actuators dyaschee an incomplete cosmetic fillings.

Conducting the game "Tour Gallery":

Suggested questions:

1. What tools are used for dissection of cavities?
2. Nazovite stages of preparation of cavities?
3. Osobennosti preparation of cavities I and V classes.
4. Osobennosti preparation class II cavities.
5. Osobennosti preparation of cavities III and IV.

6.2. Analiticheskaya part

Case Studies

Case Studies

1. Kariozny defect is located in the pit blind upper lateral incisor. Which class of defects it should be classified?
2. Karioznaya cavity is localized in the cervical region 36. Which class of carious defects it should be classified?
3. In the fissures 36 carious lesions of medium depth. What form it will have after the preparation?
4. The buccal surface 27 is located below the equator crown cavities. Select the option of forming a cavity.
5. In the cervical region 15 has a cavity of decay, extending under the gum. Gipertrofirovanna gums, comes in a cavity, bleeding when touched. Enter the technique of forming a cavity in this case.
6. U singly located 35 circular tooth decay, hit all the cervical area. Choose the option of forming cavity. Explain your answer.
7. Patsient came to the dental clinic with complaints of pain in the tooth by chemical irritants doctor on examination discovered a cavity in the cervical region on the buccal surface of the tooth 27.
Job.
 1. Opredelite class of cavities by Black 27 tooth.

2. What are the main stages of tooth decay lechniya various classes.
3. Describe stage endcap cavity.
4. Perchislite materials, characterized by mechanical strength and vyvsokimi aesthetic qualities.
5. Ukazhite criteria for assessing the quality of finishing of composite fillings.

Answers.

1. Define the class of carious paolosti on Black 36 tooth.
2. Nazovite preparirovaniya stages of cavities.
3. Nazovite tools used for nekroektomii.
4. List the basic filling materials parimanyaemye for imposing postchnno fillings in tooth 36.
5. What are the contraindications for the use of amalgam sereboyannoy when filling cavities 2 classes.

Answers.

1. This paolost applies to Class 2 on Black.
2. etap preparation: Disclosure cavity, necrotomy, shaping and finishing the edges of the cavity Carion.
3. Necrotomy is udaleie necrotic dentin. Necrotizing soft dentin is removed excavators. Dense nerotizirovanny dentin is removed round bur.
4. The main filling materials used for plombiriyvaniya cavities 2 classes: amalgam, composites.
5. N amalgam recommended to use thin-walled cavities, in the presence of heterogeneous metallov poldosti mouth (iskusstvnnye crown. Bridges gold) as amalgtrovaniya possible conditions, as well as aesthetic reasons.

6.3. The practical part

Manual skills

3. Preparirovanie Class II cavities on phantoms.

Objective: Learn how to dissect a *Class II* cavities by Black.

Indications: Dissect *Class II* cavities by Black.

Fully furnished: phantoms drill, dental burs, dental tools for sealing.

Performs step by step:

№	Steps	manualnogo	skills	Failed	to	Partially	Follow	all
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	(milestones)	comply with Stage	fulfilled the stage	steps
1.	Correctly identify the affiliation to the cavity lists a class.	0	9	18
2.	Conduct a separation, a separation-sided disc.	0	9	18
3.	Preparation begins with the chewing surfaces of cavities and after falling through into the cavity transferred to treatment with chewing telnoypoverhnosti.	0	8	16
4.	Necrotic tissue removed a small round bur movements in the buccolingual direction.	0	8	16
5.	To choose the appropriate form of the cavity, depending on the location and depth.	0	7	14
6.	A cavity formed with the formation of steps on the dentin of the tooth.	0	9	18

7. Vidy control used to assess students' knowledge:

- Oral answer
- Active participation in the discussions

Results of written responses

- The solution of test problems

8. The evaluation criteria of the current control

9. Chronological map classes

№	Stages classes	Forms classes	Time in min.	
			180	225
1	The opening word of the teacher (justification themes)		5	10

2	The discussion on the practical classes, the use of new educational technologies (small group discussions, case studies, "snowball method", round table, etc.), as well as checking the source of students' knowledge, the use of visual aids (slides, audio and video tapes, models, phantoms, ECG, X-ray, etc.)	The survey, an explanation	50	50
3	Summing up the discussion		10	15
4	Giving students a task to perform the practical part of training. Dacha explanations and notes for the task. Self Supervision.		25	30
5	The assimilation of the practical skills of students by teachers (Curation thematic patient)	Medical history, business games clinical case studies	30	40
6	Analysis of the results of laboratory and instrumental investigations thematic patient, differential diagnosis, treatment plan and recovery, prescribing medications, etc.	work with clinical laboratory instruments	25	30
7	Discussion of the extent to which target classes on the basis of the developed theoretical knowledge and the practical results of the student's work, and in view of this assessment of the group.	Recitation, quiz, debate, discussion of the results of practical work	25	30
8	The conclusion of this lesson instructor. Assessment of the students on 100 point system and its announcement. Dacha assignments to students at the next class (set of questions)	Information, questions for self-study.	10	20

Control questions:

1. Nazovite stages of dissection cavity.
2. What elements of the cavity you know?
3. What cavities are cavities of class I and V?
4. How oral cavities are Class II?

5. What cavities are cavities of III and IV class?
6. Vsegda whether to withdraw a cavity on the chewing surface with its localization on the buccal surface?
7. Osobennosti formation of class II cavities in the absence of the adjacent tooth.
8. Pri dissection any cavities class separation is carried out teeth?
9. Kakovy particular preparation class III cavities, depending on the depth of cavity, its size, position the teeth in the dentition?
10. Kakovy principles of cavity preparation class IV?

11. Rekomenduemaya literature

Summary

- 1 E. Borowski "Preventive dentistry" AM 1975
2. Magid EA, Mukhin, NA Atlas of phantom rate and Dentistry Moscow, Medicine, 1987
3. Bohr EV "Preventive dentistry." - M., 2003
- 4 E. Borowski "Preventive dentistry." - M., 1998

More

1. Petrikas AZ Oprativnaya and reconstructive dentistriya. 1994g.-285s.
2. Chilikin VA. The latest technology in aesthetic dentistry. - Moscow: SUE NIKIET 2001 .. - C. 53-59.
3. Nikolaev AI, Tsepov LM Practical a therapeutic dentistry. -2 Edition MED-press-inform, 2003.-with 59-291.

Model of instructional technology

Lesson number 5

1. TEMA: Ation prep cavities Grade 3 and

"

<i>Time: 135 minutes</i>	<i>The number of students :8-10</i>
<i>The type and form of training sessions I</i>	Hands-on Lab
<i>The structure of the training session</i>	<ol style="list-style-type: none"> 1. Ction Century. 2. Theoretical part 3. Analiticheskaya part: <ul style="list-style-type: none"> - Cluster and organizer - Test and Case study

	4.Prakticheskaya part
<i>The purpose of the activity:</i>	<ul style="list-style-type: none"> - -Form the main provisions of cavity preparation Class 3 -To give a classification of cavities on Black -Train-be students for dissection class 3 - To provide knowledge about the use of different types of elections for dissection
<i>The student should know:</i>	<ul style="list-style-type: none"> - Mainly laid Ia preparation of cavities 3 classes -Classification of cavities on Black <p>The basic principles of prep-lution cavities for class 3</p>
<i>The student should be able to:</i>	<p>Safety-master technique when working on the drill</p> <ul style="list-style-type: none"> -To be able to turn on and off dentist's drill properly record the tip in the hand -Right to select drills for dissection 3 to Lassa -Prepare a ovat cavities for 43 class
<i>The tasks of the teacher:</i>	<i>Learning outcomes:</i>
<ul style="list-style-type: none"> - -Form the main provisions of cavity preparation classes I and V -To give a classification of cavities on Black -Teach students dissection Class I - To provide knowledge about the use of different types of elections for dissection 	<p>students</p> <ul style="list-style-type: none"> Ras with kazhut about public views on caries. will learn classification of cavities on Black formulate the basic requirements for the implementation of each stage of preparation
<i>Training Methods</i>	The lecture, brainstorming, story, video enu, practical training, work with the book, dialogue, learning games, pinbord. organizer.
<i>Forms of learning</i>	Group work ("Learning Together", "Work with <i>me-ideas</i> "), single

<i>Training Aids</i>	A OSKA-stand, flipchart in ideofilmy, writing board, models, Mr. Rafik, charts, chart notes, checklist, texts.
<i>Learning Environment</i>	Especially technologically equipped rooms.
<i>Monitoring assessment</i>	Recitation: rapid test, writing-topic test

. Ing drugs cavities 3 and class.

Flow chart of lesson

Phases and time occupation (135 min)	Activity	
	Teacher	students
1 - part .45 Dakiki 5 min 10 minutes 20 min 10 minutes	<p>1.1. Checking notebooks and visited schaeomosti</p> <p>1.2 explained to the class topic and expected results. Familiarize Zanathy plan.</p> <p>1. 3. Tell keywords, references to independent work (Section № .8)</p> <p>1.5. To introduce the cr ITER assessment during class (section number 6) change</p>	<p>Listen, write.</p> <p>Determine ask questions,</p> <p>Are reviewing with the evaluation criteria</p>
2 - stage. 45 min 10 minutes 10 minutes 15min 10 minutes	<p>2.1. Quick Test / faq / knowledge strengthens brain Curtains</p> <p>2.2. On yasnyaet s plan and structure the practice session ("web" work and play) (section number 3)</p> <p>2 .4. Dividing T students into groups and work rules are explained klassterom (section number 4)</p> <p>2.6. Post a stud ents visual aids for the best of its Appropriation (tests and case studies, models, products, computer programs, phantoms) to give idea how to Use</p>	<p>Answer, write.</p> <p>Work in groups,</p> <p>Groups perform</p> <p>Groups perform are</p>

10 min	them (section number 4) 2.7. change	
3 - phase. 45 min 20 minutes 5 min 10 minutes 10 minutes	3.1. Perform skills (section number 5) 3.3. Summing up the lessons, the analysis of the work done and the students' attention is drawn to the fact that n Rigaudeau them in future work 3.5. Assess the work of groups, Analysis prrovedeniya degree studies. Analysis of the checklist (section number 7) 3.6. Give the job to Unauthorized noy work and op mined criterion of evaluation.	Perform practical skills Self-evaluate themselves and each other. Ask questions write t job

4. Motivation

Knowledge of presentation and principles of dissection solid stomach tooth for Class I, classification of cavities by Black, drills, their species, the basic functions and their use is essential in the treatment of diseases of the teeth. Need to make the right choice for hog dissection, painless to all manipulations in the mouth. The resulting volume of theoretical knowledge and proven manual skills in the following will help future specialist successfully apply them in practice.

5. Interdisciplinary communication and Intra

The teaching of this subject is based on the knowledge of the students basics of anatomy, physiology, Premet "Stomatolgicheskoe equipment and materials." Acquired during the course knowledge will be used in the study of the phantom of the course, the faculty and hospital dentistry, as well as other clinical disciplines.

6.Soderzhanie Occupation

Options preparation class III cavities are caused by involvement in the pathological process of weight tibulyarnoy or lingual on the surface of the tooth crown or the simultaneous defeat of these surfaces.

When the lesion is limited to hard tissues limit E only contact surface STI and the absence or presence of the adjacent tooth wide mezhzub tion period, create wasps novnuyu triangular cavity without additional site. The base of the triangle Single drawn to the neck of the tooth. The sides are parallel to the vertical edges of the crown. The top of triangles Golnik turned to the cutting edge. The cavity formation can be Vat in this form when the vestibular and lingual walls powerful enough. The main cavity of the triangle tion form with an additional flat on the lingual PoWER hnosti formed when the enamel on the lingual side us has no basis dentin you or a contact by Infected area with neighboring E teeth and push them with wedges or others contribute sobom fails. So post lar, and in cases where insufficient carious lesions but deep, but it takes knowledge siderable area at stake contact surface and conditions tions fixing it does not seal well. In these cases, teas access to carious de Fecteau create a lingual wall, and in addition to the primary on cavity on the contact surface In particular, creates additional tion space at right angles to the main cavity. For better fixation of fillings in some cases, are strong points in the underlying dentin, one of the most well-preserved walls of the cavity.

When the carious cavity is formed on copper Hoc and lateral surfaces, the formation of cavities must be taken at each surface separately. If required sary form additional sites, connect to - which do not recommended because more likely to break off a bit.

With deep cavities class III with the destruction of vestibular lar and lingual surfaces, enamel surface is dissected and form a cavity extending from the vestibular surface STI on the lingual. In such cases it is advisable rotate through the creation of a small spherical boron or depressions in the form of supporting cuts in the direction of the cutting edge.

Disclosure cavity l l depends on the extent of damage and the extent of their availability. Of aesthetic cal considerations necessary can possibly save:> bo on the vestibular surface STI crown of the tooth.

In conducting necrectomy pay special attention to removal tion of pigmented dentin to exclude him prosvechiva through the enamel of the vestibular surface to be stored even in the absence of underlying dentin, on the basis of aesthetics.

At the bottom of shallow carious cavities create flat. At the bottom of the deep carious lesion is formed into a roll, in order to avoid injuries of the pulp, taking into account is the projection of the pulp horns.

Obstacle to the formation of gingival wall polo STI class III may be a hypertrophy of the interdental space, ingrown into the cavity. In this case, an inflamed papilla coagulated or excised. Further formation of bands is performed after wound healing.

Complications at preparing cavities class III.

Can be in the form of a perforated bottom of the cavity, the walls of the tooth broke off, damage to adjacent teeth, injuries to the papilla.

As used in this lesson new educational technologies: hosting the game "Tour Gallery»

Hosting the game "Tour the gallery."

To carry out the game I needed.

1. The required number of questions.
2. Blank sheets of paper.
3. Multi-colored pens (3-4 colors)

Rules of the Game: All the students are divided into three equal groups, then each group draws a question within 5 minutes of its particular color pen write your answer, then the group clockwise exchange sheets with answers and complete, and correct or confirm the answer of the previous. Each sheet responses should thus be from 3 answer written in different handles. Students are evaluated by the degree of correctness of the answer, additions or corrections, and the degree of participation in the game, the maximum score corresponds to the analytical bounds ball training.

Questions:

1. Klassifikatsiya cavities on Black
2. What is nekrotomiya?
3. How boron is being expanding cavity?
4. Why carious lesions is a form of "inverted cup"?

6.1 The analytical part

Case Studies

1. Carious defect is located in the pit blind upper lateral incisor. Which class of defects it should be classified?
2. Carious cavity is localized in the cervical region 36. Which class of carious defects it should be classified?

3. In the fissures 36 carious lesions of medium depth. What form it will have after the preparation?

4. The buccal surface 27 is located below the equator crown cavities. Select the option of forming a cavity.

5. In the cervical region 15 has a cavity of decay, extending under the gum. Gипertроfированна gums, comes in a cavity, bleeding when touched. Enter the technique of forming a cavity in this case.

6. U singly located 35 circular tooth decay, hit all the cervical area. Choose the option of forming cavity. Explain your answer.

7. Patient came to the dental clinic with complaints of pain in the tooth by chemical irritants doctor on examination discovered a cavity in the cervical region on the buccal surface of the tooth 27.

Job.

1. Opredefinite class of cavities by Black 27 tooth.

2. What are the main stages of tooth decay lechniya various classes.

3. Describe stage endcap cavity.

4. Perechislite materials, characterized by mechanical strength and vyvsokimi aesthetic qualities.

5. Ukazhite criteria for assessing the quality of finishing of composite fillings.

Answers.

1. This cavity belongs to class 5.

2. etap caries treatment: pain relief, prepairovanie Cavities and choice of filling material, the isolation of the tooth with saliva, antiseptic, drying the cavity, the imposition of an insulating gasket or adhesive systems, constantly filling material, trim seals, correction of occlusion.

3. Finish the edges of the cavity is the final stage of preparation. He is smoothing the edges of the cavity, removing burrs, roughness of enamel, finishing and polishing. This manipulation produced a carborundum stone, finishing a 16 - or 32-sided carbide bur, fine diamond head at low speed with a mandatory air-water cooling.

Such materials include 4.K hybrid composites.

5. Okonchatelnaya finishing fillings made of composite materials can be carried out immediately after the setting and hardening, but lutshe a day. The polished surface should have a shine after drying air "dry brilliance" from pores, the probe should slide without delays in various parts of the surface of the seal shall not be detected by a transition line "enamel-composite" dental floss

should be entered with force into the interdental space and without delay slide on the contact surface, it should not be torn and stuck.

Manual Skill

2. Preparirovanie cavities 3 class on phantoms.

Objective: Learn how to dissect cavities Class 3 on Black.

Indications: Dissect cavities Class 3 on Black.

Fully furnished: phantoms drill, dental burs, dental tools for sealing.

Performs step by step:

№	Steps manualnogo skills (milestones)	Failed to comply with Stage	Partially fulfilled the stage	Follow all steps
1.	Correctly identify the affiliation to the cavity lists a class.	0	9	18
2.	Choose the right drills for each stage of preparation.	0	8	16
3.	Whether close to the gum cavity, make electrocoagulation gums.	0	9	18
4.	A cavity formed in the shape of an oval or kidney-shaped.	0	8	16
5.	The bottom of the cavity must be convex (due to the proximity of the pulp).	0	9	18
6.	On the walls of the cavity to form a retention items with the back tapered or rotate boron.	0	7	14

7. Vidy control used to assess students' knowledge:

- Oral answer
- Active participation in the discussions

Results of written responses

- The solution of test problems

8. The evaluation criteria of the current control

№	Progress in%	Evaluation	The level of knowledge of the student
1	96-100%	Fine "5"	<p>Full correct answer to the questions on the classification of dental equipment and filling materials, composition, properties and application of sealers structure of the main parts of the dental equipment, their application, prepariovaniya filling various cavities elements endodontics safety when working in the dental equipment. Sums up the results and make decisions, creative thinking, self-analyzes. Case studies and tests resolves correctly, with a creative approach, with full justification for the answer.</p> <p>Actively and creatively involved in interactive games, right to make informed decisions and summarizes and analyzes.</p> <p>Manual'nye steps performs well, knowing the sequence of steps.</p>
2	91-95%	Fine "5"	<p>Full correct answer to the questions on the classification of dental equipment and filling materials, composition, properties and application of sealers structure of the main parts of the dental equipment, their application, preparation of various filling cavities elements endodontics safety when working in the dental equipment. Sums up the results and make decisions, creative thinking, self-analyzes. Case studies and tests resolves correctly, with a creative approach, with full justification for the answer.</p> <p>Actively and creatively involved in interactive games, right to make informed decisions and summarizes and analyzes.</p>

			Manual'nye performs steps, knowing the sequence of steps.
3	86 - 90%	Fine "5"	<p>Full correct answer to the questions on the classification of dental equipment and filling materials, composition, properties and application of sealers structure of the main parts of the dental equipment, their application, elements of Endodontics, preparation and filling safety when working in the dental equipment. Sums up the results and make decisions, creative thinking, self-analyzes but there are 1-2 errors in the response. Own analyzes. Inaccuracies in solving situational problems, but with the right approach.</p> <p>Actively participate in interactive games, make the right decisions.</p> <p>Manual'nye performs steps, knowing the sequence of steps but there are 2-3 grammatical errors.</p>
4	81-85%	Good "4"	<p>Full correct answer to the questions on the classification of dental equipment and filling materials, composition, properties and application of sealers structure of the main parts of the dental equipment, their application, preparation and filling various cavities elements endodontics safety when working in the dental equipment. Sums up the results and make decisions, creative thinking, self-analyzes, but there is a 2-3, inaccuracies, errors. Applies in practice with the matter, said confidently, has fine views. Situational problems solved correctly, but the rationale for not fully answer.</p> <p>Actively participate in interactive games, take the right decision.</p> <p>Manual'nye steps performs confidently, knowing</p>

			the sequence of steps
5	76-80%	Good "4"	<p>Correct but incomplete coverage of the issue. The student knows the dental equipment and filling materials, composition, properties and application of sealers structure of the main pieces of dental equipment, their application, preparation and filling various cavities, endodontics elements, but not fully versed in the mechanism of action and the development of side effects. With the matter, said confidently, has fine views. Actively participate in interactive games. On case studies and tests gives partial solutions.</p> <p>Manual with step does not perform confidently, knowing the sequence of steps</p>
6	71-75%	Good "4"	<p>Correct but incomplete coverage of the issue. The student knows the principles of classification of different preparation and filling of cavities, but does not provide complete lists n the use of filling materials, their side effects, the basic properties that are not fully versed in endodontics. With the matter, said confidently, has fine views. Situational problems and tests give partial solutions.</p> <p>In the conduct of manual skill is confusing sequence of steps.</p>
7	66-70%	Satisfactory "3"	<p>The correct answer half of the questions. The student knows the classification is not complete lists the principles of dissection, indications pr first name stomatologicheskog of dental equipment and materials, eleienty endodontics, basic properties, but poorly versed in the dissection, confuses the names of filling materialov. Ponimaet heart of the matter, said confidently, is the exact representation only Topics on certain issues. Situational problems solved correctly, but there is no justification</p>

			<p>response.</p> <p>Manual skill carries with difficulty.</p>
8	61-65%	Satisfactory nary "3"	<p>The correct answer half of the questions. The student knows the classification of Black's, not full lists the principles of dissection and sealing, the basic properties of the filling materials, but poorly versed in the choice of filling material, confuses the titles aniyah filling materials, confuses the work of root kanalahz Tells uncertainly is accurate representations only on specific issues threads . Makes mistakes in solving situational and test tasks.</p> <p>The student spends 2-3 steps of manual skills</p>
9	55-60%	Satisfactory nary "3"	<p>Reply with errors on half of the questions. The student makes an error in the classification of Black's, indications of dental equipment and dental materials, fixed with voystvah, in the principles of dissection and sealing. Tells uncertainly has partial views on the topic. Case studies, tests and solved correctly.</p> <p>A student holds a 1-2 pitch from manual skills.</p>
10	50-54%	Satisfactory nary "3"	<p>The correct answer to the third set of questions. The student knows Black's classification, indications for use, dental equipment and filling materials, composition, endodontic treatment, properties and application of sealing materials, building major parts dental equipment, their application Case Studies and tests solved correctly if the wrong approach.</p> <p>Manual skills are not fully executed</p>
11	46-49%	Neudovlet- voritelno "2"	<p>The correct answer to the fourth set of questions. The student knows Black's classification, indications for use, dental equipment and filling materials, composition, properties and application</p>

			of filling materials, principles of preparation and filling of cavities of different classes, the structure of the main parts of dental equipment, their application. Case studies, tests and solved correctly if the wrong approach. Manual skill is executed.
12	41-45%	Neudovlet- voritelno "2"	Lighting fifth of the questions correctly. The student knows Black's classification, indications for dental equipment and filling materials, composition, properties and application of filling materials, the principles of filling and sealing various cavities, the structure of the main parts of dental equipment, their application Do not know the concept of conducting manual steps. Manual skill is executed.
13	36-40%	Neudovlet- voritelno "2"	Lighting tenth of the issues with the incorrect approach. The student does not know the classification, indications for use, dental equipment and filling materials, composition, properties and application of sealing materials, building major parts dental equipment, their application . Do not know the concept of conducting manual steps. Manual skill is executed
14	31-35%	Neudovlet- voritelno "2"	The questions do not give answers. Manual skill does not know and does not perform.

9. Chronological map classes

№	Stages classes	Forms classes	Time in min.	
			180	225
1	The opening word of the teacher (justification		5	10

	themes)			
2	The discussion on the practical classes, the use of new educational technologies (small group discussions, case studies, "snowball method", round table, etc.), as well as checking the source of students' knowledge, the use of visual aids (slides, audio and video tapes, models, phantoms, ECG, X-ray, etc.)	The survey, an explanation	50	50
3	Summing up the discussion		10	15
4	Giving students a task to perform the practical part of training. Dacha explanations and notes for the task. Self Supervision.		25	30
5	The assimilation of the practical skills of students by teachers (Curation thematic patient)	Medical history, business games clinical case studies	30	40
6	Analysis of the results of laboratory and instrumental investigations thematic patient, differential diagnosis, treatment plan and recovery, prescribing medications, etc.	work with clinical laboratory instruments	25	30
7	Discussion of the extent to which target classes on the basis of the developed theoretical knowledge and the practical results of the student's work, and in view of this assessment of the group.	Recitation, quiz, debate, discussion of the results of practical work	25	30
8	The conclusion of this lesson instructor. Assessment of the students on 100 point system and its announcement. Dacha assignments to students at the next class (set of questions)	Information, questions for self-study.	10	20

10. Key questions on the topic:

Control questions:

1. Klassifikatsiya cavities by Black.

2. Perechislite elements cavity.
3. Requirements applicable to the formation of cavities.
4. Specify tools used during various stages of preparation of cavities.
5. Osobennosti preparation of cavities I and V classes.
6. What cavities are cavities I and V classes on Black.
7. How should form a cavity of class I, if the chewing surface of the tooth has two closely spaced cavities?
8. What cavity shape is preferred for Class V?
9. Like there are ways to eliminate ingrown in Class V cavities gum?
10. How preparation methods are used to improve fixation, filling in the cavities of class V?

1.Rekomenduemaya literature:

Summary

- 1 E. Borowski "Preventive dentistry" AM 1975
2. Magid EA, Mukhin, NA Atlas of phantom rate and Dentistry Moscow, Medicine, 1987
3. Bohr EV "Preventive dentistry." - M., 2003
- 4 E. Borowski "Preventive dentistry." - M., 1998

More

5. Luchino ML Dental caries. - N. Novgorod, 1996.
6. Ovrutsky GD, Leontiev VK Dental caries. - M., 1986.
7. Methods of determining the degree of sterilization. -1991.
8. Stomatologik zhihozlar. Turlari a drill. Sterilization of course I TALABALAR Uchun. Maruza Matney. Ibragimov MH 2,001 th. Tashkent.
JP, Ibragimova MH-Tashkent, 2005y.

Model of instructional technology

Lesson number 6

1.TEMA: Classification of cavities. Ation prep cavities 4 and Class

"

<i>Time: 135 minutes</i>	<i>The number of students :8-10</i>
<i>The type and form of training sessions I</i>	Hands-on Lab
<i>The structure of the training session</i>	<ol style="list-style-type: none"> 1. Ction Century. 2. Theoretical part 3. Analiticheskaya part: <ul style="list-style-type: none"> - Cluster and organizer - Test and Case study 4. Prakticheskaya part
<i>The purpose of the activity:</i>	<ul style="list-style-type: none"> - Form the main provisions of cavity preparation class 4 - To give a classification of cavities on Black - Train-be students for dissection class 4 - To provide knowledge about the use of different types of elections for dissection
<i>The student should know:</i>	<ul style="list-style-type: none"> - Mainly laid Ia preparation of cavities 4 classes - Classification of cavities on Black The basic principles of prep-lution cavities for class 4
<i>The student should be able to:</i>	<p>Safety-master technique when working on the drill</p> <ul style="list-style-type: none"> - To be able to turn on and off dentist's drill <p>properly record the tip in the hand</p> <ul style="list-style-type: none"> - Right to select drills for dissection 4 to Lassa - Prepare a ovat cavities for 4 classes

<p><i>The tasks of the teacher:</i></p> <ul style="list-style-type: none"> - -Form the main provisions of cavity preparation classes I and V -To give a classification of cavities on Black -Teach students dissection Class I - To provide knowledge about the use of different types of elections for dissection 	<p><i>Learning outcomes:</i></p> <p>students</p> <ul style="list-style-type: none"> Ras with kazhut about public views on caries. will learn classification of cavities on Black formulate the basic requirements for the implementation of each stage of preparation
<i>Training Methods</i>	The lecture, brainstorming, story, video enu, practical training, work with the book, dialogue, learning games, pinbord. organizer.
<i>Forms of learning</i>	Group work ("Learning Together", "Work with <i>me-ideas</i> "), single
<i>Training Aids</i>	A OSKA-stand, f lipchart in ideofilmy, writing board, m dressed, models, Mr. Rafik, charts, chart notes, checklist, texts.
<i>Learning Environment</i>	Especially technologically equipped rooms.
<i>Monitoring assessment</i>	Recitation: rapid test, writing-topic test

Classification of cavities. Ing drugs cavities 4 and class.

Flow chart of lesson

Phases and time occupation (135 min)	Activity	
	Teacher	students
1 - part .45 Dakiki 5 min 10 minutes 2 0 min 10 minutes	<p>1.1. Checking notebooks and visited schaemosti</p> <p>1.2 explained to the class topic and expected results. Familiarize Zanathy plan.</p> <p>1. 3. Tell keywords, references to independent work (Section № .8)</p> <p>1.5. To introduce the cr ITER assessment during class (section number 6)</p> <p>change</p>	<p>Listen, write.</p> <p>Determine questions,</p> <p>Are reviewing wi</p> <p>evaluation criteria</p>

<p>2 - stage. 45 min</p> <p>10 minutes</p> <p>10 minutes</p> <p>15min</p> <p>10 minutes</p> <p>10 min</p>	<p>2.1. Quick Test / faq / knowledge strengthens brain Curtains</p> <p>2.2. On yasnyaet s plan and structure the practice session ("web" work and play) (section number 3)</p> <p>2.4. Dividing T students into groups and work rules are explained klassterom (section number 4)</p> <p>2.6. Post a stud ents visual aids for the best of its Appropriation (tests and case studies, models, products, computer programs, phantoms) to give idea how to Use them (section number 4)</p> <p>2.7. change</p>	<p>Answer, write.</p> <p>Work in groups,</p> <p>Groups perform</p> <p>Groups perform are</p>
<p>3 - phase. 45 min</p> <p>20 minutes</p> <p>5 min</p> <p>10 minutes</p> <p>10 minutes</p>	<p>3.1. Perform skills (section number 5)</p> <p>3.3. Summing up the lessons, the analysis of the work done and the students' attention is drawn to the fact that n Rigaudeau them in future work</p> <p>3.5. Assess the work of groups, Analysis provedeniya degree studies. Analysis of the checklist (section number 7)</p> <p>3.6. Give the job to Unauthorized noy work and op mined criterion of evaluation.</p>	<p>Perform practical</p> <p>Self-evaluate themselves and other.</p> <p>Ask questions w job</p>

4. Motivation

Knowledge of presentation and principles of dissection solid stomach tooth on Class 4, the classification of cavities by Black, drills, their species, the basic functions and their use is essential in the treatment of diseases of the teeth. Need to make the right choice for hog dissection, painless to all manipulations in the mouth. The resulting volume of theoretical

knowledge and proven manual skills in the following will help future specialist successfully apply them in practice.

5. Interdisciplinary communication and Intra

The teaching of this subject is based on the knowledge of the students basics of anatomy, physiology, Premet "Stomatolgicheskoe equipment and materials." Acquired during the course knowledge will be used in the study of the phantom of the course, the faculty and hospital dentistry, as well as other clinical disciplines.

6.Soderzhanie Occupation Cavities of Class IV, according to Black's classification, are cavities that are localized at the contact on surfaces of incisors and canines with the defeat of the cutting edge and the angle of the crown.

Options for the formation of cavities of this definition lyayutsya state of the cutting edge and the labial and lingual walls. Dissection of the cavity Class IV consists of two stages - the main container processing and forms mation additional support pads that way exists fixing the seal and prevents it from shifting in the side tion direction. Sometimes, to clarify the relation bottom ka rioznoy Class IV cavity of a tooth with a cavity to the x technological research of the tooth.

The main handle a cavity as well as class III cavity. It is better to spend cavity preparation on the lingual surface as possible keeping the labial surface of the hard tissues.

Space for additional support site and its shape is determined by considering the vastness of the carious lesion and a standing cutting edge.

In cases where the preserved vestibular and lingual walls and defect angle is not great, with additional space zdayut by forming grooves parallel to the cutting edge, taking into account the topography of the tooth cavity.

When the cutting edge is plane, and the crown angle slightly destroyed, additional ploschadkamozhnet be formed as grooves in this plane, with the aid schyu thin fissure bur.

In cases where the cutting edge of the thin wall and the weight tibulyarnaya and lingual largely destroyed Seni, create additional space in the thickness of the lingual (palatal) wall, forming the ground at right angles to the axes novnoy cavity with vertical walls.

Additional area must cover at least one third lingual (palatal) surfaces and have a depth of 0.5 - 1 mm below the enamel-dentin border. Gingival wall of the additional Executive pad typically is a continuation-Neva prides main cavity wall and the wall located on the against it, is created

by a distance of 2.5 - 3 mm from the cutting edge. In disclosing the cavity are spherical or fissure bur, followed by replacement with a reverse taper to form the bottom and sides.

When using adhesive technology preparation defects IV class has certain peculiarities.

Processing cavity only removed

the affected tooth before the onset of visual and Institute strumentalno evaluated healthy dentin. Walls polo STI is given slegka.zakruglenny character. All faces re moves to the bottom of the cavity walls, the transition from one wall to another form without the expressed kinks.

In processing the enamel margins remove all overhanging, not rugged areas. Enamel mowed at an angle of 45 ° to the surface ABILITY tooth. To create an invisible eye of the transition from the enamel of the tooth to the seal on the labial surface of the tooth angle skashi tion of enamel must be increased. In the process of preparation of enamel should not be placed seals border in concentrations of occlusal forces.

In total reconstruction of the vestibular surface of the principle vinirovaniya, ie wall composition insulating material.

In conducting *vinirovaniya* should consider the following guides circumstances:

1. Optimal cosmetic effect is achieved by removing all altered, colored areas of solid tissue It tooth. If it is impossible to carry out the complete removal of a primary layer of opaque material is applied, the mask color spots.

2. The depth of the vestibular surface preparation for depends on the position of the tooth in the dentition, the degree of color change and the size of the carious defect.

3. When extending the tooth cutting edge treatment is needed and the palatal surface, with the creation of more extensive areas.

4. Vinirovanie contraindicated in patients with symptoms of parafunktsy and level bite.

At preparing the cavity Class IV may follow ing complications:

1. Perforation of the tooth cavity.

2. Break off the walls of the tooth.

3. Damage to the intact enamel on the labial side of the tooth.

4. Thermal injury of the pulp caused by overheating of the tissue at preparing it.

5. Endangering papilla.

6. Improper formation of enamel margins.

7. Incomplete removal of pigmented dentin, actuators dyaschee an incomplete cosmetic fillings.

As used in this lesson new educational technologies: hosting the game "Tour Gallery»

Hosting the game "Tour the gallery."

To carry out the game I needed.

1. The required number of questions.
2. Blank sheets of paper.
3. Multi-colored pens (3-4 colors)

Rules of the Game: All the students are divided into three equal groups, then each group draws a question within 5 minutes of its particular color pen write your answer, then the group clockwise exchange sheets with answers and complete, and correct or confirm the answer of the previous . Each sheet responses should thus be from 3 answer written in different handles. Students are evaluated by the degree of correctness of the answer, additions or corrections, and the degree of participation in the game, the maximum score corresponds to the analytical bounds ball training.

Questions:

1. Klassifikatsiya cavities on Black
2. What is nekroktomiya?
3. How boron is being expanding cavity?
4. Why carious lesions is a form of "inverted cup"?

6.1 The analytical part

Case Studies

1. Kariozny defect is located in the pit blind upper lateral incisor. Which class of defects it should be classified?
2. Karioznaya cavity is localized in the cervical region 36. Which class of carious defects it should be classified?
3. In the fissures 36 carious lesions of medium depth. What form it will have after the preparation?
4. The buccal surface 27 is located below the equator crown cavities. Select the option of forming a cavity.

5. In the cervical region 15 has a cavity of decay, extending under the gum. Giperetrofirovanna gums, comes in a cavity, bleeding when touched. Enter the technique of forming a cavity in this case.

6. U singly located 35 circular tooth decay, hit all the cervical area. Choose the option of forming cavity. Explain your answer.

7. Patient came to the dental clinic with complaints of pain in the tooth by chemical irritants. Doctor on examination discovered a cavity in the cervical region on the buccal surface of the tooth 27.

Job.

1. Operdelite class of cavities by Black 27 tooth.

2. What are the main stages of tooth decay lechniya various classes.

3. Describe stage endcap cavity.

4. Perechislite materials, characterized by mechanical strength and vyvsokimi aesthetic qualities.

5. Ukazhite criteria for assessing the quality of finishing of composite fillings.

Answers.

1. This cavity belongs to class 5.

2. etap caries treatment: pain relief, preparirovanie Cavities and choice of filling material, the isolation of the tooth with saliva, antiseptic, drying the cavity, the imposition of an insulating gasket or adhesive systems, constantly filling material, trim seals, correction of occlusion.

3. Finish the edges of the cavity is the final stage of preparation. He is smoothing the edges of the cavity, removing burrs, roughness of enamel, finishing and polishing. This manipulation produced a carborundum stone, finishing a 16 - or 32-sided carbide bur, fine diamond head at low speed with a mandatory air-water cooling.

Such materials include 4.K hybrid composites.

5. Okonchatelnaya finishing fillings made of composite materials can be carried out immediately after the setting and hardening, but lutshe a day. The polished surface should have a shine after drying air "dry brilliance" from pores, the probe should slide without delays in various parts of the surface of the seal shall not be detected by a transition line "enamel-composite" dental floss should be entered with force into the interdental space and without delay slide on the contact surface, it should not be torn and stuck.

Manual Skill

2. Preparirovanie cavities 4 class on phantoms.

Objective: Learn how to dissect cavities Class 4 Black.

Indications: Dissect cavities Class 4 Black.

Fully furnished: phantoms drill, dental burs, dental tools for sealing.

Performs step by step:

№	Steps manualnogo skills (milestones)	Failed to comply with Stage	Partially fulfilled the stage	Follow all steps
1.	Correctly identify the affiliation to the cavity lists a class.	0	9	18
2.	Choose the right drills for each stage of preparation.	0	8	16
3.	Whether close to the gum cavity, make electrocoagulation gums.	0	9	18
4.	A cavity formed in the shape of an oval or kidney-shaped.	0	8	16
5.	The bottom of the cavity must be convex (due to the proximity of the pulp).	0	9	18
6.	On the walls of the cavity to form a retention items with the back tapered or rotate boron.	0	7	14

7.Vidy control used to assess students' knowledge:

- Oral answer
- Active participation in the discussions

Results of written responses

- The solution of test problems

8. The evaluation criteria of the current control

№	Progress in%	Evaluation	The level of knowledge of the student
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1	96-100%	Fine "5"	<p>Full correct answer to the questions on the classification of dental equipment and filling materials, composition, properties and application of sealers structure of the main parts of the dental equipment, their application, prepariovaniya filling various cavities elements endodontics safety when working in the dental equipment. Sums up the results and make decisions, creative thinking, self-analyzes. Case studies and tests resolves correctly, with a creative approach, with full justification for the answer.</p> <p>Actively and creatively involved in interactive games, right to make informed decisions and summarizes and analyzes.</p> <p>Manual'nye steps performs well, knowing the sequence of steps.</p>
2	91-95%	Fine "5"	<p>Full correct answer to the questions on the classification of dental equipment and filling materials, composition, properties and application of sealers structure of the main parts of the dental equipment, their application, preparation of various filling cavities elements endodontics safety when working in the dental equipment. Sums up the results and make decisions, creative thinking, self-analyzes. Case studies and tests resolves correctly, with a creative approach, with full justification for the answer.</p> <p>Actively and creatively involved in interactive games, right to make informed decisions and summarizes and analyzes.</p> <p>Manual'nye performs steps, knowing the sequence of steps.</p>
3	86 - 90%	Fine "5"	<p>Full correct answer to the questions on the classification of dental equipment and filling</p>

			<p>materials, composition, properties and application of sealers structure of the main parts of the dental equipment, their application, elements of Endodontics, preparation and filling safety when working in the dental equipment. Sums up the results and make decisions, creative thinking, self-analyzes but there are 1-2 errors in the response. Own analyzes. Inaccuracies in solving situational problems, but with the right approach.</p> <p>Actively participate in interactive games, make the right decisions.</p> <p>Manual'nye performs steps, knowing the sequence of steps but there are 2-3 grammatical errors.</p>
4	81-85%	Good "4"	<p>Full correct answer to the questions on the classification of dental equipment and filling materials, composition, properties and application of sealers structure of the main parts of the dental equipment, their application, preparation and filling various cavities elements endodontics safety when working in the dental equipment. Sums up the results and make decisions, creative thinking, self-analyzes, but there is a 2-3, inaccuracies, errors. Applies in practice with the matter, said confidently, has fine views. Situational problems solved correctly, but the rationale for not fully answer.</p> <p>Actively participate in interactive games, take the right decision.</p> <p>Manual'nye steps performs confidently, knowing the sequence of steps</p>
5	76-80%	Good "4"	<p>Correct but incomplete coverage of the issue. The student knows the dental equipment and filling materials, composition, properties and application</p>

			<p>of sealers structure of the main pieces of dental equipment, their application, preparation and filling various cavities, endodontics elements, but not fully versed in the mechanism of action and the development of side effects. With the matter, said confidently, has fine views. Actively participate in interactive games. On case studies and tests gives partial solutions.</p> <p>Manual with step does not perform confidently, knowing the sequence of steps</p>
6	71-75%	Good "4"	<p>Correct but incomplete coverage of the issue. The student knows the principles of classification of different preparation and filling of cavities, but does not provide complete lists n the use of filling materials, their side effects, the basic properties that are not fully versed in endodontics. With the matter, said confidently, has fine views. Situational problems and tests give partial solutions.</p> <p>In the conduct of manual skill is confusing sequence of steps.</p>
7	66-70%	Satisfactory nary "3"	<p>The correct answer half of the questions. The student knows the classification is not complete lists the principles of dissection, indications pr first name stomatologicheskog of dental equipment and materials, eleienty endodontics, basic properties, but poorly versed in the dissection, confuses the names of filling materialov. Ponimaet heart of the matter, said confidently, is the exact representation only Topics on certain issues. Situational problems solved correctly, but there is no justification response.</p> <p>Manual skill carries with difficulty.</p>
8	61-65%	Satisfactory nary	<p>The correct answer half of the questions. The student knows the classification of Black's, not full</p>

		"3"	<p>lists the principles of dissection and sealing, the basic properties of the filling materials, but poorly versed in the choice of filling material, confuses the titles aniyah filling materials, confuses the work of root kanalahz Tells uncertainly is accurate representations only on specific issues threads . Makes mistakes in solving situational and test tasks.</p> <p>The student spends 2-3 steps of manual skills</p>
9	55-60%	Satisfactory nary "3"	<p>Reply with errors on half of the questions. The student makes an error in the classification of Black's, indications of dental equipment and dental materials, fixed with voystvah, in the principles of dissection and sealing. Tells uncertainly has partial views on the topic. Case studies, tests and solved correctly.</p> <p>A student holds a 1-2 pitch from manual skills.</p>
10	50-54%	Satisfactory nary "3"	<p>The correct answer to the third set of questions. The student knows Black's classification, indications for use, dental equipment and filling materials, composition, endodontic treatment, properties and application of sealing materials, building major parts dental equipment, their application Case Studies and tests solved correctly if the wrong approach.</p> <p>Manual skills are not fully executed</p>
11	46-49%	Neudovlet- voritelno "2"	<p>The correct answer to the fourth set of questions. The student knows Black's classification, indications for use, dental equipment and filling materials, composition, properties and application of filling materials, principles of preparation and filling of cavities of different classes, the structure of the main parts of dental equipment, their application. Case studies, tests and solved correctly</p>

			if the wrong approach. Manual skill is executed.
12	41-45%	Neudovlet- voritelno "2"	Lighting fifth of the questions correctly. The student knows Black's classification, indications for dental equipment and filling materials, composition, properties and application of filling materials, the principles of filling and sealing various cavities, the structure of the main parts of dental equipment, their application Do not know the concept of conducting manual steps. Manual skill is executed.
13	36-40%	Neudovlet- voritelno "2"	Lighting tenth of the issues with the incorrect approach. The student does not know the classification, indications for use, dental equipment and filling materials, composition, properties and application of sealing materials, building major parts dental equipment, their application . Do not know the concept of conducting manual steps. Manual skill is executed
14	31-35%	Neudovlet- voritelno "2"	The questions do not give answers. Manual skill does not know and does not perform.

9. Chronological map classes

№	Stages classes	Forms classes	Time in min.	
			180	225
1	The opening word of the teacher (justification themes)		5	10
2	The discussion on the practical classes, the use of new educational technologies (small group discussions, case studies, "snowball method",	The survey, an explanation	50	50

	round table, etc.), as well as checking the source of students' knowledge, the use of visual aids (slides, audio and video tapes, models, phantoms, ECG, X-ray, etc.)			
3	Summing up the discussion		10	15
4	Giving students a task to perform the practical part of training. Dacha explanations and notes for the task. Self Supervision.		25	30
5	The assimilation of the practical skills of students by teachers (Curation thematic patient)	Medical history, business games clinical case studies	30	40
6	Analysis of the results of laboratory and instrumental investigations thematic patient, differential diagnosis, treatment plan and recovery, prescribing medications, etc.	work with clinical laboratory instruments	25	30
7	Discussion of the extent to which target classes on the basis of the developed theoretical knowledge and the practical results of the student's work, and in view of this assessment of the group.	Recitation, quiz, debate, discussion of the results of practical work	25	30
8	The conclusion of this lesson instructor. Assessment of the students on 100 point system and its announcement. Dacha assignments to students at the next class (set of questions)	Information, questions for self-study.	10	20

10. Key questions on the topic:

Control questions:

1. Klassifikatsiya cavities by Black.

2. Perechislite elements cavity.

3. Requirements applicable to the formation of cavities.

4. Specify tools used during various stages of preparation of cavities.

5. Osobennosti preparation of cavities I and V classes.
6. What cavities are cavities I and V classes on Black.
7. How should form a cavity of class I, if the chewing surface of the tooth has two closely spaced cavities?
8. What cavity shape is preferred for Class V?
9. Like there are ways to eliminate ingrown in Class V cavities gum?
10. How preparation methods are used to improve fixation, filling in the cavities of class V?

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Model of educational technology:

Employment №10

Theme: Amalgams. The indications to application. A technique of preparation and sealing of cavities of various classes.

Duration of employment:135 mines	<i>Quantity of students:8-10</i>
<i>Type and form of employment:</i>	Practical employment
<i>Structure of employment:</i>	<ol style="list-style-type: none"> 1.Introduction 2. Theoretical part 3.Analytical part: <ul style="list-style-type: none"> - Cluster and organizer -Test and situational task 4.Practical part
Purpose of employment:	<ul style="list-style-type: none"> - To formulate complete system of knowledge about materials, used for constant sealing - To acquire the indications and contra-indications for using cements - To train the students to technologies of getting fixed, entering in a cavity,

	<p>modeling of cements.</p> <ul style="list-style-type: none"> - To ensure help to the students in development of a technique of restoration of contact item.
The student should know:	<ul style="list-style-type: none"> - Classification of filling materials, - The names of filling materials on the basis of cements - Positive and negative properties of cements - Indication and contra-indication to application of cements
The student should be able:	<ul style="list-style-type: none"> - Technology of getting fixed of various kinds of cements - Technology of application of cements in a cavity - Technology of modeling of cement seal - To master a technique of restoration of contact item.
<p><i>Tasks of teacher:</i></p> <ul style="list-style-type: none"> - To formulate complete system of knowledge about materials, applied to constant sealing - To acquire indications and contra-indications to using cements - To train students in technologies of getting mixed, entering in a cavity, modelling of cements. - To provide the help to students in development of a technique of restoration of contact point. 	<p><i>Results of education:</i></p> <p>The student seizes technology of getting mixed various kinds of cements, applying in a cavity of cement weight.</p> <p>Technology of modelling of a cement seal.</p> <p>Seizes a technique of restoration of contact point</p>
<i>Methods of education:</i>	Lecture, cerebral assault, story, videomethod, practical employment, work with a book, dialogue, educational games,organizer.
<i>Forms of education:</i>	Work in groups («We study together », « Work together-change by ideas »), single
<i>Educationalmeans:</i>	Board-stand, video films, a writing board, models, the schedule, diagrammes, the scheme, notes, a control leaf, texts.
<i>Educationalconditions:</i>	The specially technologically equipped rooms.
<i>Monitoring</i>	Verbal poll : express test, written poll: test

Amalgams. The indications to application. A technique of preparation and sealing of cavities of various classes.

Tecnological card of employment:

Stages and duration of employment (135min)	Activities	
	Teacher	Students
1-stage.45 min	Check of writing-books and attendance	
5 min	1.2 To explain theme of employment and expected results. To acquaint the plan of employment.	Listen, write down.
10 min	1.3. To tell keywords, the list of references for independent work (section №.8)	Define, ask questions,
20 min	1.5. To acquaint with criteria of an estimation during employment (section №6)	Acquaintwithcriteriaestim ations
10 min	Break	
2-stage.45 min	2.1. The express train the test / a question-answer / knowledge becomes stronger brain storm	Answer, write.
10 min	2.2. Explain the plan and structure of practical employment ("web" working game) (section №3)	Work in groups,
10 min	2.3. Divide students into groups and explain work rules of clusters (section №4)	Groups carry out
15 min	2.4. To give to students visual aids for the best development (tests and situational problems, models, preparations, computer programs, phantoms) to give concepts how to use them (section №4)	
10 min	Break	
10 min		Groups carry out Represent

3-stage.45 min 20 min 5 min	3.1. To execute practical skills (section №5) 3.2. It is summed up a lesson, the analysis of the done work and attention of students addresses that is useful to them in the future work 3.3. Estimate work of groups, the degree analysis of employment. The analysis of control questions (section №7)	Carry out practical skills Estimate and each other. Ask questions written down tasks
10 min 10 min	3.4. Give the task for independent work and define criterion of their estimation.	

. Motivation

The knowledge of structure, properties, indications to application, ways of getting mixed of filling materials on the basis of cements has the important meaning in preventive maintenance and treatment of illnesses of teeth. It is necessary to make a correct choice of tools for survey and sealing, to choose necessary filling material and to lead in the further treatment. Received volume of theoretical knowledge and fulfilled manual skills in subsequent will help with success apply them in practice in future.

5. Interdisciplinary and inter-subject bindings:

The training of the given theme is based on knowledge of students bases of anatomy, physiology. The knowledge, received during employment will be used at studying of a phantom rate, faculty and hospital therapeutic dentistry, and also other clinical disciplines.

6.0. Theoretical part

6.1. Contents of employment:

Allocate the following groups of cements: zinc - phosphate (phosphate -cement, visphat -cement, unifas), bactericide (phosphate -cement with silver, dyoxybismuth), zinc – oxydeugenol cements (kariosan), silicate (silicyn, silicyn -2, alumodent), silicate- phosphate (silidont, lactodont, infantyd), till cements. Zinc - phosphate cements are let out a powder and liquid in a complete set. Components of a powder: 75-90 % oxyde of zinc (ensuring the adhesion), with addition of oxyde of silicon (giving transparency, shine), oxide of magnium (increase of plasticity and mechanical durability), oxide of calcium, oxyde of aluminium (increase of durability and hardness). A liquid is water solution of an orthophosphoric acid.

Phosphate cement.

The powder of yellow or light yellow colour, consists on 90 % from oxyde of zinc, 6 % oxyde of magnium, 4 % oxyde of calcium. Liquid - 35 % water solution of orthophosphoric acid. By addition to phosphates: zinc, aluminium, magnium for decrease of speed of interaction of a powder and liquid.

Technique of getting mixed:

On a smooth surface flow down separately put a powder and liquid in the ratio 4:1. A powder divide approximately into 4 parts, add consistently to a liquid and carefully pound. Correctly involved weight is considered, if it does not last for spatula at its separation, and breaks, forming denties till 1 mm. If weight has turned out rich, to add a liquid it is impossible, it is necessary to prepare it anew. Maximal adhesive period of filling test is 4-8 minutes.

Positive properties: good adhesion, factor of thermal expansion is close to factor of thermal expansion of fabrics of a tooth, does not irritate the pulpe, is impenetrable for acids and monomers of a constant seal, has low heat conduction, radiocontrast.

Negative properties: resolves in oral liquid, the low mechanical durability, has no antiinflammatory and antiseptic action, has no aesthetic qualities.

The indications to application: is used as isolated lining under a constant seal; for a constant seal under artificial crown or for sealing dairy teeth; sealing of root channels under the indications; fixing of orthopedic designs.

Unifas. The unified phosphate-cement. At the expense of a matrix on a basis molibdate of ammonium has good adhesion both to metal, and to fabrics of a tooth, more strong and chemically of racks.

Visphat-cement (bismuth-cement). The powder has the same structure, as phosphate -cement, but with addition 3 % oxide of bismuth. 3 shades are let out: light yellow, golden-yellow and dark yellow. A liquid - 37 % a water solution of orthophosphoric acid. Has good adhesion, hardens, more strong andradiocontrast, less we shall dissolve, has bactericide and bacteristatic properties, however is capable to change colour of firm fabrics of a tooth. Maximal adhesive period of filling test is 3-3,5 minutes.

The technique of getting mixed is similar to this of phosphate-cement.

The indications to application: is used as isolated lining under a constant seal; for a constant seal under artificial crown or for sealing dairy teeth; fixing of orthopedic designs.

Bactericide. Phosphate -cement with silver, Argyl, Unicem, Phoscem - phosphate-cement with addition of silver. Has expressed bactericide properties. A technique of preparation and application are similar to phosphate -cement, but it is impossible to use as a lining under a seal on teeth of frontal group, as the silver paints fabrics of a tooth in grey colour.

Dyoxybismuth with addition of dyoxydine. The cement also has bactericide properties, mechanically strong, low soluble, does not paint tooth tissues.

Silicate. Silicyn, Silicyn -2, Belacyn. Are let out in a complete set a powder - liquid. Components of a powder - oxyde of silicon (29-47 %), oxyde of aluminium (15-35 %), calcium (up to 14 %), fluorides (up to 15 %), insignificant quantity of salts of magnium, iron, phosphorus. 7 colourings are let out.

Positive properties: on colour is close to enamel, fluorides give anticavity properties, reduce solubility of enamel, reduce an opportunity of occurrence of secondary caries.

Negative properties: is toxic, therefore is applied on alive teeth only with isolated lining, weak adhesion, small mechanical durability (fragility and fragility), rather high solubility in a cavity of a mouth.

The technique of getting mixed: On a smooth surface flow down put 1 gr of a powder and 5-7 drops of a liquid. A powder gradually add to a liquid, get mixed up plastic spatula, as metal changes colour of a seal.

The indications to application: sealing of frontal group of teeth at presence of cavities 3, 4, 5 classes by Black.

Silicate- phosphate is silicate cements modified by zinc - phosphate cements.

Silidont, Beladont. The powder a liquid is let out in a complete set. A powder - 80 % of a powder Silicyn and 20 % of phosphate -cement. A liquid is a solution of an orthophosphoric acid.

Positive properties: good adhesion, mechanical durability and the chemical stability is higher, than at Silicyn.

Negative properties: is toxic, is not aesthetic (white colour, is opaque), there is not enough strong and racks in comparison with modern filling materials.

The technique of getting mixed is similar to this of Silicyn.

The indications to application: sealing of chewing group of teeth, 1, 2, 5 classes by Black.

Glassionomer cements.

Glassionomer cement is differentiated from typical dental cements by components - powder and liquid hardening owing to the acid-basic reaction.

In usual glassionomer cements are used water solutions of polycarbonic acids, for example, polyacryl acids and their copolymers with itaconic or maleinic acids. Carboxyl group of a polymeric acid cooperates with ions of calcium and the strong polymeric matrix is formed. The same acid provides chemical adhesion with calcium of enamel and dentin.

Owing to drying by freezing of an acid it is possible to add directly to a powder, raising accuracy dosing of liquid and powder. The liquid component of waterproof glassionomer cements consists of distillate water or wine acid. The powder component consists of calcium-aluminium-silicate glass with inclusion of crystallized, sated by drops of fluoride calcium. Fluorine, after drawing a seal, during long time is allocated in a cavity of a mouth, rendering organic anticavity protection in regional area of a seal.

The reaction of linkage of both main components proceeds in 3 stages.

The acid liberates from silicate glass ions of calcium and aluminium. As the ions of calcium are liberated faster, they by first enter in reaction with an acid. After wetting of calcium bridges of polyacryl acid is formed carboxylic gel, sensitive to moisture and drying. At initial hit of a moisture the time of linkage is increased, decrease durability and hardness, are observed loss of a transparency, porosity and roughness of surfaces increased erosion of a seal. Owing to drying glassionomer cement becomes opaque, burst and not completely bonds.

By method of sintering it is possible fusioning of metal in particles of a glass. Used with this purpose in most cases silver serves the shock-absorber and raises durability on a bend and stability to abrasion.

To the third group the cements light and double hardening belong glassionomer, which liquid components, except for an acid, contain, for example, hydrophylmonomeasure, Bis-GMA and photoaccelerators. Owing to light copolymerization of methacrylate with groups of polyacryl acid are formed covalent and ionic bonds promoting hardening of a material.

The technique of getting mixed: Before a fence a powder carefully mix. Get mixed up in a strict parity a powder - liquid specified by the firm - manufacturer. After a fence of a powder it is necessary carefully and densely to close a cover of a bottle, as a powder is hydroscopic.

Positive properties: chemical adhesion, not requiring acid etch; biological compatibility with tooth tissues; absence of toxic influence on the pulpe; gradually selected fluorides in tooth tissues and raises stability of a tooth to demineralisation (anticavity effect); low polymerizate shrinkage; factor of thermal expansion is close to factor of thermal expansion of fabrics of a tooth; radiocontrast.

Negative properties:unsufficient mechanical durability; satisfactory aesthetic qualities.

The indications to application: V of classes, sealing of cavities of dairy teeth of all classes; as isolated linings; the creation of a basis of restoration (basic part of a cavity is filled byionomer cement, and superficial layer - composite material); restoration of the crown of a tooth under artificial crown, inlay; restoration of stump of the crown before removal cast; fixing of orthopedic designs; sealing of roots.

Criteria of estimation of theoretical part:

Max.point 20-17,2point	17-14,2 point	14 – 11 point	10,8 -7,4point	7,2point
Excellent	Good	Medium	Unsatisfactorily	Bad
100-86%	85-71%	70-55%	54-37%	36% and lower

Analytical part:

Situational tasks:

1. At sealing 33 the lining from phosphate-cement containing silver up to enamel-dentin border is imposed. Sealing a cavity picked up on colour by silicate cement is carried out. Whether treatment correctly is carried out? Prove the answer.
2. Sealing a cavity 26 teeth is carried out. After medical processing lining from phosphate-cement on bottom and wall up to edges of a cavity is imposed. A seal is by silidont. Whether treatment correctly is carried out? Prove the answer.
3. The sealing 35 teeth will be carried out. The seal prepares from silidont -cement. At getting mixed of filling dough has appeared rich. The drop of a liquid is added, then filling weight has got the necessary consistence. The tooth is sealed up. Find mistakes in a technique of preparation.

4. On a chewing surface 16 was prepared the cavity, is carried out medical processing. Sealing by phosphate-cement containing silver. Whether there are mistakes? Prove the answer.

Criteria of estimation of analytical part:

Max.point.-15 excellent	Good	Medium	Unsatisfactorily	Bad
15-12,9	12,75-10,65	10,5-8,25	8,1-5,55	5,4 and lower
100% - 86%	85% -71%	70-55%	54% -37%	36% and lower

Tests:

1. To constant filling materials does not concern:

- A. Water dentine*
- B. Silicyn
- C. Phosphate-cement*
- D. Artificial dentine
- E. Amalgams

2. Powder of bismuth-cement contains:

- A. Oxyde of bismuth*
- B. Oxyde of magnium*
- C. Oxyde of silicium
- D. Kaolin
- E. All answers are true

3.Silicate seals concern:

- A. Silicyn, Fritex*
- B. Silidont, Beladont
- C. Evicrol
- D. Belacin*
- E. Dentin-paste

4.It is typical for silicate fillings:

- A. cosmetic properties*
- B. don't irritate the pulp
- C. heat conduction

- D. don't contain fluorides
- E. fragility*

5. Silicate seals are intended for sealing:

- A. incisors, canines*
- B. premolars, molars
- C. incisors, molars
- D. canines, molars
- E. premolars*

6. What is not included into group constant filling materials?

- A. Dentine*
- B. Evicrol
- C. Calcimol*
- D. Charisma
- E. Silidont

7. Positive properties of silicate-phosphate cements:

- A. mechanical durability*
- B. adhesion*
- C. simplicity in using*
- D. solubility in oral cavity
- E. toxic effect on the pulp

Criteria of estimation of tests:

Max. point. -15 excellent	Good	Medium	Unsatisfactory	Bad
15-12,9	12,75-10,65	10,5-8,25	8,1-5,55	5,4 and lower
100% - 86%	85% -71%	70-55%	54% -37%	36% and lower

IV. Practical part:

Manual skill:

Medical processing of a cavity on phantoms.

The aim: To learn how to carry out medical processing of a cavity.

The indications: To carry out medical processing of a cavity.

Equipment: phantoms, dental drilling machine, dental bur, stomatological tools for sealing, antiseptic solutions (3 % перекись of hydrogen, 1 % p-p chloramine and etc.), wadded platens.

№	Steps of manual skills:	Realization of all steps:
1.	Constant seal form by means of a diamond pine forest.	10
2.	By means of a transfer paper define excessive places of a seal.	10
3.	Surpluses of a seal delete by a stone or a diamond pine forest. The seal should not limit movement of jaws and not cause inconveniences in a mouth.	10
4.	The constant seal is polished with polishing pastes by means of brushes or rubber heads.	10

7.Types of control, using for estimation of student's knowledge:

- verbal answer
- active participation in discussions
- results of written answers
- solutions of test tasks

8. Criteria of estimation of current control:

№	Mark	Excellent	Good	Satisfactorily	Unsatisfactorily	Bad
	Adoptionin %	100%-86%	85%-71%	70-55%	54%-37%	36% и ниже
1	Theoretical part	20-17,2 point	17-14,2 point	14 – 11 point	10,8 -7,4 point	7,2 point
2	Analytical part: Organizer	15-12,9	12,75-10,65	10,5-8,25	8,1-5,55	5,4
3	Test	15-12,9	12,75-10,65	10,5-8,25	8,1-5,55	5,4
4	Practical part	40-34,4- point	34-28,4 point	28-22point	21,6-14,8 point	14,4 point
5	Control questions	10-8,6	8,5-7,1	7,0-5,5	5,4-3,7	3,6 point

Chronological card of practical employment:

№	Stage of employment	Type of employment	Duration-min.	Intermission
1.	Cheking	Exercise book, power of participation of students. Theme, aim and tasks Plan, list of literature Introduction with criteras of marks	5min. 5 min 5 min 5 min	
2.	Theoretical part	Discussion, cerebral assault Business game “web”	15 min 15 min	5 min
3.	Analytical part	Tests and solving of situational tasks , clusters, organizers. Visual aids	20 min 15 min	
4.	Practical part	Realization of practical skills and conclusion of made work	20 min 15 мин	10 min
5	Total:	Analysis of theoretical tasks, marks, homework and independent work	10 min 5 min	

№	Progress in %	Estimation	Level of knowledge of the student
1	96-100%	Excellent "5"	<p>The complete correct answer to questions on classification of the dentist equipment and of filling materials, structure, properties and application of filling materials, a structure of the basic parts of the dentist equipment, their application, safety precautions at job on the dentist equipment. Summarizes and accepts the decisions, creatively thinks, independently analyzes. Situational tasks and tests decides correctly, with the creative approach, with a complete substantiation of the answer.</p> <p>Actively, creatively participates in interactive games, correctly accepts the proved decisions and summarizes, analyzes.</p> <p>Manual steps carries out precisely, knowing a sequence of steps.</p>
2	91-95%	Excellent "5"	<p>Complete correct answer to questions on classification of the dentist equipment and filling materials, structure, properties and application of filling materials, a structure of the basic parts of the dentist equipment, their application, safety precautions at job on the dentist equipment. Summarizes and accepts the decisions, creatively thinks, independently analyzes. Situational tasks and tests decides correctly, with the creative approach, with a complete substantiation of the answer.</p> <p>Actively, creatively participates in interactive games, correctly accepts the proved decisions and summarizes, analyzes.</p> <p>Manual steps carries out, knowing a sequence of steps.</p>
3	86- 90%	Excellent "5"	<p>Complete correct answer to questions on classification of the dentist equipment and of filling materials, structure, properties and application of filling materials, a structure of the basic parts of the dentist equipment, their application, safety precautions at job on the dentist equipment. Summarizes and accepts the decisions, creatively thinks, independently analyzes but there are 1-2 discrepancies in the answer. Independently analyzes. Discrepancies at the decision of situational tasks, but at the correct approach.</p> <p>Actively participates in interactive games, accepts the</p>

			<p>correct decisions.</p> <p>Manual steps carries out, knowing a sequence of steps but there are 2-3 grammatic mistakes.</p>
4	81-85%	Good “4”	<p>The full right answer on questions on classification of the dentist equipment and filling materials, structure, properties and application filling materials a structure of the basic parts of the dentist equipment, their application, the safety precautions at work on the dentist equipment. Sums up and makes decisions, creatively thinks, independently analyzes, but there are 2-3 discrepancies, errors. Puts into practice, understands a question essence, tells confidently, has exact representations. Situational tasks are solved correctly, but an answer substantiation insufficiently full.</p> <p>Actively participates in interactive games, correctly makes decisions.</p> <p>Manual steps carries out confidently, knowing sequence of steps correct, but incomplete illumination of a question.</p>
5	76-80%	Good “4”	<p>Correct, but incomplete illumination of a question. The student knows of the dentist equipment and of filling materials, structure, properties and application of filling materials a structure of the basic parts of the dentist equipment, their application, but not completely understands the mechanism of action and development of by-effects. Understands essence of a question, tells confidently, has exact representations. Actively participates in interactive games. On situational tasks and tests gives the incomplete decisions.</p> <p>Manual steps carries out not confidently, knowing a sequence of steps</p>
6	71-75%	Good “4”	<p>Correct, but incomplete illumination of a question. The student knows classifications, but not full lists the indications to application of preparations, their by-effects, basic properties, not completely understands the mechanism of action and development of by-effects. Understands essence of a question, tells confidently, has exact representations. On situational tasks and tests gives the incomplete decisions.</p> <p>In realization of manual skill confuses a sequence of steps.</p>
7	66-70%	Satisfactory “3”	<p>Correct answer to half of put questions. The student knows classifications, not full lists the indications to application of the dentist equipment and of materials, basic properties, but badly understands the mechanism of</p>

			<p>action, is confused in the names of filling materials. Understands essence of a question, tells confidently, has exact representations only on separate questions of a theme. Situational tasks are decided correctly, but there is no substantiation of the answer.</p> <p>Manual skill spends hardly.</p>
8	61-65%	Satisfactory "3"	<p>Correct answer to half of put questions. The student knows classifications, not full lists the indications to application of the dentist equipment and of materials, basic properties, but badly understands the mechanism of action, is confused in the names of filling materials. Tells uncertainly, has exact representations only on separate questions of a theme. Supposes mistakes at the decision situational and test tasks.</p> <p>The student spends 2-3 steps of manual skills</p>
9	55-60%	Satisfactory "3"	<p>The answer with mistakes on half of put questions. The student makes mistakes in classification, indication to application of the dentist equipment and of materials, basic properties, in the mechanism of action, Tells uncertainly, has partial representations on a theme. Situational tasks and the tests are decided incorrectly.</p> <p>The student spends 1-2 steps of manual skills.</p>
10	50-54%	Satisfactory "3"	<p>Correct answer to 1/3 put questions. The student does not know classification, indications to application, of the dentist equipment and of filling materials, structure, properties and application of filling materials, structure of the basic parts of the dentist equipment, their application Situational tasks and the tests are decided incorrectly at the wrong approach.</p> <p>Manual skill is executed not full</p>
11	46-49%	Unsatisfactory "2"	<p>Correct answer to 1/4 put questions. The student does not know classification, indications to application, of the dentist equipment and of filling materials, structure, properties and application of filling materials, structure of the basic parts of the dentist equipment, their application. Situational tasks and the tests are decided incorrectly at the wrong approach.</p> <p>Manual skill is not executed.</p>
12	41-45%	Unsatisfactory "2"	<p>Illumination 1/5 put questions with mistakes. The student does not know classification, indications to application, of the dentist equipment and of filling materials, structure, properties and application of filling materials, structure of the basic parts of the dentist equipment, their application</p>

			Does not know concept about realization of manual step. Manual skill is not executed.
1 3	36-40%	Unsatisfactory “2”	<p>Illumination 1/10 parts of questions at the incorrect approach. The student does not know classification, indications to application, of the dentist equipment and filling materials, structure, properties and application of filling materials, structure of the basic parts of the dentist equipment, their application.</p> <p>Does not know concept about realization of manual step. Manual skill is not executed.</p>
1 4	31-35%	Unsatisfactory “2”	<p>Does not give the answers on questions.</p> <p>Does not know manual skill and does not carry out.</p>

Control questions:

1. Amalgams, structure, physical and chemical properties.
2. Positive and negative properties of amalgams.
3. Indications to applications for using amalgams.
4. Technique of preparation and sealing by amalgams.
5. Requirements to a room, where dental amalgam is used.
6. Amalgam on a basis of gallium, structure, physical and chemical properties.

The recommended literature:

Basic:

1. Borovsky E.V. "Therapeutic dentistry" m. of 1975.
2. Magid E.A., Muhin N.A. The atlas of phantom course and therapeutic dentistry M.: medicine, 1987
3. Borovsky E.V. "Therapeutic dentistry". - M., 2003.
4. Borovsky E.V. "Therapeutic dentistry". - M., 1998.

Additional:

1. Petricas A.J. Operative and restorative dentistry. 1994r.-285c.
2. Chilikin V.. The newest technologies in the aesthetic dentistry.
3. Nikolaev A.I., Cepov L.M. Practical therapeutic dentistry - 2003.

Model of educational technology:

Employment №10**Theme: A technique of sealing cavities by phosphate-cement.**

Duration of employment: 135 mines	<i>Quantity of students:</i> 8-10
<i>Type and form of employment:</i>	Practical employment
<i>Structure of employment:</i>	1.Introduction 2. Theoretical part 3.Analytical part: - Cluster and organizer -Test and situational task 4.Practical part
Purpose of employment:	- To study structure and properties of various kinds of phosphate -cements - To study the indications and contra-indications to application of seals from phosphate -cements - To accustom features of preparing of cavities of various classes under phosphate -cement - To study tools for work with phosphate -cements - To master a technique of a finishing furnish of seals from cements
The student should know:	- Structure and properties - Indications and contra-indication for using of phosphate -cements - Feature of preparing of cavities under phosphate -cements - Tools used for sealing of phosphate -cements
The student should be able:	- To prepare a cavity under phosphate -cement - To get mixed up various kinds of phosphate -cements - To seal up cavities on phantoms by phosphate -cement - To carry out a finishing furnish phosphate - cement of seals
<i>Tasks of teacher:</i> - To train students in technologies of getting mixed, entering in a cavity, modelling of phosphate-cements. - To provide the help to students in development of a technique of restoration of contact point.	<i>Results of education:</i> The student seizes technology of getting mixed phosphate-cements, applying in a cavity of cement weight. Technology of modelling of a cement seal. Seizes a technique of restoration of contact point
<i>Methods of education:</i>	Lecture, cerebral assault, story, videomethod, practical employment, work

	with a book, dialogue, educational games,organizer.
<i>Forms of education:</i>	Work in groups («We study together », « Work together-change by ideas »), single
<i>Educationalmeans:</i>	Board-stand, video films, a writing board, models, the schedule, diagrammes, the scheme, notes, a control leaf, texts.
<i>Educationalconditions:</i>	The specially technologically equipped rooms.
<i>Monitoring</i>	Verbal poll : express test, written poll: test

A technique of sealing cavities by phosphate-cement.

Tecnological card of employment:

Stages and duration of employment (135min)	Activities	
	Teacher	Students
1-stage.45 min	Check of writing-books and attendance	
5 min	1.2 To explain theme of employment and expected results. To acquaint the plan of employment.	Listen, write down.
10 min		
20 min	1.3. To tell keywords, the list of references for independent work (section №.8)	Define, ask questions,
10 min	1.5. To acquaint with criteria of an estimation during employment (section №6)	Acquaintwithcriteriaestim ations
	Break	
2-stage.45 min	2.1. The express train the test / a question-answer / knowledge becomes stronger brain storm	Answer, write.
10 min	2.2. Explain the plan and structure of practical employment ("web" working game) (section №3)	Work in groups,
10 min	2.3. Divide students into groups and explain work rules of clusters (section №4)	Groups carry out
15 min	2.4. To give to students visual aids for the best development (tests and situational problems, models, preparations, computer programs, phantoms) to give concepts how to use them (section №4)	
10 min	Break	Groups carry out

10 min		Represent
3-stage.45 min 20 min 5 min 10 min 10 min	3.1. To execute practical skills (section №5) 3.2. It is summed up a lesson, the analysis of the done work and attention of students addresses that is useful to them in the future work 3.3. Estimate work of groups, the degree analysis of employment. The analysis of control questions (section №7) 3.4. Give the task for independent work and define criterion of their estimation.	Carry out practical skills Estimate and each other. Ask questions written down tasks

4. Motivation

The knowledge of structure, properties, indications to application, ways of getting mixed of filling materials on the basis of cements has the important meaning in preventive maintenance and treatment of illnesses of teeth. It is necessary to make a correct choice of tools for survey and sealing, to choose necessary filling material and to lead in the further treatment. Received volume of theoretical knowledge and fulfilled manual skills in subsequent will help with success apply them in practice in future.

5. Interdisciplinary and inter-subject bindings:

The training of the given theme is based on knowledge of students bases of anatomy, physiology. The knowledge, received during employment will be used at studying of a phantom rate, faculty and hospital therapeutic dentistry, and also other clinical disciplines.

6.0. Theoretical part

6.1 Theoretical part

Phosphate cement.

The powder of yellow or light yellow colour, consists on 90 % from oxyde of zinc, 6 % oxyde of magnium, 4 % oxyde of calcium. Liquid - 35 % water solution of orthophosphoric acid. By addition to phosphates: zinc, aluminium, magnium for decrease of speed of interaction of a powder and liquid.

Technique of getting mixed:

On a smooth surface flown down separately put a powder and liquid in the ratio 4:1. A powder divide approximately into 4 parts, add consistently to a liquid and carefully pound. Correctly involved weight is considered, if it does not last for spatula at its separation, and breaks, forming denties till 1 mm. If weight

has turned out rich, to add a liquid it is impossible, it is necessary to prepare it anew. Maximal adhesive period of filling test is 4-8 minutes.

Positive properties: good adhesion, factor of thermal expansion is close to factor of thermal expansion of fabrics of a tooth, does not irritate the pulpe, is impenetrable for acids and monomers of a constant seal, has low heat conduction, radiocontrast.

Negative properties: resolves in oral liquid, the low mechanical durability, has no antiinflammatory and antiseptic action, has no aesthetic qualities.

The indications to application: is used as isolated lining under a constant seal; for a constant seal under artificial crown or for sealing dairy teeth; sealing of root channels under the indications; fixing of orthopedic designs.

Unifas. The unified phosphate-cement. At the expense of a matrix on a basis molybdate of ammonium has good adhesion both to metal, and to fabrics of a tooth, more strong and chemically of racks.

Visphat-cement (bismuth-cement). The powder has the same structure, as phosphate-cement, but with addition 3 % oxide of bismuth. 3 shades are let out: light yellow, golden-yellow and dark yellow. A liquid - 37 % a water solution of orthophosphoric acid. Has good adhesion, hardens, more strong and radiocontrast, less we shall dissolve, has bactericide and bacteristatic properties, however is capable to change colour of firm fabrics of a tooth. Maximal adhesive period of filling test is 3-3,5 minutes.

The technique of getting mixed is similar to this of phosphate-cement.

The indications to application: is used as isolated lining under a constant seal; for a constant seal under artificial crown or for sealing dairy teeth; fixing of orthopedic designs.

Bactericide. Phosphate-cement with silver, Argyl, Unicem, Phoscem - phosphate-cement with addition of silver. Has expressed bactericide properties. A technique of preparation and application are similar to phosphate-cement, but it is impossible to use as a lining under a seal on teeth of frontal group, as the silver paints fabrics of a tooth in grey colour.

Dyoxybismuth with addition of dyoxydine. The cement also has bactericide properties, mechanically strong, low soluble, does not paint tooth tissues.

New pedagogical technologies, used on the given employment: realization of game " Cat in a bag "

Technique of realization of business game " Cat in a bag "

For realization of game it is necessary to have:

Bag (white opaque)

Tooling for survey

Tooling for sealing

Criteria of estimation of theoretical part:

Max.point 20-17,2point	17-14,2 point	14 – 11 point	10,8 -7,4point	7,2point
Excellent	Good	Medium	Unsatisfactorily	Bad
100-86%	85-71%	70-55%	54-37%	36% and lower

Analytical part:

Situational tasks:

1. At sealing 33 the lining from phosphate-cement containing silver up to enamel-dentin border is imposed. Sealing a cavity picked up on colourbysilicatecement is carried out. Whether treatment correctly is carried out? Prove the answer.

2. Sealing a cavity 26 teeth is carried out. After medical processing lining from phosphate-cement on bottom and wall up to edges of a cavity is imposed. A seal is by silidont. Whether treatment correctly is carried out? Prove the answer.

3. The sealing 35 teeth will be carried out. The seal prepares from silidont-cement. At getting mixedoffillingdough has appeared rich. The drop of a liquid is added, thenfilling weight has got the necessary consistence. The tooth is sealed up. Find mistakes in a technique of preparation.

4. On a chewing surface 16 was preparedthe cavity, is carried out medical processing. Sealing by phosphate-cement containing silver. Whether there are mistakes? Prove the answer.

Criteria of estimation of analytical part:

Max.point.-15 excellent	Good	Medium	Unsatisfactorily	Bad
15-12,9	12,75-10,65	10,5-8,25	8,1-5,55	5,4 and lower
100% - 86%	85% -71%	70-55%	54% -37%	36% and lower

Criteria of estimation of tests:

Max.point.-15 excellent	Good	Medium	Unsatisfactorily	Bad
15-12,9	12,75-10,65	10,5-8,25	8,1-5,55	5,4 and lower
100% - 86%	85% -71%	70-55%	54% -37%	36% and lower

IV. Practical part:

Manual skill:

Medical processing of a cavity on phantoms.

The aim: To learn how to carry out medical processing of a cavity.

The indications: To carry out medical processing of a cavity.

Equipment: phantoms, dental drilling machine, dental bur, stomatological tools for sealing, antiseptic solutions (3 % перекись of hydrogen, 1 % p-p chloramine and etc.), wadded platens.

№	Steps of manual skills:	Realization of all steps:
1.	Constant seal form by means of a diamond pine forest.	10
2.	By means of a transfer paper define excessive places of a seal.	10
3.	Surpluses of a seal delete by a stone or a diamond pine forest. The seal should not limit movement of jaws and not cause inconveniences in a mouth.	10
4.	The constant seal is polished with polishing pastes by means of brushes or rubber heads.	10

7.Types of control, using for estimation of student's knowledge:

- verbal answer
- active participation in discussions

- results of written answers

- solutions of test tasks

8. Criteria of estimation of current control:

№	Mark	Excellent	Good	Satisfactorily	Unsatisfactorily	Bad
	Adoptionin %	100%-86%	85%-71%	70-55%	54%-37%	36% и ниже
1	Theoretical part	20-17,2 point	17-14,2 point	14 – 11 point	10,8 – 7,4 point	7,2 point
2	Analytical part: Organizer	15-12,9	12,75-10,65	10,5-8,25	8,1-5,55	5,4
3	Test	15-12,9	12,75-10,65	10,5-8,25	8,1-5,55	5,4
4	Practical part	40-34,4- point	34-28,4 point	28-22point	21,6-14,8 point	14,4 point
5	Control questions	10-8,6	8,5-7,1	7,0-5,5	5,4-3,7	3,6 point

Chronological card of practical employment:

№	Stage of employment	Type of employment	Duration-min.	Intermission
1.	Cheking	Exercise book, power of participation of students. Theme, aim and tasks Plan, list of literature Introduction with criteras of marks	5min. 5 min 5 min 5 min	
2.	Theoretical part	Discussion, cerebral assault Business game “web”	15 min 15 min	5 min
3.	Analytical part	Tests and solving of situational tasks , clusters, organizers. Visual aids	20 min 15 min	
4.	Practical part	Realization of practical skills and conclusion of made work	20 min 15 мин	10 min

5	Total:	Analysis of theoretical tasks, marks, homework and independent work	10 min 5 min	
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№	Progress in %	Estimation	Level of knowledge of the student
1	96-100%	Excellent "5"	<p>The complete correct answer to questions on classification of the dentist equipment and of filling materials, structure, properties and application of filling materials, a structure of the basic parts of the dentist equipment, their application, safety precautions at job on the dentist equipment. Summarizes and accepts the decisions, creatively thinks, independently analyzes. Situational tasks and tests decides correctly, with the creative approach, with a complete substantiation of the answer.</p> <p>Actively, creatively participates in interactive games, correctly accepts the proved decisions and summarizes, analyzes.</p> <p>Manual steps carries out precisely, knowing a sequence of steps.</p>
2	91-95%	Excellent "5"	<p>Complete correct answer to questions on classification of the dentist equipment and filling materials, structure, properties and application of filling materials, a structure of the basic parts of the dentist equipment, their application, safety precautions at job on the dentist equipment. Summarizes and accepts the decisions, creatively thinks, independently analyzes. Situational tasks and tests decides correctly, with the creative approach, with a complete substantiation of the answer.</p> <p>Actively, creatively participates in interactive games, correctly accepts the proved decisions and summarizes, analyzes.</p> <p>Manual steps carries out, knowing a sequence of steps.</p>
3	86- 90%	Excellent "5"	<p>Complete correct answer to questions on classification of the dentist equipment and of filling materials, structure, properties and application of filling materials, a structure of the basic parts of the dentist equipment, their</p>

			<p>application, safety precautions at job on the dentist equipment. Summarizes and accepts the decisions, creatively thinks, independently analyzes but there are 1-2 discrepancies in the answer. Independently analyzes. Discrepancies at the decision of situational tasks, but at the correct approach.</p> <p>Actively participates in interactive games, accepts the correct decisions.</p> <p>Manual steps carries out, knowing a sequence of steps but there are 2-3 grammatic mistakes.</p>
4	81-85%	Good “4”	<p>The full right answer on questions on classification of the dentist equipment and filling materials, structure, properties and application filling materials a structure of the basic parts of the dentist equipment, their application, the safety precautions at work on the dentist equipment. Sums up and makes decisions, creatively thinks, independently analyzes, but there are 2-3 discrepancies, errors. Puts into practice, understands a question essence, tells confidently, has exact representations. Situational tasks are solved correctly, but an answer substantiation insufficiently full.</p> <p>Actively participates in interactive games, correctly makes decisions.</p> <p>Manual steps carries out confidently, knowing sequence of steps correct, but incomplete illumination of a question.</p>
5	76-80%	Good “4”	<p>Correct, but incomplete illumination of a question. The student knows of the dentist equipment and of filling materials, structure, properties and application of filling materials a structure of the basic parts of the dentist equipment, their application, but not completely understands the mechanism of action and development of by-effects. Understands essence of a question, tells confidently, has exact representations. Actively participates in interactive games. On situational tasks and tests gives the incomplete decisions.</p> <p>Manual steps carries out not confidently, knowing a sequence of steps</p>
6	71-75%	Good “4”	<p>Correct, but incomplete illumination of a question. The student knows classifications, but not full lists the indications to application of preparations, their by-effects, basic properties, not completely understands the mechanism of action and development of by-effects. Understands essence of a question, tells confidently, has exact representations. On situational tasks and tests gives</p>

			<p>the incomplete decisions.</p> <p>In realization of manual skill confuses a sequence of steps.</p>
7	66-70%	Satisfactory “3”	<p>Correct answer to half of put questions. The student knows classifications, not full lists the indications to application of the dentist equipment and of materials, basic properties, but badly understands the mechanism of action, is confused in the names of filling materials. Understands essence of a question, tells confidently, has exact representations only on separate questions of a theme. Situational tasks are decided correctly, but there is no substantiation of the answer.</p> <p>Manual skill spends hardly.</p>
8	61-65%	Satisfactory “3”	<p>Correct answer to half of put questions. The student knows classifications, not full lists the indications to application of the dentist equipment and of materials, basic properties, but badly understands the mechanism of action, is confused in the names of filling materials. Tells uncertainly, has exact representations only on separate questions of a theme. Supposes mistakes at the decision situational and test tasks.</p> <p>The student spends 2-3 steps of manual skills</p>
9	55-60%	Satisfactory “3”	<p>The answer with mistakes on half of put questions. The student makes mistakes in classification, indication to application of the dentist equipment and of materials, basic properties, in the mechanism of action, Tells uncertainly, has partial representations on a theme. Situational tasks and the tests are decided incorrectly.</p> <p>The student spends 1-2 steps of manual skills.</p>
10	50-54%	Satisfactory “3”	<p>Correct answer to 1/3 put questions. The student does not know classification, indications to application, of the dentist equipment and of filling materials, structure, properties and application of filling materials, structure of the basic parts of the dentist equipment, their application. Situational tasks and the tests are decided incorrectly at the wrong approach.</p> <p>Manual skill is executed not full</p>
11	46-49%	Unsatisfactory “2”	<p>Correct answer to 1/4 put questions. The student does not know classification, indications to application, of the dentist equipment and of filling materials, structure, properties and application of filling materials, structure of the basic parts of the dentist equipment, their application. Situational tasks and the tests are decided incorrectly at</p>

			the wrong approach. Manual skill is not executed.
1 2	41-45%	Unsatisfactory “2”	Illumination 1/5 put questions with mistakes. The student does not know classification, indications to application, of the dentist equipment and of filling materials, structure, properties and application of filling materials, structure of the basic parts of the dentist equipment, their application Does not know concept about realization of manual step. Manual skill is not executed.
1 3	36-40%	Unsatisfactory “2”	Illumination 1/10 parts of questions at the incorrect approach. The student does not know classification, indications to application, of the dentist equipment and filling materials, structure, properties and application of filling materials, structure of the basic parts of the dentist equipment, their application. Does not know concept about realization of manual step. Manual skill is not executed.
1 4	31-35%	Unsatisfactory “2”	Does not give the answers on questions. Does not know manual skill and does not carry out.

Control questions:

1. Structure of stomatological cements.
2. Physical and chemical properties of cements.
3. Positive and negative properties of cements.
4. Indications to applications for using cements.
5. Technique of preparation and sealing by cements.

The recommended literature:

Basic:

- 1 BorovskyE.V." Therapeutic dentistry " m. of 1975.
2. Magid E.A., MuhinN.A. The atlas of phantom course and therapeuticdentistryM.: medicine, 1987
3. BorovskyE.V. " Therapeutic dentistry ". - M., 2003.
- 4 BorovskyE.V." Therapeutic dentistry ". - M., 1998.

Additional:

1. Petricas A.J. Operative and restorative dentistry. 1994г.-285с.
2. Chilikin V.. The newest technologies in the aesthetic dentistry.
3. Nikolaev A.I., Cepov L.M. Practical therapeutic dentistry - 2003.

Model of educational technology:

Employment №10

Theme: Amalgams. The indications to application. A technique of preparation and sealing of cavities of various classes.

Duration of employment: 90 minutes	<i>Quantity of students: 8-10</i>
<i>Type and form of employment:</i>	Practical employment
<i>Structure of employment:</i>	<ol style="list-style-type: none"> 1. Introduction 2. Theoretical part 3. Analytical part: <ul style="list-style-type: none"> - Cluster and organizer - Test and situational task 4. Practical part
Purpose of employment:	<ul style="list-style-type: none"> - To study structure and properties of various kinds of amalgams - To study the indications and contra-indications for application of dental amalgams - To accustom features of preparing of cavities of various classes under amalgam - To study tools for work with amalgam - To master a technique of a finishing furnish of dental amalgams
The student should know:	<ul style="list-style-type: none"> - Structure and properties of amalgam - indications and contra-indication for application of amalgam - Feature of preparing of cavities under dental amalgams - Tools used for sealing of dental amalgams
The student should be able:	<ul style="list-style-type: none"> - To prepare a cavity under dental amalgams - To get mixed up various kinds of dental amalgams - To seal up cavities on phantoms by dental amalgams - To carry out a finishing furnish by dental amalgams

<p><i>Tasks of teacher:</i></p> <ul style="list-style-type: none"> - To explain structure and properties of various kinds of amalgams - To explain indications and contra-indications to application of seals by amalgams - To formulate features of preparation of cavities of various classes under an amalgam - To show tools for work with an amalgam - To spend a technique of finishing furnish of seals from an amalgam. 	<p><i>Results of education:</i></p> <ul style="list-style-type: none"> - The student has mastered structure and properties of various kinds of amalgams - Has studied indications and contra-indications to application of seals from amalgams - Has mastered features of preparation of cavities of various classes under an amalgam - Knows tools for work with an amalgam, has spent a technique of finishing furnish of seals from an amalgam.
<p><i>Methods of education:</i></p>	<p>Lecture, cerebral assault, story, videomethod, practical employment, work with a book, dialogue, educational games,organizer.</p>
<p><i>Forms of education:</i></p>	<p>Work in groups («We study together», « Work together-change by ideas »), single</p>
<p><i>Educationalmeans:</i></p>	<p>Board-stand, video films, a writing board, models, the schedule, diagrammes, the scheme, notes, a control leaf, texts.</p>
<p><i>Educationalconditions:</i></p>	<p>The specially technologically equipped rooms.</p>
<p><i>Monitoring</i></p>	<p>Verbal poll : express test, written poll: test</p>

Amalgams.The indications to application.A technique of preparation and sealing of cavities of various classes.

Tecnological card of employment:

Stages and duration of employment (135min)	Activities	
	Teacher	Students
1-stage.45 min	Check of writing-books and attendance	
5 min	1.2 To explain theme of employment and expected results. To acquaint the plan of employment.	Listen, write down.
10 min	1.3. To tell keywords, the list of references for independent work (section №8)	Define, ask questions,
20 min	1.5. To acquaint with criteria of an estimation during employment (section №6)	Acquaintwithcriteriaestim ations
10 min		

	Break	
2-stage.45 min 10 min 10 min 15 min 10 min 10 min	<p>2.1. The express train the test / a question-answer / knowledge becomes stronger brain storm</p> <p>2.2. Explain the plan and structure of practical employment ("web" working game) (section №3)</p> <p>2.3. Divide students into groups and explain work rules of clusters (section №4)</p> <p>2.4. To give to students visual aids for the best development (tests and situational problems, models, preparations, computer programs, phantoms) to give concepts how to use them (section №4)</p> <p>Break</p>	<p>Answer, write.</p> <p>Work in groups,</p> <p>Groups carry out</p> <p>Groups carry out</p> <p>Represent</p>
3-stage.45 min 20 min 5 min 10 min 10 min	<p>3.1. To execute practical skills (section №5)</p> <p>3.2. It is summed up a lesson, the analysis of the done work and attention of students addresses that is useful to them in the future work</p> <p>3.3. Estimate work of groups, the degree analysis of employment. The analysis of control questions (section №7)</p> <p>3.4. Give the task for independent work and define criterion of their estimation.</p>	<p>Carry out practical skills</p> <p>Estimate and each other.</p> <p>Ask questions written down tasks</p>

4. Motivation

The knowledge of structure, properties, indications to application, ways of getting mixed of filling materials with a basis of amalgam has the important meaning in preventive maintenance and treatment of illnesses of teeth. It is necessary to make a correct choice of tools for survey and sealing, to choose necessary filling material and to lead in the further treatment. Received volume of theoretical knowledge and fulfilled manual skills in subsequent will help the future expert with success to apply them in practice.

5. Interdisciplinary and inter-subject bindings:

The training of the given theme is based on knowledge of students bases of anatomy, physiology. The knowledge, received during employment will be used at studying of a phantom rate, faculty and hospital therapeutic dentistry, and also other clinical disciplines.

6.0. Theoretical part

6.1. Contents of employment:

Amalgam - alloy of mercury with one or several metals. Depending on quantity of metals, amalgams including three and more components are subdivided on simple, consisting from two components, and complex. Besides mercury this silver, tin, copper, zinc. In process amalgating metals enter chemical reactions with mercury, forming intermetallics, ensuring hardening of a seal. All metals should be included into structure of amalgams in optimum quantities.

The silver gives to amalgam the large hardness, anticorrosion resistance, at surplus the expansion of a seal is increased, at lack on the contrary - is observed significant shrinkage. The tin accelerates process of amalgating, at surplus the time of hardening is increased shrinkage of a seal, and durability and hardness decrease. Copper raises durability and provides best adjoining of a seal to edges of a cavity, decrease of fluidity, at surplus the opposite effect is observed. The zinc prevents formation of oxides, raises plasticity and reduces fragility of amalgam.

STRUCTURE of AMALGAM:

The alloy consists from ligature of silver - tin-copper with the additives of zinc and mercury. It can be prepared by different ways. Components of an alloy weigh, fusing and filling in in the forms. After cooling the ingots cutting transform.

In shavings. Are formed needle-like particles of various size (splinter-like amalgam). Fusing weight it is possible also spray in environment of protective gas. At sharp cooling are formed spherical or drop-like particles. The alloys containing various quantity of splinter-like, and spherical particles (mixed amalgam) are known.

Positive properties of amalgam: the large durability; stability to abrasion; plasticity; the stability to a moisture (it's possible to work at hit in cavity with saliva or blood, that makes amalgam irreplaceable in children's practice); antiseptic property of silver; ability of amalgam to cause on border of contact with firm fabrics amplification of mineralization of firm fabrics.

Negative properties: weak adhesion; has expressed heat conduction; factor of thermal expansion does not coincide with factor of thermal expansion of a tooth; gives the shrinkage; is exposed to corrosion; is capable to amalgating gold artificial limbs and crowns; can arise galvanic syndrome; is not aesthetic; is capable to change colour of a tooth; in rare cases cause a chronic poisoning of organism by mercury.

The indications for application the amalgam: sealing of cavities of constant and dairy teeth I, II, V (molars) of classes on Black.

Amalgam is contra-indicated: at presence in the oral cavity with the phenomenon of galvanism; at use of teeth under metal orthopedic designs; at presence of orthopedic designs in the oral cavity; sealing of frontal group of teeth; at strongly destroyed crowns of teeth.

The representatives of amalgams: silver amalgam **SSTA-01**. The small-disperse (size of particles of a powder no more than 160 microns). Structure of a powder - silver 68 %, tin 28 %, zinc 1 %, copper 3 %. Is let out complete with mercury.

Amalgam with high level of copper. Structure includes silver - 58 %, tin - 27 %, copper - 11,5 %, indiy - 3 %, titan - 0,5 %. The durability of such amalgam in 3 times is higher than others.

Copper amalgam tableted—copper approximately 30 % and mercury 70 % with addition of tin 1,5-2 % and silver. Is let out as briquettes –tiles 5x5 mm. Prepare by warming up above a spirit-lamp.

Amadent (silver amalgam) - complete set of expendable dozes of mercury and powder in capsuls.

Copper amalgamcapsuled - a complete set of expendable dozes of mercury and powder in capsuls.

Vivacap, AmalcapPlus Non- Gamma-2 (Vivadent).It's amalgamwith the high contents of silver. The phases scale - 2 do not contain. The phase makes mercury - tin (phase scale - 2) amalgamby more sensitive to corrosion, as itmost electrochemically active. The mercury is allocated from this phase to the greatest degree. Selected at infringement of this phase the mercury can adsorbe by a phase silver - tin, that results in expansion and promotion of edges of a surface of a seal.

There are various ways of preparation of amalgam. At manual method is necessary quantity of mercury and sawdust put into porcelain mortar and pound porcelain pestle before reception homogeneous plastic weight. Preparation of amalgam carry out in fume chamber . A volumetric parity: 4 parts of a powder and 1 part of mercury. At such way the pollution of air of pairs mercury, toxic influence on the personnel is not excluded.

Amalgamcan be prepared in special devices - amalgamators. It is electrical vibrators with the large number of fluctuations one minute. Mercury and the sawdust brings in capsules, then capsules are fixed in amalgamators. The relay of time allows to adjust automatically time (40 sec). Lack is that the filling of capsules is necessary for carrying out in fume chamber . At vibration nor exclude pollution of a study.

The new design of amalgamator has automatic dosing device (tanks of sawdust and mercury), the automatic mechanism of correction of dozes of components, mixing tube, that allows to prepare the amalgam without preliminary refuellingof capsules, the process proceeds inside the device.

Last years apply capsuled amalgam. Capsules are tight. A capsule consists of 3 parts. In one the powder, in another mercury is located, third divides them. In an average part there is an aperture, through which at turn on 180 there is a connection of a powder and mercury. Capsulesare fixed in amalgamator and get mixed up amalgam .

Technique of sealing amalgams (fig. 64, 65): on the bottom of the generated cavity and the walls up to enamel-dentin border necessarily impose isolated lining of phosphate cement, or isolated varnish. This measure is necessary for isolation of fabrics from temperature influences. The lining should harden, that it was not squeezed out from a cavity and has not broken isolation of dentin. After preparation of amalgam by several portions bring in special stopferwith scarifications, amalgam carrier. It is impossible to take amalgamby hands, it sharply changes properties of amalgamin the worse party. Then by circular movementsrubamalgampointingstopferorpolyrum to walls of a cavity, to the bottom of a cavity, that provides hercondensation. Formed on a surface of a seal surplus of mercury carefully delete. Modeling of a seal make wadded by sponges and tools for sealing (burnisher, stopfers). For improvement regional adjoining by round stopferwith effort will carry out on a line of connection of a seal and enamel of a tooth. Then,by easy movements of round stopfer create a smooth surface of a seal. Check by closure of tooth lines, whether the seal occlusion overestimates, At sealing cavities II use matrixes. The adjacent cavities seal up in two visitings.

Silver amalgam hardens 1,5-2 h, this process through 6-8 h comes to an end. Therefore patient is recommended during 1,5-2 h not to accept food and within 6-8 hours not to chew rough food by the sealed up tooth. Polishing and polishing will carry out the next day, not earlier, by grind carborundumstones, veneers, abrasive strips. Polish rubber, felt points, finishers and brushes. A final furnish will carry out necessarily, as the smooth surface of dental amalgam raises its hardness, stability to corrosion, regional adjoining, quality and term of functioning of a seal. The seal is considered correctly processed, if it has a smooth, brilliant surface, and the probe does not feel border between a seal and tooth.

The indications and the technique of application copper amalgam is similar.

The requirements to a premise, where are applied seals from amalgam.

The raised contents of steams of mercury in air is harmfully reflected on health working. Therefore at organization of a study it is necessary to accept a number of warning measures. The mercury evaporates at room temperature, it is easy adsorbes by porous materials (tree, plaster, wall-paper).

Therefore walls, door, frames, furniture should be painted by an oil paint bynytroenamel, that allows to carry out regular sanitary processing of a study 20 % by a solution of chloric iron. The floor should be covered with the linoleum, which should come on walls on height not less than 10 see. The presence fume chamber for preparation and storage of amalgamis necessary.

Application of capsuledamalgam and amalgamators practically eliminate pollution by mercury.

As a substitute of mercury amalgamthe materials on a basis of gallium are offered. Gallium, as well as the mercury, forms alloys with metals at room temperature. It does not render irritating influence, is soaked up and not accumulates in tissues of human body. Has authentic anticavity action.

Gallodent-m. The complete set consists of a powder and liquid making part (alloy of gallium and tin).

The powder is dosing out by plastic measurer, liquid – withmeasurerofполусферическойform. In certain parity powder and liquid bring in capsule, and mix in amalgamator for 20-30 with.

Besides only mechanical coupling, gallium seals have additional adhesionconnection with firm tissues of a tooth. On durability does not concede silver amalgam. At harding slightly extends, that provides best regional прилегание and smaller regional permeability. But in some months even at the executed polishing and polishing of a seal from Gallodent became dark.

The indications to application and the technique of statement of a seal is similar to mercury amalgams.

Criteria of estimation of theoretical part:

Max.point	17-14,2 point	14 – 11 point	10,8 -7,4point	7,2point
20-17,2point				
Excellent	Good	Medium	Unsatisfactorily	Bad
100-86%	85-71%	70-55%	54-37%	36% and lower

Realization of game " BRAIN STORM ":

1. What is a seal?
2. Purpose of sealing of teeth?
3. Stages of preparing the cavities?
4. What is criterion for a choice of a filling material?
5. Localization of cavities by classification of Black.
6. Tools used for sealing.
7. Group of filling materials.
8. Indication to use temporary seals.
9. What is the correct way of getting mixed the phosphate -cement?
10. Criterion of readiness Silidont and Silicyn.
11. What is the amalgam?
12. Kinds of amalgams.
13. Indication to use the amalgam.
14. Positive properties of amalgam.
15. Negative properties of amalgam.
16. For what is necessary using the isolated lining under amalgam?

III. An analytical part

Situational tasks:

1. In 26 is located an extensive cavity with thin walls. A tooth is pulpless. The lining is by phosphate-cement, seal by silver amalgam is imposed. Whether the mistake is admitted at sealing? Prove the answer.
2. In the infrabulge area of 27 is located an average depths cavity. After preparing and medical processing was put the seal by silver amalgam. Whether the mistakes at stages of treatment are admitted? Prove the answer.

3. The top frontal teeth is covered with gold crowns. At treatment of 33 concerning average caries the lining from phosphate-cement and seal by silver amalgam is imposed. Whether the filling material was chosen correctly? Prove the answer.

4. Sealing adjacent cavities II of a class by Black (distal cavity on 36 and medial a cavity on 37) will be carried out. The cavities are sealed up in one visiting. Whether there are mistakes in treatment? Prove the answer.

Criteria of estimation of analytical part:

Max.point.-15 excellent	Good	Medium	Unsatisfactorily	Bad
15-12,9	12,75-10,65	10,5-8,25	8,1-5,55	5,4 and lower
100% - 86%	85% -71%	70-55%	54% -37%	36% and lower

Tests:

1. What provides bacteriocyte influence in silver amalgam?

- A. silver
- B. zinc
- C. mercury
- D. copper
- E. alluminium

2. Percentage of silver amalgam:

- A. 66%
- B. 80%
- C. 50%
- D. 40%
- E. 78

3. Parity of silver and mercury in silver amalgam:

- A. 4:1
- B. 5:1
- C. 3:1
- D. 2:2
- E. 4:3

4. Bacteriocyte effect gives to silver amalgam:

- A. silver
- B. zinc
- C. mercury
- D. copper
- E. alluminium

5. The device of preparation an amalgam is:

- A. АСД -02
- B. ЭОД
- C. ДКСМ
- D. ГЕ-5-03
- E. ЭЛОЗ

6. Amalgam lack is:

- A. Galvanising, heat conductivity
- B. Chemical firmness
- C. Bacteriocyte effect
- D. Mechanical durability
- E. All answers are true

7. The amalgam is used for sealing:

- A. 1 class
- B. 2 class
- C. 3 class
- D. 4. class
- E. 5 class.

Criteria of estimation of tests:

Max.point.-15 excellent	Good	Medium	Unsatisfactorily	Bad
15-12,9	12,75-10,65	10,5-8,25	8,1-5,55	5,4 and lower
100% - 86%	85% -71%	70-55%	54% -37%	36% and lower

IV. Practical part:

Manual skill:

Final processing of constant seals by various types of filling materials.

The aim: To learn how to carry out final processing of constant seals.

The indications: To put and to carry out final processing of constant seals.

Equipment: phantoms, dental drilling machine, dental bur, stomatological tools for sealing, transfer paper, polish paste, brush, rubber head.

№	Steps of manual skills:	Realization of all steps:
1.	Constant seal form by means of a diamond pine forest.	10
2.	By means of a transfer paper define excessive places of a seal.	10
3.	Surpluses of a seal delete by a stone or a diamond pine forest. The seal should not limit movement of jaws and not cause inconveniences in a mouth.	10
4.	The constant seal is polished with polishing pastes by means of brushes or rubber heads.	10

7.Types of control, usingfor estimation of student's knowledge:

- verbal answer
- activeparticipation in discussions

-results of written answers

- solutions of test tasks

8. Criteria of estimation of current control:

№	Mark	Excellent	Good	Satisfactorily	Unsatisfactorily	Bad
	Adoption in %	100%-86%	85%-71%	70-55%	54%-37%	36% и ниже
1	Theoretical part	20-17,2 point	17-14,2 point	14- 11 point	10,8 - 7,4 point	7,2 point
2	Analytical part: Organizer	15-12,9	12,75-10,65	10,5-8,25	8,1-5,55	5,4
3	Test	15-12,9	12,75-10,65	10,5-8,25	8,1-5,55	5,4
4	Practical part	40-34,4- point	34-28,4 point	28-22 point	21,6-14,8 point	14,4 point
5	Control questions	10-8,6	8,5-7,1	7,0-5,5	5,4-3,7	3,6 point

Chronological card of practical employment:

№	Stage of employment	Type of employment	Duration-min.	Intermission
1.	Checking	Exercise book, power of participation of students. Theme, aim and tasks Plan, list of literature Introduction with criteria of marks	5 min. 5 min 5 min 5 min	
2.	Theoretical part	Discussion, cerebral assault Business game "web"	15 min 15 min	5 min
3.	Analytical part	Tests and solving of situational tasks, clusters, organizers. Visual aids	20 min 15 min	
4.	Practical part	Realization of practical skills and conclusion of made work	20 min 15 мин	10 min

5	Total:	Analysis of theoretical tasks, marks, homework and independent work	10min 5 min	
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№	Progress in %	Estimation	Level of knowledge of the student
1	96-100%	Excellent "5"	<p>The complete correct answer to questions on classification of the dentist equipment and of amalgams, structure, properties and application amalgams, a structure of the basic parts of the dentist equipment, their application, safety precautions at job on the dentist equipment. Summarizes and accepts the decisions, creatively thinks, independently analyzes. Situational tasks and tests decides correctly, with the creative approach, with a complete substantiation of the answer.</p> <p>Actively, creatively participates in interactive games, correctly accepts the proved decisions and summarizes, analyzes.</p> <p>Manual steps carries out precisely, knowing a sequence of steps.</p>
2	91-95%	Excellent "5"	<p>Complete correct answer to questions on classification of the dentist equipment and amalgams, structure, properties and application of amalgams, a structure of the basic parts of the dentist equipment, their application, safety precautions at job on the dentist equipment. Summarizes and accepts the decisions, creatively thinks, independently analyzes. Situational tasks and tests decides correctly, with the creative approach, with a complete substantiation of the answer.</p> <p>Actively, creatively participates in interactive games, correctly accepts the proved decisions and summarizes, analyzes.</p> <p>Manual steps carries out, knowing a sequence of steps.</p>
3	86- 90%	Excellent "5"	<p>Complete correct answer to questions on classification of the dentist equipment and of amalgams, structure, properties and application of amalgams, a structure of the basic parts of the dentist equipment, their application, safety precautions at job on the dentist equipment. Summarizes and accepts the decisions, creatively thinks, independently analyzes but there are 1-2 discrepancies in</p>

			<p>the answer. Independently analyzes. Discrepancies at the decision of situational tasks, but at the correct approach.</p> <p>Actively participates in interactive games, accepts the correct decisions.</p> <p>Manual steps carries out, knowing a sequence of steps but there are 2-3 grammatic mistakes.</p>
4	81-85%	Good "4"	<p>The full right answer on questions on classification of the dentist equipment and amalgams, structure, properties and application of amalgams, structure of the basic parts of the dentist equipment, their application, the safety precautions at work on the dentist equipment. Sums up and makes decisions, creatively thinks, independently analyzes, but there are 2-3 discrepancies, errors. Puts into practice, understands a question essence, tells confidently, has exact representations. Situational tasks are solved correctly, but an answer substantiation insufficiently full.</p> <p>Actively participates in interactive games, correctly makes decisions.</p> <p>Manual steps carries out confidently, knowing sequence of steps correct, but incomplete illumination of a question.</p>
5	76-80%	Good "4"	<p>Correct, but incomplete illumination of a question. The student knows of the dentist equipment and of amalgams, structure, properties and application of amalgams, structure of the basic parts of the dentist equipment, their application, but not completely understands the mechanism of action and development of by-effects. Understands essence of a question, tells confidently, has exact representations. Actively participates in interactive games. On situational tasks and tests gives the incomplete decisions.</p> <p>Manual steps carries out not confidently, knowing a sequence of steps</p>
6	71-75%	Good "4"	<p>Correct, but incomplete illumination of a question. The student knows classifications, but not full lists the indications to application of amalgams, their by-effects, basic properties, not completely understands the mechanism of action and development of by-effects. Understands essence of a question, tells confidently, has exact representations. On situational tasks and tests gives the incomplete decisions.</p> <p>In realization of manual skill confuses a sequence of steps.</p>
7	66-70%	Satisfactory "3"	<p>Correct answer to half of put questions. The student</p>

			<p>knows classifications, not full lists the indications to application of the dentist equipment and of amalgams, basic properties, but badly understands the mechanism of action, is confused in the names of amalgams. Understands essence of a question, tells confidently, has exact representations only on separate questions of a theme. Situational tasks are decided correctly, but there is no substantiation of the answer.</p> <p>Manual skill spends hardly.</p>
8	61-65%	Satisfactory “3”	<p>Correct answer to half of put questions. The student knows classifications, not full lists the indications to application of the dentist equipment and of amalgams, basic properties, but badly understands the mechanism of action, is confused in the names of amalgams. Tells uncertainly, has exact representations only on separate questions of a theme. Supposes mistakes at the decision situational and test tasks.</p> <p>The student spends 2-3 steps of manual skills</p>
9	55-60%	Satisfactory “3”	<p>The answer with mistakes on half of put questions. The student makes mistakes in classification, indication to application of the dentist equipment and of amalgams, basic properties, in the mechanism of action, Tells uncertainly, has partial representations on a theme. Situational tasks and the tests are decided incorrectly.</p> <p>The student spends 1-2 steps of manual skills.</p>
1 0	50-54%	Satisfactory “3”	<p>Correct answer to 1/3 put questions. The student does not know classification, indications to application, of the dentist equipment and of amalgams, structure, properties and application of amalgams, structure of the basic parts of the dentist equipment, their application Situational tasks and the tests are decided incorrectly at the wrong approach.</p> <p>Manual skill is executed not full</p>
1 1	46-49%	Unsatisfactory “2”	<p>Correct answer to 1/4 put questions. The student does not know classification, indications to application, of the dentist equipment and of amalgams, structure, properties and application of amalgams, structure of the basic parts of the dentist equipment, their application. Situational tasks and the tests are decided incorrectly at the wrong approach.</p> <p>Manual skill is not executed.</p>
1 2	41-45%	Unsatisfactory “2”	<p>Illumination 1/5 put questions with mistakes. The student does not know classification, indications to application, of the dentist equipment and of amalgams, structure,</p>

			properties and application of amalgams, structure of the basic parts of the dentist equipment, their application Does not know concept about realization of manual step. Manual skill is not executed.
1 3	36-40%	Unsatisfactory “2”	Illumination 1/10 parts of questions at the incorrect approach. The student does not know classification, indications to application, of the dentist equipment and amalgams, structure, properties and application of amalgams, structure of the basic parts of the dentist equipment, their application. Does not know concept about realization of manual step. Manual skill is not executed.
1 4	31-35%	Unsatisfactory “2”	Does not give the answers on questions. Does not know manual skill and does not carry out.

Control questions:

1. Amalgams, structure, physical and chemical properties.
2. Positive and negative properties of amalgams.
3. Indications to applications for using amalgams.
4. Technique of preparation and sealing by amalgams.
5. Requirements to a room, where dental amalgam is used.
6. Amalgam on a basis of gallium, structure, physical and chemical properties.

The recommended literature:

Basic:

1. Borovsky E.V. "Therapeutic dentistry" m. of 1975.
2. Magid E.A., Muhin N.A. The atlas of phantom course and therapeutic dentistry M.: medicine, 1987
3. Borovsky E.V. "Therapeutic dentistry". - M., 2003.
4. Borovsky E.V. "Therapeutic dentistry". - M., 1998.

Additional:

1. Petricas A.J. Operative and restorative dentistry. 1994r. - 285c.
2. Chilikin V.. The newest technologies in the aesthetic dentistry.
3. Nikolaev A.I., Cepov L.M. Practical therapeutic dentistry - 2003.

Practical lesson № 10

Topic: Amalgam. Indications for application. The procedures for preparing and filling cavities of various classes.

Time: 135 min	The number of students :8-10
Type and form of lesson	practical training
<i>The structure of the training session</i>	<ol style="list-style-type: none">1. Introduction.2. The theoretical part3. Analytical part:<ul style="list-style-type: none">- Cluster and organizerTests and case studies4. The practical part
<i>The aim of the activity:</i>	<ul style="list-style-type: none">- To study the composition and properties of various types of amalgam-Examine the indications and contraindications to the use of amalgam fillings-Master the features of various classes of cavity preparation for amalgam-Learn tools for working with amalgam Master the finishing of amalgam fillings.
<i>The student should know:</i>	<ul style="list-style-type: none">-structure and properties of amalgams- Indications and contraindications to the use of amalgams- Features of cavity preparation for amalgam- Instruments used to amalgam fillings
<i>The student should be able to:</i>	<ul style="list-style-type: none">- Cavity preparation for amalgam- Mix the different types of dental amalgam fillings- Fill cavities on phantoms with amalgam

	-hold finishing amalgam.
<p><i>Task of the teacher:</i> <i>The general concept of filling materials for root canal</i> <i>-to provide a classification of filling materials for root canal</i> <i>-give an idea of the pins</i> <i>-to provide knowledge on the principles of root canal</i> <i>-The main requirements for each step of sealing</i></p>	<p><i>Learning outcomes:</i> -composition and properties of different amalgam kinds -examined the indications and contraindications to the use of amalgam fillings -mastered characteristics of different classes of cavity preparation for amalgam -recognizes the tools to work with amalgam, spent methodology finishing amalgam fillings.</p>
<i>Training methods</i>	Lecture, brainstorming, story videomethod, workshops, working with books, dialogue, educational games, pinbord. organizer.
<i>forms of learning</i>	Group work ("Learning Together", "Work with me, thought"), single
<i>training tools</i>	Stand-board, flip chart, video, writing board, model, models, graphics, diagrams, charts, notes, checklist, texts.
<i>learning Environment</i>	Specially technologically equipped rooms.
<i>monitoring Evaluation</i>	Recitation: rapid test, writing topic test

"Restorative fillings root canals (pasta, PINS, cement)"

Flow chart of lesson

Phases and time lesson (135min)	Activity	
	Teachers	Students
1-part. 45 min 5 min 10 min 20 min	1.1. Checking notebooks and attendance 1.2 explained to the subject classes and the expected results. To introduce lesson plans. 1.3. Tell keywords, references to independent work	Listen and write. Determine, ask questions,

10 min	(Section № .8) 1.5. To familiarize with the evaluation criteria during the occupation (section number 6) change	Familiarize with the evaluation criteria
2 - stage. 45 min 10 min 10 min 15min 10 min	2.1. Quick Test / faq / knowledge strengthens brain Curtains 2.2. Explains the plan and structure of the practice session ("web" work and play) (section number 3) 2.4. Divide students into groups and are explained the rules of klassterom (section number 4) 2.6. Give students visual aids to better capture (tests and case studies, models, products, software, phantoms), to give an idea of how to Use (section number 4) 2.7. change	Answer, write. Work in groups group perform group perform Presented by
3 - phase. 45 min 20 min 5 min 10 min 10 min	3.1. Perform skills (section number 5) 3.3. Sums up the lesson, the analysis of the work and the students' attention is drawn to the fact that they used in the future work 3.5. Evaluate the work groups, the level of training. Analysis of the checklist (section number 7) 3.6. Given the task to stand alone and determine the criteria for their evaluation.	Perform skills Assess yourself, yourself and each other. Ask questions write job

4. Motivation

Knowledge of the composition, properties, indications, methods of mixing filling materials based on an amalgam matter great importance in the prevention and treatment of dental disease. You must correctly choose tools for inspection and sealing, select the desired filling material and to further treatment. The resulting scope of theory and routine manual skills in the future will help the future specialist to successfully apply them in practice.

5. Intra and interdisciplinary communication

Teaching of the subject is based on the knowledge of students the basics of anatomy, physiology. Acquired during the course knowledge will be used in the study of the phantom of the course, the faculty and hospital dentistry, and other clinical disciplines.

6. The theoretical part

6.1 Lesson content

Amalgam - an alloy of mercury with one or more metall. Depending on the amount of metal amalgam divided into simple, consisting of two components, and complex, involving three or more components. In addition to mercury, the silver, tin, copper, and zinc. In the process of amalgamation of metals enter into chemical reactions with mercury, forming intermetalloidous providing curing seal. All metals should be part of the amalgam to in optimal quantities.

Silver amalgam gives greater hardness, corrosion resistance, increases with excess expansion seal, with a deficiency, on the contrary - there is considerable shrinkage. *Tin* accelerates the amalgamation, with excess shrinkage increases seals, curing time, and the strength and hardness decreased. *Copper* increases strength and provides a better fit to the edges of the cavity fillings, reducing stress, there is an excess of the opposite effect was. *Zinc* prevents the formation of oxides, ceases ductility and reduces brittleness amalgam.

COMPOSITION AMALGAM

Alloy consists of ligature silver-tin-copper with zinc supplements and mercury. It can be prepared with different ways: alloy components weighed, melted and poured into molds. After cooling, the ingot sawing make in chips. Form needle-shaped particles of varying size. The melt can be also sprinkle in inert gas. The quench image of the round or teardrop-shaped particles. There are alloys containing different amounts as splinter-formed and spherical particles (mixed amalgam).

Positive properties of amalgam: high strength, abrasion resistance, flexibility, resistance to moisture (amalgam can operate when there is a cavity in the saliva or blood, making an amalgam indispensable in pediatric practice), antiseptic properties of silver amalgam ability to provoke the interface between solid tissues increased mineralization of hard tissues.

Negative characteristics: poor adhesion (mechanical) has apparent thermal conductivity, thermal expansion coefficient is not equal to the coefficient of thermal expansion of the tooth; shrink, rust, can amalgamate gold dentures and crowns; may galvanic syndrome, not aesthetic, can change the color of the tooth; in rare cases cause chronic poisoning of the body mercury.

Indications for use of amalgams: filling the cavities of permanent and deciduous teeth I, II, V (molars) classes in Black. Amalgam is contraindicated: if there are oral phenomena of galvanism, when using metal teeth for orthopedic construction, with the presence of prosthetic in the mouth, filling the front of teeth, with the need for radiation therapy of maxilla-facial region, with crowns of severely damaged teeth.

Representatives of amalgams: Silver amalgam FTAA-01. Fine-structure (particle size less than 160 microns). The powder (or chips) - silver 68%, 28% tin, zinc, 1%, 3% copper. Produced complete with mercury.

High copper amalgam Wed Moita-58. Composed of-silver - 58% tin - 27% copper - 11.5% indium - 3%, titanium - 0.5%. The strength of this amalgam is 3 times higher than the rest.

Copper amalgam tablets - about 30% of copper and mercury 70% with the addition of 1.5-2% tin and silver. Produces in briquettes - tiles 5x5 mm. Prepare a warm-up over the alcohol lamp.

Amadent (silver amalgam) set of single-dose mercury and a powder in capsules.

Copper amalgam encapsulated- set of single-dose mercury and a powder in capsules.

Vivacap, Amalcap Plus Non-Gamma-2 (Vivadent). It is an amalgam of high silver content. Not contain gamma-2 phase. Tin-mercury phase (phase gamma-2) makes an amalgam more sensitive to corrosion, because it is more electrochemically active. Mercury is released from this phase the most. Released in violation of this phase, the mercury can be adsorbed phase silver-tin, which leads to expansion and the launch of the edges of the surface of the seal.

There are various ways to make the amalgam. When machine less method required amount of mercury and sawdust placed in a porcelain mortar and pestle, grind the porcelain to a homogeneous plastic mass. Amalgam preparation is carried out in a fume hood. The volume ratio of 4 parts powder to 1 part mercury. With this method does not exclude the air pollution by mercury vapor, toxic effects on staff.

Amalgam may be prepared in special devices, amalgamator. This electric vibrators with a large number of oscillations per minute. Mercury and make sawdust in capsules, then fixed in a capsule amalgamator. Time switch automatically adjusts the time (40). The downside is that the filling of capsules should be performed in a fume hood. At vibration is also not excluded pollution of study.

New design amalgamator SDA-02 has an automatic dispensing unit (tanks sawdust and mercury)

automatic dose adjustment components, mixing tube that allows you to cook without first filling amalgam capsules, the process takes place inside the machine.

In recent years the use encapsulated amalgam. Sealed capsules. Capsule consists of 3 parts. In a powder placed, in the other-mercury, a third of their shares. In the middle of an opening through which a rotation by 180 ° is a connection powder and mercury. The capsules are fixed in amalgamator and knead amalgam.

Amalgam filling technique (Fig. 64, 65) formed on the bottom wall of the cavity and to the enamel-dentin border necessarily impose an insulating pad of phosphate or glass ionomer cement or insulating varnish. This measure is necessary to isolate the tissue from the effects of temperature. Gasket should solidify that it is not squeezed out of the cavity and broken insulation dentin. After making several portions of amalgam plugger to make special notches amalgamator. Hands can not take the amalgam, it dramatically changes the properties of amalgam for the worse.

Then grind in a circular motion amalgam plugger capitates or polisher to the walls of the cavity to the bottom of the cavity, which ensures the seal. Formed on the surface of the excess mercury fillings carefully removed. Modeling seals produce cotton balls and tools for sealing (trowels, plugger). For improvement of fit round plugger with the effort to conduct the line of junction fillings and tooth enamel. Then lightly round plugger create a smooth surface fillings. By closing Check the of dentition, it is no overstatement filling bite, when filling cavities II uses matrix. Adjacent cavity is sealed at the two visits.

Silver amalgam hardens 1.5-2 h, the process ends after 6-8 hours so the patient is recommended for 1.5-2 hours and do not eat for 6-8 hours not chew roughage sealed tooth. Grinding and polishing is carried out on the following day, not before. Carborundum polished stones finir, strips. Polished with rubber, felt heads, polishers and brushes. Finishing of is carried out necessarily as smooth amalgam fillings increases its hardness, corrosion resistance, marginal adaptation, quality and duration of operation of the seal. The seal is correctly processed, if it has a smooth, shiny surface, and the probe does not feel the boundary between the filling and the tooth.

Indications and methods of application of copper amalgam is similar.

Room requirements, where applicable amalgam.

Increased content of mercury vapor in the air is harmful effect on the health of workers. Therefore, the organization's office should take a number of warning measures. Mercury evaporates at room temperature, easily absorbed by porous materials (wood, plaster, wallpaper). Therefore, the walls, doors, frames, furniture should be painted with oil paint or nitroemal, which allows for regular sanitizing (demercurization) Cabinet 20% solution of ferric chloride. The floor should be covered with linoleum, which is to go on the walls to a height of 10 cm. Fix it with special structures, nailing prohibited. The office should be natural ventilation (vents, skylights), completed a forced ventilation system with a multiplicity of air exchange 3-4. You must have the hood for preparing and storage amalgams.

The use of encapsulated amalgam and amalgamator carriers virtually eliminate mercury pollution.

As a substitute for mercury amalgam offer materials based on gallium. Gallium, like mercury, forms alloys with metals at room temperature. It has no irritating, and absorbed in body tissues. Hardly evaporates at

Preparing filling. Anticariogenichas significant influence.

Galodont-M. The set consists of a powder and a liquid component of (an alloy of gallium and tin).

11 metered flow plastic measuring device, liquid - measuring device with a hemispherical recess. In a ratio of powder and liquid is introduced into the capsule and mixed amalgamator 20-30.

Apart from the purely mechanical grip, gallium fillings have an additional adhesive bond with the hard tissues of the tooth. Strength is not inferior to silver amalgam. During solidification slightly expands that provides the best of fit and less marginal permeability. But after a few months even during grinding and polishing of fillings Gallo dent darken.

Indications for use and method of setting the seal is similar to mercury amalgams.

The Games "Brainstorming":

1. What is the seal?
2. The purpose of dental fillings?
3. Stages of preparation with cavities?
4. What is the criterion for the choice of filling material?
5. Localization of cavities by Black?
6. Tools used for filling?
7. Groups of filling materials?
8. Requiring the use of temporary fillings?
9. How to properly mix the phosphate cement?
10. Criteria of "Silidont"s and "Silitsin"s readiness?
11. What is an amalgam?
12. Types of amalgam?
13. Requiring the use of amalgam?
14. Positive properties of amalgam?
15. Negative properties of amalgam?

16. Why use an insulating pad under amalgam?

III. Analytical part.

Situational problems

1. In 26 extensive cavity with thin walls. Pulp less tooth. Superimposed pad phosphate cement filling of silver amalgam. Allowed if an error when filling? Justify the answer.
2. In the cervical area of the average depth of 27 cavities. After preparation and drug treatment set of silver amalgam fillings. Admitted a mistake on the course of treatment?
3. The upper front teeth are covered with golden crowns. In the treatment of about 33 middle caries imposed gasket phosphate cement and filling of silver amalgam. Selected correctly filling material? Justify the answer.
4. Carried filling adjacent cavities class II Black (distal and medial cavity 36 cavity 37). Cavity is sealed in one visit. Are there any errors in treatment? Justify the answer.

Criterion for evaluating the analytical part

Mak.ball.-15 fine	good	satisfactorily	Dissatisfaction	poorly
15-12,9	12,75- 10,65	10,5-8,25	8,1-5,55	5,4 and lower
100% - 86%	85% - 71%	70-55%	54% -37%	36% and lower

Tests

1. Which provides bactericidal effect in silver amalgam?

A silver

B. zinc

B. Mercury

G. Copper

D. Aluminum

2. Protsentny composition of silver in silver amalgam:

A 66%

B. 80%

B. 50%

G. 40%

D. 78%

3. The ratio of silver and mercury in silver amalgam:

4:1

5:1

3:1

2:2

4:3

4. Bactericidal gives silver amalgam:

silver

zinc

mercury

copper

aluminum

5. Amalgam preparation device is:

ASD -02

EDP

DKSM

GE-5-03

ELOZ

1. The disadvantage of amalgam is:

galvanization, heat conduction

chemical resistance

bactericidal

mechanical strength

All answers are correct

6. Amalgam used for fillings:

1.1 Class

2.2 Class

3.3 Class

4.4. Class

5.5 Class.

Criterion of evaluation tests:

Mak.ball.-15 fine	good	average	dissatisfaction	poorly
15-12,9	12,75- 10,65	10,5-8,25	8,1-5,55	5,4 and lower
100% - 86%	85% -71%	70-55%	54% -37%	36% and lower

IV. The practical part

Manual skills

Final processing of the permanent filling of various fill materials.

Purpose: To learn how to set and carry out the final processing of permanent fills.

Indications: To deliver and perform final processing of permanent fills.

Equipment: phantoms, drill, dental burs (diamond), dental equipment for filling, tracing paper, polishing pastes, brushes, rubber head.

The practical part

Manual skills

Opening the cavity of lateral incisor on phantoms.

Purpose: to learn to open the tooth cavity on phantoms.

Indications: Open the cavity in lateral incisor.

Equipment: phantom side cutters, drills, dental drills, dental tools for filling.

Step by step:

Nº	Steps manual skills (milestones)	Did not follow the	Completed phase	Completed all phases
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		steps	partially	of
1	Form a permanent seal with a diamond bur.	0	13	26
2	Using carbon paper define extra space fillings.	0	12	24
3	Surplus fillings removed carborundum stone or diamond bur. The seal should not restrict the movement of jaws and do not cause discomfort in the mouth.	0	13	26
4	Permanent filling polish polishing pastes with brushes or rubber heads.	0	12	24

7. Checks are used to assess students' knowledge:

- Oral answer
- Active participation in discussions
- Results of the written replies
- Solution of test problems

8. The evaluation criteria of the current control

№	Score	excellent	good	Satisfactory	d	bad
	Assimilation in%	100%-86%	85%-71%	70-55%	54%-37%	36% и ниже
1	The theoretical part	20-17,2	17-14,2 ball	14– 11 ball	10,8 -7,4 ball	7,2 ball

		ball				
2	Analytical part:	15-12,9	12,75-10,65	10,5-8,25	8,1-5,55	5,4
3	Organizer	15-12,9	12,75-10,65	10,5-8,25	8,1-5,55	5,4
4	Test	40-34,4-ball	34-28,4ball	28-22ball	21,6-14,8 ball	14,4 ball
5	The practical part	10-8,6	8,5-7,1	7,0-5,5	5,4-3,7	3,6 ball

Chronological Map of Exercise:

№	Step lessons	Type of activity	time min.	break
1.	Check	Notebook, the degree of participation of students Topic, purpose and objectives. Plan, references Introduction to the assessment criteria	5min. 5 min 5 min 5 min.	
2.	The theoretical part	Discussion, brainstorming business game "Web"	15 min. 15 min	5 min
3.	Analytical part	Tests and solving situational problems, drafting organizers, organizer Cluster Visual aids	20 min 15 min	
4.	The practical part	Conducting skills and conclude its work	20 min. 15 min	10 min
5	Total	Analysis of theoretical issues, assessment, homework and self-	10 min.	

		study	5 min	
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10. Test questions:

1. Amalgams, their composition, physical and chemical properties.
2. Positive and negative amalgams.
3. Indications and contraindications for use of amalgam.
4. The procedure for preparing and filling amalgams.
5. Room requirements, where applicable amalgam.
6. Amalgam based on gallium, its composition, physical and chemical properties.

Suggested Reading.

Summary

- 1 E. Borowski "Preventive dentistry" M. 1975
2. Magid EA, Mukhin NA Atlas of phantom course and dentistry Moscow, Medicine, 1987
3. Bohr EV "Preventive dentistry." - M., 2003
- 4 E. Borowski "Preventive dentistry." - Moscow, 1998

More

1. Petrikas AZ Operative and restorative dentistry. 1994g.-285s.
2. Chilikin V. The latest technology in aesthetic dentistry. - M.: SUE NIKIET 2001. -C. 53-59.
3. Nikolaev AI Tsepov LM Practical preventive dentistry. -2 Edition-MED press-inform, 2003.-with 59-291.

Practical lesson № 11

Topic: Filling materials based on composites. Classification, structure, properties, and indications.

Time: 135 min	The number of students :8-10
Type and form of lesson	practical training
<i>The structure of the training session</i>	<ol style="list-style-type: none"> 1. Introduction. 2. The theoretical part 3. Analytical part: <ul style="list-style-type: none"> - Cluster and organizer Tests and case studies 4. The practical part
<i>The aim of the activity:</i>	<ul style="list-style-type: none"> - To study the composition and properties of various types of composites -Examine the indications and contraindications to the use of composite fillings -Master the features of various classes of cavity preparation for composite -Learn tools for working with composites Master the finishing of composite fillings
<i>The student should know:</i>	<ul style="list-style-type: none"> -Composition and properties of composites - Show and contraindications to the use of composites - Features of cavity preparation for composite - Tools used for sealing composites
<i>The student should be able to:</i>	<ul style="list-style-type: none"> - Cavity preparation for composite - Mix the different types of composites - Fill cavities on phantoms composites -Hold finishing of composite fillings
<p><i>Task of the teacher:</i></p> <p><i>The general concept of filling materials for root canal</i></p> <ul style="list-style-type: none"> -to provide a classification of filling materials for root canal -give an idea of the pins -to provide knowledge on the principles of root canal -The main requirements for each step of sealing 	<p><i>Learning outcomes:</i></p> <ul style="list-style-type: none"> - Studied the composition and properties of various types of composites -examined the indications and contraindications for the use of composite fillings -mastered characteristics of different classes of cavity preparation for composites -examined the tools for working with composites Mastered the technique of finishing of composite fillings

<i>Training methods</i>	Lecture, brainstorming, story videomethod, workshops, working with books, dialogue, educational games, pinbord. organizer.
<i>forms of learning</i>	Group work ("Learning Together", "Work with me, thought"), single
<i>training tools</i>	Stand-board, flip chart, video, writing board, model, models, graphics, diagrams, charts, notes, checklist, texts.
<i>learning Environment</i>	Specially technologically equipped rooms.
<i>monitoring Evaluation</i>	Recitation: rapid test, writing topic test

"Restorative fillings root canals (pasta, PINS, cement)"

Flow chart of lesson

Phases and time lesson (135min)	Activity	
	Teachers	Students
1-part. 45 min 5 min 10 min 20 min 10 min	1.1. Checking notebooks and attendance 1.2 explained to the subject classes and the expected results. To introduce lesson plans. 1.3. Tell keywords, references to independent work (Section № .8) 1.5. To familiarize with the evaluation criteria during the occupation (section number 6) change	Listen and write. Determine, ask questions, Familiarize with the evaluation criteria
2 - stage. 45 min 10 min 10 min 15min	2.1. Quick Test / faq / knowledge strengthens brain Curtains 2.2. Explains the plan and structure of the practice session ("web" work and play) (section number 3)	Answer, write. Work in groups group perform

10 min	<p>2.4. Divide students into groups and are explained the rules of klassterom (section number 4)</p> <p>2.6. Give students visual aids to better capture (tests and case studies, models, products, software, phantoms), to give an idea of how to Use (section number 4)</p> <p>2.7. change</p>	group perform Presented by
<p>3 - phase. 45 min 20 min 5 min</p> <p>10 min 10 min</p>	<p>3.1. Perform skills (section number 5)</p> <p>3.3. Sums up the lesson, the analysis of the work and the students' attention is drawn to the fact that they used in the future work</p> <p>3.5. Evaluate the work groups, the level of training. Analysis of the checklist (section number 7)</p> <p>3.6. Given the task to stand alone and determine the criteria for their evaluation.</p>	<p>Perform skills</p> <p>Assess yourself, yourself and each other.</p> <p>Ask questions write job</p>

4. Motivation

Knowledge of the composition, properties, indications, methods of mixing, filling materials based composites is important in the prevention and treatment of dental disease. You must correctly choose tools for inspection and filling select the necessary filling material and leading further treatment. The resulting of theory knowledge and worked manual skills in the future will help the future specialist to successfully apply them in practice.

5. Intra and interdisciplinary communication

Teaching of the subject is based on the knowledge of students the basics of anatomy, physiology, and physics. Acquired during the course of knowledge will be used in the study of faculty and hospital dentistry, and other clinical disciplines.

6. The theoretical part

6.1 Lesson content

The predictors of the composites were quick-acrylic plastic, which appeared in the dental practice in 1939 and abroad since 1952 in our country. They had the ability

to cure at low temperatures (30-40 °) in a short period of time. Domestic representatives of them are -Norakril, Norakril-65. However, they gave a large shrinkage during polymerization and 20% had a high coefficient of thermal expansion, low mechanical strength, and low aesthetic properties. Later were developed materials based on epoxy <mol. They had a slightly better adhesion, less shrinkage. But did not have high clinical characteristics.

The next step was to create a product compound acryl and epoxy resin. The first time such a resin synthesized in 1958, Dr. Rafael L. Bowen. It was called Bis-GMA, short for biphenyl - Bis-GMA. Adding to this basis salinized quartz flour allowed Bowen in 1962 to get a new kind of seals – the gauge materials, i.e. composite materials.

According to the ISO (International Standards Organization) com – term deposits are made up of three components:

- An organic polymer matrix;
- Inorganic filler;
- Force, or surface-active agents.

1. An organic polymer matrix. Basis of its monomer. Most often it is Bis-GMA. There may be other monomers: UDMA uretandimetilmetakrilat; TEGDMA; dekandioldimetakrilat (DSEA). To the organic matrix introduced a number of additional components: a polymerization inhibitor (monometilefir hydroquinone) to increase the pot life of sealing test and retention of the material; catalyst is used to start, accelerate, enhance the process of polymerization (degidroetil toluidine accelerates polymerization curing composites, Camphorquinone activates photopolymerization) light-absorbing ultraviolet (gidroksimetoksi - benzofenaya) reduces the effect of sunlight on the color change of the material.

2. Inorganic filler - a particle of quartz, barium glass, porcelain, flour, silicon dioxide, zirconium. Particles gives the material mechanical strength, chemical resistance, reduced polymerization shrinkage and other positive properties. Depend on the particle size aesthetic properties.

3. Silanes, or surface-active substances - this silicone binders that improve the connection of the inorganic filler with an organic base, and formed a solid monolith.

Composite materials are classified according to: curing process (type of polymerization):

- Composites, curing;
- Light-cured composites, the amount of mineral filler:
- Macro filling - contain more than 75% by weight of the filler;
- Micro filled - contain at least 75% by weight of the filler; particle size of the inorganic filler:

- Macro filled or macro fills - particles - 1 - 100 microns;
- Micro filled or micro fills - particles - 0.005-0.05 microns;
- Hybrid - particles - 0,005-100 microns.

The shape of the particles can be spherical, spherical, comminuted.

1. Macro filled are macro fill materials (containing 75-80% of filler) and the materials are first generation. They have high mechanical strength and chemical resistance, good marginal integrity, satisfactory aesthetic properties. However, such seals are toxic, change color. Large particles create difficulty in achieving a smooth polished surface, which contributes to the accumulation on the surface of the seal food residue with dyes, microorganisms and leads to change the seal.

Therefore macro fills use when filling posterior teeth (1, 2, 5 classes for Blake). The group of macro-composite profiled include: Evicrol (Spofa dental), Concise (3M), Adaptic (Dentsply), Visio-Fil, Visio-Molar (Germany), Prisma-Fil (USA), Epakril, Folakor, Kompadent.

2. Micro fills are micro filled, because they contain 30-60% filler. They can be polished to a very smooth surface, but have a low strength. Therefore micro fill use when filling the front of teeth. The group micro filled composites include: Isopast (Vivadent), Degufill-M (Degussa), Degufill-SC (Degussa), Durafil (Kulzer), Helio Progress, Helio Molar (Vivadent), Silux Plus (3M). Variety micro fills inhomogeneous composites micro filled composites. For smaller particles down to 1 micron added pre polymerizations 20-30 microns containing mineral particles to 1 micron. Pre polymerization produced in industrial conditions. For this micro filled material containing an organic basis and mineral components is polymerized, then crushed and ground to a particle size of 20-30 microns. Thus, these materials also contain small particles and pre-polymerized particles of the same material. Seals of this material has good aesthetic properties, as compared with homogeneous micro fills they are more durable.

3. Hybrid (mixed) composites. The amount of filler usually 78-85% - ie are makronapólnennym materials. So they have good physical properties. As for aesthetics, it depends on the size of the particles. If the bulk of particles greater than 5 microns, the material is poorly polished and change color over time. If the composition of the hybrid composite consists of different particles do not bolee 2 microns, they have good aesthetic qualities. Such materials are called hybrid finely divided materials. They have universal application, that is, used to restore and frontal and posterior teeth (all classes in Black, enamel erosion, wedge-shaped defect, complete restoration of the crown of the tooth, etc.). For hybrid composites include: Valux plus, Z 100 (ZM), Prizma TPH (Dentsply), Herculite XRV (Kerr), Degufill - H (Degussa), Charisma (Kulzer), Tetric (Vivadent), Arabesc (Voco).

Modern composites largely correspond to the basic requirements for filling materials: a sufficient compressive strength and tensile strength, high hardness and abrasion resistance, small shrinkage, good adhesion, the coefficient of thermal expansion close to the coefficient of thermal expansion of dental hard tissues, low thermal conductivity, low water absorption, chemical resistance to oral fluid, has no toxic effect on the tooth, the mucosa, the whole body, high aesthetic properties (color, transparency, luster, color stability, good marginal adaptation) ease of use, versatility.

To the domestic first-generation composites include:

- Akriloksid,
- Norakril-100,
- Karbodont.

Akriloksid is based on acrylated epoxy resin contains 10% mineral filler. This material is curing. Is available in liquid and powder set of three colors. Flexible, has good adhesion, relatively durable, easy to polish. It is used for sealing all types of cavities, with deep caries requires applying an insulating pad. Mixing materials is carried out in a special glass cup (cup), which makes a few drops of liquid. Then gradually add the powder to saturation. Mass introduced into the cavity formed within 1.5 - 2 minutes. Hardens in 8-10 minutes.

Norakril-100. Created later akriloksida contains 80% mineral filler. But it is poorly polished, had a poor aesthetic properties, so, received the widespread practice.

Karbodont contains 40% filler. Produced powder 6 colors and fluid. Knead well in the crucible, but first make a powder, then the liquid to saturation and stirred. Make two portions. First rubbing the sides and bottom of the cavity, then fill the cavity of the second portion. Compared with akriloksidom tsvetostoeck, more durable, easy to polish. Adhesion it higher but not strong enough. Material shrinks, toxic. Applies to all groups of teeth. But requires applying an insulating pad.

Advanced composites, curing consist of two pastes or powder and liquid. They include polymerization initiators in different parts of the material - in liquid and powder, two pastas. When mixing these substances combine and form free radicals. They are joined by other molecules of the monomer and polymer is formed. Polymerization rate depends on the number of inhibitors, activators, form filler, temperature and humidity.

Stages of curing composites:

1. Professional dental hygiene - the careful arrangement of the tooth surface, the removal of plaque, soft plaque.
2. Selection of the desired shade of filling material.
3. Anesthesia.
4. Preparation of cavities.

5. Drug treatment of cavities.
6. Drying and degreasing cavity after isolation from saliva.
7. Imposition of an insulating spacer in average caries, treatment and isolation pads with deep caries.
8. Etched enamel. 37-50% gel applied ortho-phosphoric acid. 30-40 with it thoroughly rinsed off. Etching time equals time flushing.
9. Drying the cavity air jet gun.
10. Application of enamel adhesive (if it is included). Applied with a brush, spread a stream of air.
11. Filling. Filling material is introduced in one portion. Seal is formed (Fig. 66).
12. Grinding and polishing of fillings.
13. Fluoride varnish coating of the tooth.

Representatives of curing composites.

materials that have appeared in our country (Czech Republic). Produced a set of powder-liquid etching solution. Powder 4 colors. He has good physical and chemical properties, good adhesion, minimally soluble, strong (similar to amalgam). It has good aesthetic qualities, is transparent, the color is close to the enamel. But, since it refers to makronaplnennym makrofilam, bad ground and polished, so the seal changes color. Designed to seal all classes cavities Black.

Konsayz (USA). Composite type "paste-paste" for filling cavities 3 and 5 classes and limited use when filling 1 and 4 classes. The set includes two pastas, two bottle adhesives (adhesive - adhesive and polymer-liquid), a gel for etching.

Epakril. Is available in two types. 1. The kit includes: powder, liquid, pickling liquid adhesive sublayer. 2. Epakril like "paste-paste." Their basic physical and mechanical characteristics approaching evikrolu. Indications for use, all classes of cavities by Black.

Prism. Hybrid composite type "paste-paste." A pasta-core, the other catalyst. When mixed in equal quantities of the polymerization. The kit also includes a gel for etching enamel and adhesive. Indications for use: 3, 4, 5 classes in Black.

Komponent. A composite of the "paste-paste." Includes basic and catalyst paste, set adhesives, Etchant gel. Indications to the use of: filling cavities 5 classes.

Talan. Hybrid composite "paste-paste." It consists of a core (three colors) and catalytic pastes, pickling gel adhesive. Designed to seal all classes Black.

The analytical part of
Conducting interktivnoy game

Envelopes group provide 5-6 questions from which students draw out one. Then take a clean sheet of paper and on it is written question. Students clockwise transfer sheet to each other and everyone writes one sentence (answer to question) adding to

previous answers students. After a time the teacher checks the answers and, according to the rating system evaluates the response of each student.

Criterion for evaluating the theoretical part

Maximal score 20-17,2 score	17-14,2 score	14- 11 score	10,8 -7,4score	7,2score
Fine	good	Average	Dissatisfaction	poorly
100-86%	85-71%	70-55%	54-37%	36% and lower

The analytical part

Conducting of interactive game

In the group of envelopes provide 5-6 questions from which students pull one. Then taking a clean sheet of paper and on it is written question. Students clockwise transfer sheet to each other and each wrote one sentence (answer to question) adding to the previous answers students. At the expiration of the time the teacher checks the answers and, according to the rating system evaluates the response of each student.

Sample questions:

1. Positive properties of composite filling materials?
2. Negative properties of composite filling materials?
3. What is restoration?
4. Classification of composite materials?
5. Steps dental fillings with evicrol?

Situational problems

1. In the treatment of secondary caries 16 after preparation and drug treatment cavity is sealed prism. Find errors in treatment. What are the possible complications?

2. Patient treated average caries tooth 11. As the plumbing material used evikrol. A year after the treatment she complained about darkening of the filling. Why of darkening filling happened?

For filling deep cavity 35 on the glass prepared filling mass of acrilacid. Conducted drug treatment. Trowel portions made acrilacid. Breached a cooking technique and method of sealing.

Criterion for evaluating the analytical part

Mak.ball.-15 fine	good	satisfactorily	Dissatisfaction	poorly
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15-12,9	12,75- 10,65	10,5-8,25	8,1-5,55	5,4 and lower
100% - 86%	85% - 71%	70-55%	54% -37%	36% and lower

Tests

1. Absolute contraindications for the direct RESTORATION is:

- A patient allergic to components of the seal *
- B. inability to isolate a cavity or a tooth from moisture. *
- V. combination pathological abrasion of teeth and bite
- G. bruxism
- D. deliberate failure to comply with the patient oral hygiene
- E. fillings in patients younger than 12 years

2. Relative contraindication for the direct restoration of teeth is:

- A patient allergic to components of the seal
- B. inability to isolate a cavity or a tooth from moisture
- V. combination pathological abrasion of teeth and bite *
- G. bruxism *
- D. deliberate failure to comply with the patient oral hygiene *

3. Light-curing composites disadvantages:

- A time-consuming process of sealing from these materials. *
- B. allow in sealing combine different colors.
- C. allow more time to simulate the seal.
- D. Over the cost of photopolymer fillings. *
- E. requires the use of safety devices. *

4. Positive properties makronapolnyh composites

- A sufficient strength *
- B. acceptable optical properties *
- C. radiopacity *
- D. no dry shine.
- E. poor color fastness.

5. Negative properties makronapolnyh composites

- A sufficient strength
- B. acceptable optical properties
- C. radiopacity
- D. pronounced accumulation of plaque. *
- E. poor color fastness *
- F. high roughness *

6. Indications for use makronapolnennyh composites

- A filling of cavities 1 class. *
- B. filling cavities 5 class in chewing teeth. *
- C. fixing crowns
- D. isolation pads.
- E. modeling tooth stump for a crown *
- F. as a medical pad.

7. Positive properties microfilled composites

- A good polishing *
- B. resistance glossy surface *
- C. insufficient mechanical strength
- D. The high coefficient of thermal expansion
- E. high color fastness *
- F. low abrasion. *

8. Indications for use microfilled composites

- A filling cavities 3 class. *
- B. filling cavities 1 class.
- C. filling cavities 2 class.
- D. filling cavities 5 class. *
- E. filling cavities 4 classes. *
- F. modeling tooth stump for a crown

9. Positive properties of hybrid composites

- A. acceptable aesthetic properties. *
- B. sufficient strength *
- C. radiopacity *
- D. is not a perfect surface quality
- E. expensiveness

10. Indications for use of micro-hybrid composites

- A. isolation pads.
- B. modeling tooth stump for a crown
- C. repair (restoration) chipped porcelain veneers *
- D. sealing all cavity klarssov. *
- E. production of veneers *

11. By microhybrid composites are:

- A. filteks *
- B. arabesque *
- C. prizmafil
- D. kompolyuks
- E. gerkulayt *

F. evikrol

12. Indications for use of condensable (Packable) composites

A sealing 1, 2 classes for Black *

B. filling grade 5 on Black *

C. canal filling.

D. filling baby teeth *

E. sealing three-class Black.

F. filling class 4 in Black.

Criterion of evaluation tests:

Mak.ball.-15 fine	good	average	dissatisfaction	poorly
15-12,9	12,75- 10,65	10,5-8,25	8,1-5,55	5,4 and lower
100% - 86%	85% -71%	70-55%	54% -37%	36% and lower

Practice part.

Manual skills. *Filling of cavities composite filling materials.*

Purpose: To learn to put the permanent filling of composite filling material on phantoms.

Indications: Put a permanent seal of the composite filling material.

Instruments: phantoms, drill, dental drills, dental tools for sealing, cotton rolls, tracing paper, polishing pastes, brushes, rubber head, phosphate cements, composite filling materials.

№	Steps manual skills (milestones)	Do not follow the steps	Completed all phases of	Steps manual skills (milestones)
1.	Formed a cavity treated with medication.	0	4	8
2.	dry	0	4	8
3.	Isolated from saliva.	0	4	8
4.	Put the right insulating gasket.	0	5	10
5.	A cavity for 1 minute poison 30% solution of phosphoric acid, which must be applied to	0	5	10

	the enamel with wet cotton swab or brush.			
6.	The cavity was washed with water.	0	5	10
7.	Drain.	0	4	8
8.	Choose the color of the seal on a scale of colors.	0	5	10
9.	At a special notebook plastic spatula mix the paste with a base catalyst.	0	5	10
10.	Ready to make a lot of the cavity with a small surplus, simulate filling in for 1 minute.	0	4	8
11.	Final processing to produce seals in 3 minutes.	0	5	10

7. Checks are used to assess students' knowledge:

- Oral answer
- Active participation in discussions
- Results of the written replies
- Solution of test problems

8. The evaluation criteria of the current control

№	Score	excellent	good	Satisfactory	d ssatisfaction	bad
	Assimilation in%	100%-86%	85%-71%	70-55%	54%-37%	36% и ниже
1	The theoretical part	20-17,2 ball	17-14,2 ball	14– 11 ball	10,8 -7,4 ball	7,2 ball
2	Analytical part:	15-12,9	12,75- 10,65	10,5-8,25	8,1-5,55	5,4
3	Organizer	15-12,9	12,75- 10,65	10,5-8,25	8,1-5,55	5,4
4	Test	40-34,4-ball	34- 28,4ball	28-22ball	21,6-14,8 ball	14,4 ball
5	The practical part	10-8,6	8,5-7,1	7,0-5,5	5,4-3,7	3,6 ball

Chronological Map of Exercise:

№	Step lessons	Type of activity	time min.	break
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1. Check	Notebook, the degree of participation of students Topic, purpose and objectives. Plan, references Introduction to the assessment criteria	5min. 5 min 5 min 5 min.	
2. The theoretical part	Discussion, brainstorming business game "Web"	15 min. 15 min	5 min
3. Analytical part	Tests and solving situational problems, drafting organizers, organizer Cluster Visual aids	20 min 15 min	
4. The practical part	Conducting skills and conclude its work	20 min. 15 min	10 min
5 Total	Analysis of theoretical issues, assessment, homework and self-study	10 min. 5 min	

Test questions:

1. Notion of composite filling materials.
2. Main components of composite filling materials.
3. composite filling materials.
4. Physico-chemical properties of the composites.
5. Instruction to the use of composites.
6. Modern curing composites.
7. Methodic of preparation and filling of composite curing.

Suggested Reading.

Summary

- 1 E. Borowski "Preventive dentistry" M. 1975
2. Magid EA, Mukhin NA Atlas of phantom course and dentistry Moscow, Medicine, 1987
3. Bohr EV "Preventive dentistry." - M., 2003
- 4 E. Borowski "Preventive dentistry." - Moscow, 1998

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1. Petrikas AZ Operative and restorative dentistry. 1994g.-285s.
2. Chilikin V.. The latest technology in aesthetic dentistry. - M.: SUE NIKIET 2001 .. -C. 53-59.

3.Nikolaev AI Tsepov LM Practical preventive dentistry. -2 Edition-MED press-inform, 2003.-with 59-291.

Practical lesson № 12

Theme: THE PROCEDURE FOR PREPARING AND FILLING THE CAVITIES OF VARIOUS CLASSES WITH COMPOSITES. FINISHING OF THE FILLING.

Time: 135 min	The number of students :8-10
Type and form of lesson	practical training
<i>The structure of the training session</i>	<ol style="list-style-type: none"> 1. Introduction. 2. The theoretical part 3. Analytical part: <ul style="list-style-type: none"> - Cluster and organizer Tests and case studies 4. The practical part
<i>The aim of the activity:</i>	<ul style="list-style-type: none"> - To study the composition and properties of the various types of composites -learn the indications and contraindications to the use of filling of composites -to master the features of the preparation of the cavities of various classes under composites -explore the tools for working with composite. Learn the methods of finishing of the fillings of composites
<i>The student should know:</i>	<ul style="list-style-type: none"> -Structure and properties of composites - Indications and contraindications to the use of composites - Features of preparation of the cavities under the composites - Tools used for filling of composite

<i>The student should be able to:</i>	<ul style="list-style-type: none"> - prepare cavity for composite filling materials - mix the different types of composites - filling the carious cavities in the phantoms with composites -To carry out the final finishing of the fillings of composites
<p><i>Task of the teacher:</i> <i>The general concept of filling materials for root canal</i> <i>-to provide a classification of filling materials for root canal</i> <i>-give an idea of the pins</i> <i>-to provide knowledge on the principles of root canal</i> <i>-The main requirements for each step of sealing</i></p>	<p><i>Learning outcomes:</i> <i>students can</i></p> <p><i>dissect the cavity under the composite filling materials</i></p> <ul style="list-style-type: none"> - Mix the different types of composites - Fill cavities on phantoms compositescarry -finish trim composite fillings
<i>Training methods</i>	Lecture, brainstorming, story videomethod, workshops, working with books, dialogue, educational games, pinbord. organizer.
<i>forms of learning</i>	Group work ("Learning Together", "Work with me, thought"), single
<i>training tools</i>	Stand-board, flip chart, video, writing board, model, models, graphics, diagrams, charts, notes, checklist, texts.
<i>learning Environment</i>	Specially technologically equipped rooms.
<i>monitoring Evaluation</i>	Recitation: rapid test, writing topic test

"Restorative fillings root canals (pasta, PINS, cement)"

Flow chart of lesson

Phases and time lesson (135min)	Activity	
	Teachers	Students
1-part. 45 min 5 min 10 min 20 min 10 min	1.1. Checking notebooks and attendance 1.2 explained to the subject classes and the expected results. To introduce lesson plans. 1.3. Tell keywords, references to independent work (Section № .8) 1.5. To familiarize with the evaluation criteria during the occupation (section number 6) change	Listen and write. Determine, ask questions, Familiarize with the evaluation criteria

<p>2 - stage. 45 min 10 min</p> <p>10 min 15min</p> <p>10 min</p>	<p>2.1. Quick Test / faq / knowledge strengthens brain Curtains</p> <p>2.2. Explains the plan and structure of the practice session ("web" work and play) (section number 3)</p> <p>2.4. Divide students into groups and are explained the rules of klassterom (section number 4)</p> <p>2.6. Give students visual aids to better capture (tests and case studies, models, products, software, phantoms), to give an idea of how to Use (section number 4)</p> <p>2.7. change</p>	<p>Answer, write.</p> <p>Work in groups</p> <p>group perform</p> <p>group perform</p> <p>Presented by</p>
<p>3 - phase. 45 min 20 min 5 min</p> <p>10 min 10 min</p>	<p>3.1. Perform skills (section number 5)</p> <p>3.3. Sums up the lesson, the analysis of the work and the students' attention is drawn to the fact that they used in the future work</p> <p>3.5. Evaluate the work groups, the level of training. Analysis of the checklist (section number 7)</p> <p>3.6. Given the task to stand alone and determine the criteria for their evaluation.</p>	<p>Perform skills</p> <p>Assess yourself, yourself and each other.</p> <p>Ask questions write job</p>

4. Motivation

It is important to know the composition, properties, indication to the application, the methods of mixing filling materials on the basis of composites in the prevention and treatment of diseases of the teeth. It is necessary to make the right choice of instruments for inspection and filling, select the required filling material and perform the treatment. The obtained volume of theoretical knowledge and fulfilled manual skills in future will help future specialist successfully apply them in practice.

5. Intersubject and the intra-subject communications

The teaching of this topic is based on the knowledge of the students of the fundamentals of anatomy and physiology. Obtained knowledge in the course of the classes will be used in the study of the phantom course, faculty and hospital therapeutic dentistry, as well as in other clinical disciplines.

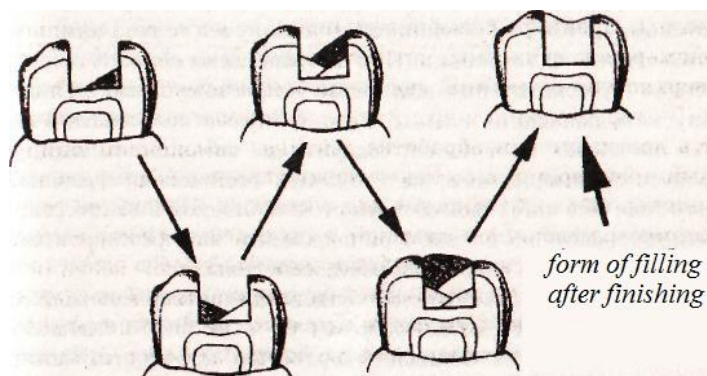
6. Contents of classes

The theoretical part:

Steps of the work with light curing composites:

1. Professional hygiene of the oral cavity.
2. The selection of the desired shade of filling material. The color is defined in the daylight, the tooth should be moistened.
3. Anesthesia.
4. Preparation of carious cavity.
5. Medicament treatment of the oral cavity.
6. Drying.
7. The imposition of an insulating gaskets. This stage is performed with the use of helio composites, not containing dentin adhesives. In close proximity of pulp, calcium hydroxide contains medical gasket should be imposed.
8. Etching. There are 2 options: 1) etching only enamel and 2) total etching of the wall of the bottom of carious cavity. The etching rate of 40 seconds for enamel and 20 seconds for the dentin.
9. Wash the etching gel. Done with water, the washing away time is the same with the etching time.
10. Drying with air. Enamel is dried carefully, and drying again of dentin is unacceptable.
11. Entering of a primer. It is applied with a brush on the natural humidified dentin, distributed and dehumidified with air.
12. Coating with adhesive. It is applied with a brush. Distributed by airstream, polymerized with lamp.

13. Setting the filling. Applied level-by-level, thickness 1, 5-2 mm, not more. E a c h l a y e r l i g h t e n e d 4 0 s e c o n d s .



14. Grinding, polishing of fillings.
15. Coverage of the tooth with fluorine gel.

While working with photopolymers some rules should be observed: the materials must be kept at a temperature of not higher than 20 C, if stored in the refrigerator service life of the material increases. Before the beginning of work the material must reach room temperature (24 degrees-operating temperature). It is required to protect photocomposites from the action of sunlight and the light of the dental setting. While drying of the cavity the air should not contain moisture or oil. After drying, the entry of saliva is not allowed. It is inadmissible to use as a filling materials which contains eugenol, this disturbs the process of polymerization; do not allow the contact of anti-etching gel or adhesives with mucous membranes of the oral cavity, skin, the eye. In case of ingestion of these solutions, wash off with water, the gel wash off with water or soda solution.

Фолакор-С. The first domestic light curing composite material. Contains 80% of ground aluminoboro-silicate glass. It has properties: hardness, strength, low water absorption, and radio-opacity. Produced in 3 colors: light, universal and dark. The kit includes: paste in syringes, adhesive sub layers, and gel for etching. It is intended to fill cavities of 3rd, 4th, 5th classes, sometimes, if a minor chewing load, 1st and 2nd class.

Компадент-С. A similar compositional light curing material.

Призмафил - composite particles of the filler 2,8-3,2 mm, fullness - 76%. The kit contains 7 lightproof syringes, enamel adhesive, gels for enamel etching. It is intended for filling of the III-V classes. It is color-stable, can be well polished.

Унирест - hybrid composites with particles of the filler 1 micron, fullness - 79%. The kit contains a lightproof syringe 7 colors and clear cutting edge, primer-adhesive gel for enamel etching. It is intended for filling of the I-V classes. The fillings are color-stable, well-polished, perfectly imitates the tissue of teeth.

Durafil VS (Kulzer). It refers to the micro-filled microfills. It consists of highly-dispersed silicon oxide (average size of particle is 0.04 mm) and a multifunctional meth acrylic acid. The set includes 10 syringes with pastes of different shades, bonding system, gel etching. Indications for use: filling cavities 3rd, 4th, 5th class, non-carious defects, building broken teeth crowns, closing diastemata, color restoration of pulp less teeth, splinting mobile teeth.

Charisma (Kulzer, Germany). It refers to the micro fine hybrid materials. Contains micro glass, the size of particles of 0.7 microns. The kit includes 14 syringes with pastes of various shades. Gel for treatment, primer, dentine adhesive, bond. Charisma has a high strength, wear-resistance, good aesthetic qualities, adapted to the natural color of the teeth. It is used for filling all groups of teeth.

Herculite XRV (Kerr, USA). Microfine hybrid photo composite. It contains micro glass, particle size-0.6 microns. Set contains 16 colors for enamel and 16 - for the dentin. There is a gel for treatment, primer, and bond. Hercules is plastic, easily processed, durable, and wear-resistant and has excellent aesthetic qualities, color stable. Wide range of colors allows you to select natural color. Heraclites - multi-purpose filling material. It is used for filling of all groups of teeth, non-carious defects. It can be used for making tabs and repair of porcelain crowns.

Compomers - new materials, which combines properties of hybrid composite and glassionomer cement. To form a chemical bond with the tissues of the tooth. It is biologically characterized compatible with tissues of the tooth. Contains fluoride that enters the enamel. Direct AP (DENTSPLY). Designed to recover all cavity classes offrontandsideteeth.

New generation of restoration materials - ormokers (Organically Modified Ceramics). The matrix is composed of chains nonorganic molecules polyoxican, the main structural elements of ceramics, connected with organic group. Definite (Degussa) biologically compatible to the tooth, has a low polymerization, caries-resistant (containing fluorine-Patita), mechanically strong and highly aesthetic.

Criterion for evaluating the theoretical part

Maximal score	17-14,2 score	14– 11 score	10,8 -7,4score	7,2score
20-17,2 score				
Fine	good	Average	Dissatisfaction	poorly
100-86%	85-71%	70-55%	54-37%	36% and lower

New pedagogical technologies are used in this lesson: the game «ROUND TABLE»

The methodology of conducting business games

THE«ROUND TABLE»

In envelopes group provide 5-6 questions, of which the students pull one. Then take a blank sheet of paper, and on it writes question. Students clockwise transmit sheet to each other and everyone writes one sentence (answer the question) adding to the answers of the previous students. At the expiration of the time the teacher checks the answers according to the rating system evaluates the response of each student.

Sample questions:

1. Positive and negative properties of composite filling materials?
2. Properties of composite filling materials?

3. What is restoration?
4. Classification of composite materials?
5. Steps of filling teeth with composites?

Situational

problems

1. 46 fillings done over medium caries. After making the primer and adhesive, made light-cured material in one shot and lit the lamp. Find those mistakes when filling.
2. The treatment of deep caries 33. Conducted preparing, antiseptic of cavity. Made adhesive, filling material layers, each layer lightened. Any mistakes in the filling?
3. Photopolymer 11 is filled in compliance with all rules. Anatomical shape is restored. Grinding and polishing of fillings postponed until the next doctor visits after a day. Patient did not come on readmission. What are the errors and possible complications?

Criterion for evaluating the analytical part

Mak.ball.-15 fine	good	satisfactorily	Dissatisfaction	poorly
15-12,9	12,75-10,65	10,5-8,25	8,1-5,55	5,4 and lower
100% - 86%	85% -71%	70-55%	54% -37%	36% and lower

Tests

1. For macro-filled composites are:

A. evikrol *

B. konsayz

B. silidont

G. silitsin

D. akriloksid

E. prizmafil *

2. The hybrid composites are:

A. gerkulayt *

B. evikrol

B. norokril

G. phosphate cement

D. silidont

E. charisma *

3. For macro-filled composites are:

A. silidont

B. konsayz

B. evikrol *

G. silitsin

D. akriloksid

E. prizmafil *

4. The hybrid composites are:

A. norakril

B. evikrol

B. gerkulayt *

G. phosphate cement

D. silidont

E. charisma *

5. For macro-filled composites are:

A. evikrol *

B. konsayz

B. silidont

G. silitsin

D. akriloksid

E. prizmafil *

6. The hybrid composites are:

A. gerkulayt *

B. evikrol

B. norokril

G. phosphate cement

D. silidont

E. charisma *

7. For macro-filled composites are:

A. silidont

B. konsayz

B. evikrol *

G. silitsin

D. akriloksid

E. prizmafil *

8. The hybrid composites are:

A. norakril

B. evikrol

B. gerkulayt *

G. phosphate cement

D. silidont

E. charisma *

9. Positive macro properties of filling composites

A sufficient strength *

B. acceptable optical properties *

B. radiopacity *

G. no dry shine.

D. poor color fastness.

10. Negative properties macro filled composites:

A sufficient strength

B. acceptable optical properties

B. radiopacity

G. pronounced accumulation of plaque. *

D. poor color fastness *

E. high roughness *

11. Indications for use of macro-filled composites

A filling of cavities 1 class. *

B. filling cavities 5 class in chewing teeth. *

B. fixing crowns

G. isolation pads.

D. modeling tooth stump for a crown *

E. as a medical pad.

12 .. Positive properties of micro-filled composites

A good polishing *

B. resistance glossy surface *

B. insufficient mechanical strength

, The high coefficient of thermal expansion

D. high color fastness *

E. low abrasion.*

13. Indications for use microfilled composites

A filling cavities 3 class. *

B. filling cavities 1 class.

B. filling cavities 2 class.

G. filling cavities 5 class. *

D. filling cavities 4 classes. *

E. modeling tooth stump for a crown

14. Positive properties of hybrid composites

A. acceptable aesthetic properties. *

B. sufficient strength *

B. radiopacity *

G. is not a perfect surface quality

D. expensiveness

15. Indications for use of micro-hybrid composites

A. isolation pads.

B. modeling tooth stump for a crown

B. repair (restoration) chipped porcelain veneers *

G. sealing all cavity klarssov. *

D. production of veneers *

16. By microhybrid composites are:

A. filteks *

B. arabesque *

B. prizmafil

G. kompolyuks

D. gerkulayt *

E. evikrol.

17. Indications for use of condensable (Packable) composites

A sealing 1, 2 classes for Black *

B. filling grade 5 on Black *

B. canal filling.

G. filling baby teeth *

D. sealing three-class Black.

E. filling class 4 in Black.

Criterion of evaluation tests:

Mak.ball.-15 fine	good	average	dissatisfaction	poorly
15-12,9	12,75-10,65	10,5-8,25	8,1-5,55	5,4 and lower
100% - 86%	85% -71%	70-55%	54% -37%	36% and lower

The practical part
MANUAL SKILLS

Conducting basic steps restorations on phantoms.

Purpose: To learn to restore teeth on phantoms.

Indications: To restore teeth on phantoms.

Equipment: phantoms, drill, dental drills, dental tools for filling, cotton rolls, tracing paper, polishing pastes, brushes, rubber head, phosphate cements, composite filling materials

№	Manual skills stepsnumber	Did not complete phase	Completed phase partially	Completed all phases
1.	Conduct preparation of cavity	0	5	10
2.	Conduct pharmacological treatment of cavities	0	5	10
3.	Determine the color of the tooth	0	5	10
4.	Impose medical pad	0	5	10
5.	Impose an insulating pad	0	5	10
6.	Conduct etching tooth tissue	0	5	10
7.	Apply adhesive and do polymerization	0	5	10
8.	Layer wise permanent filling and do polymerization	0	5	10
9.	Restore the anatomical shape of the tooth	0	5	10
10.	Conduct finalized filling	0	5	10

7. Types of control used to assess students' knowledge:

- Oral answer
- Active participation in discussions

- Solution of test problems
-demonstration of basic practical skills

8. The evaluation criteria of the current control

№	Score	excellent	good	Satisfactory	dssatisfaction	bad
	Assimilation in%	100%-86%	85%-71%	70-55%	54%-37%	36% и ниже
1	The theoretical part	20-17,2 ball	17-14,2 ball	14– 11 ball	10,8 -7,4 ball	7,2 ball
2	Analytical part:	15-12,9	12,75-10,65	10,5-8,25	8,1-5,55	5,4
3	Organizer	15-12,9	12,75-10,65	10,5-8,25	8,1-5,55	5,4
4	Test	40-34,4-ball	34-28,4ball	28-22ball	21,6-14,8 ball	14,4 ball
5	The practical part	10-8,6	8,5-7,1	7,0-5,5	5,4-3,7	3,6 ball

Chronological Map of Exercise:

№	Step lessons	Type of activity	time min.	break
1.	Check	Notebook, the degree of participation of students Topic, purpose and objectives. Plan, references Introduction to the assessment criteria	5min. 5 min 5 min 5 min.	
2.	The theoretical part	Discussion, brainstorming business game "Web"	15 min. 15 min	5 min
3.	Analytical part	Tests and solving situational problems, drafting organizers, organizer Cluster Visual aids	20 min 15 min	
4.	The practical part	Conducting skills and conclude its work	20 min. 15 min	10 min

5	Total	Analysis of theoretical issues, assessment, homework and self-study	10 min. 5 min	
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Questions:

1. What is a composite?
2. Call curing filling materials?
3. Name the materials light-cured?
4. The advantage of composite filling materials?
5. List composites curing?
6. List the light-cured composite materials?
7. What are the stages of the process is to prepare cavity filling composites?
8. When the final process is carried with composite fillings?
9. What is etched enamel? Why and how it is performed?
10. What tools and materials are used for the finishing of composite fillings?

Suggested Reading.

Summary

- 1 E. Borowski "Preventive dentistry" M. 1975
2. Magid EA, Mukhin NA Atlas of phantom course and dentistry Moscow, Medicine, 1987
3. Bohr EV "Preventive dentistry." - M., 2003
- 4 E. Borowski "Preventive dentistry." - Moscow, 1998

More

1. Petrikas AZ Operative and restorative dentistry. 1994g.-285s.

2. Chilikin V. The latest technology in aesthetic dentistry. - M.: SUE NIKIET 2001. -C. 53-59.

3. Nikolaev AI Tsepov LM Practical preventive dentistry. -2 Edition-MED press-inform, 2003.-with 59-291.

Practice session № 13

Topic: "Endodontics. Topographic and anatomical cavities of various groups of teeth. "

Time: 135 min	The number of students :8-10
Type and form of lesson	practical training
<i>The structure of the training session</i>	<ol style="list-style-type: none"> 1. Introduction. 2. The theoretical part 3. Analytical part: <ul style="list-style-type: none"> - Cluster and organizer Tests and case studies 4. The practical part
<i>The aim of the activity:</i>	<ul style="list-style-type: none"> -to give the concept of endodontics - Explore the topographic anatomy of the different groups of dental cavities -demonstrate how to clarify the indications for endodontic instruments -learn the characteristics of each endodontic instrument
<i>The student should know:</i>	<ul style="list-style-type: none"> - That is studying endodontics - In which the tooth held endodontic intervention anatomical structure of various groups of teeth <ul style="list-style-type: none"> - Topographic anatomy of the different groups of dental cavities
<i>The student should be able to:</i>	<ul style="list-style-type: none"> -pick up for the opening of the oral drills opening of the cavity-cutters - Opening of the cavity canines

<p><i>Task of the teacher:</i> <i>The general concept of filling materials for root canal</i> <i>-to provide a classification of filling materials for root canal</i> <i>-give an idea of the pins</i> <i>-to provide knowledge on the principles of root canal</i> <i>-The main requirements for each step of sealing</i></p>	<p><i>Learning outcomes:</i> <i>student will be able</i> <i>pick up drills for the opening of the cavity</i> <i>open-cavity cutters</i> <i>- To open the cavity of canines</i> <i>- To open the cavity of the premolars</i> <i>- To open the oral molars</i></p>
<i>Training methods</i>	Lecture, brainstorming, story videomethod, workshops, working with books, dialogue, educational games, pinbord. organizer.
<i>forms of learning</i>	Group work ("Learning Together", "Work with me, thought"), single
<i>training tools</i>	Stand-board, flip chart, video, writing board, model, models, graphics, diagrams, charts, notes, checklist, texts.
<i>learning Environment</i>	Specially technologically equipped rooms.
<i>monitoring Evaluation</i>	Recitation: rapid test, writing topic test

"Restorative fillings root canals (pasta, PINS, cement)"

Flow chart of lesson

Phases and time lesson (135min)	Activity	
	Teachers	Students
1-part. 45 min 5 min 10 min 20 min 10 min	1.1. Checking notebooks and attendance 1.2 explained to the subject classes and the expected results. To introduce lesson plans. 1.3. Tell keywords, references to independent work (Section № .8) 1.5. To familiarize with the evaluation criteria during the occupation (section number 6) change	Listen and write. Determine, ask questions, Familiarize with the evaluation criteria
2 - stage. 45 min 10 min	2.1. Quick Test / faq / knowledge strengthens brain Curtains	Answer, write. Work in groups

10 min 15min 10 min	2.2. Explains the plan and structure of the practice session ("web" work and play) (section number 3) 2.4. Divide students into groups and are explained the rules of klassterom (section number 4) 2.6. Give students visual aids to better capture (tests and case studies, models, products, software, phantoms), to give an idea of how to Use (section number 4) 2.7. change	group perform group perform Presented by
3 - phase. 45 min 20 min 5 min 10 min 10 min	3.1. Perform skills (section number 5) 3.3. Sums up the lesson, the analysis of the work and the students' attention is drawn to the fact that they used in the future work 3.5. Evaluate the work groups, the level of training. Analysis of the checklist (section number 7) 3.6. Given the task to stand alone and determine the criteria for their evaluation.	Perform skills Assess yourself, yourself and each other. Ask questions write job

4. Motivation

Knowledge of concepts endodontics, topographic anatomy of the oral teeth of different groups is important in the treatment of diseases of the teeth. You must correctly choose tools for inspection and sealing select the desired root canal filling material to conduct intervention to take place in the future treatment. The resulting body of theory and routine manual skills in the future will help the future specialist to successfully apply them in practice.

5. Intra and interdisciplinary communication

Teaching of the subject is based on the knowledge of students the basics of anatomy, physiology. Acquired during the course knowledge will be used in the study of the phantom of the course, the faculty and hospital dentistry, and other clinical disciplines.

6. The course is taught

6.1 The theoretical part

Upper central incisor teeth. The crown has a chisel shape, flattened in the vestibular-oral direction. Vestibular surface is convex. Along the middle line has a

roller. Palatal labial surface is slightly concave, has the shape of a triangle. On the palatal surface of a small hillock, which runs the sides, reaching to the cutting edge. The recently erupted incisors at the cutting edge 3 pronounced hump, of which the median above. With age, they are deleted. Contact surfaces - medial and lateral - and also have the id of the triangle with the base of the neck and the top of the cutting edge. The medial surface is longer goes to the cutting edge at right angles. The root of one, straight, slightly flattened in the mediolateral direction. The lateral surface of the root of a convex, with a shallow longitudinal groove. Root laterally deflected from the vertical axis, the transverse sawing oval shape, with the largest diameter in the mediolateral direction. Criteria for membership are expressed well.

Maxillary lateral incisor lower central incisor. Chisel-shaped crown at the cutting edge of newly erupted tooth 3 hump. Vestibular surface pypuklaya. The lingual surface is concave. Side bolsters converge in the cervical region, forming a triangle, which is formed Pershin recess (blind fossa). The root is shorter than that of the central incisor, is flattened in mediolateral direction. On the sides of the longitudinal grooves are defined. The lateral surface of a convex. On cross-sawing root has the form of an oval. Lateral incisor has all three well-defined feature.

Central incisor of the lower jaw. The smallest tooth. Crown chisel, narrow, high. Labial surface is slightly convex, concave lingual, with little of the expressions side enamel paint roller. At the cutting edge 3 small tubercles. Medial and lateral angles crowns differ little from each other. Tubercles on the vestibular surface of cutting edge corresponds to a small longitudinal enamel ridges. The root of the relatively short and thin. Flattened in the mediolateral direction, along the root has grooves. The lateral groove is better expressed than the medial. On cross-sawing has an elongated oval. Criteria for membership are not pronounced.

Lateral incisor of the lower jaw is larger central. Chisel-shaped crown, convex labial surface of the crown. A mouth poverhnrsti have small longitudinal ridges, which end at the cutting edge 3 tubercles. Medial contact surface almost vertical, lateral - from the cutting edge to the neck directed inclined hook that incisal crown wider than the neck. The cutting edge has two angles, of which the lateral blunt and acts in the direction of the canine. On the lingual surface of the cervical enamel of a roll, well contoured neck of the tooth. The root of one, flattened laterally, with longitudinal grooves. On cross-sawing has an elongated oval. The curvature crown is weak.

Maxillary canine has a cone-shaped crown is wrong. Cutting edge resembles in appearance triangle bounded by three teeth - two extreme and one moderate, well defined. Mound has two slope, medial lateral slope less. Vestibular surface is

convex, has a longitudinal ridge, which divides the labial surface into two facets, of which more lateral.

The lingual surface is convex, also divided into two facets. Longitudinal ridges on both the enamel surface of the crown go to cutting the hill. The side faces form the cutting edge of two angles from which the medial more obtuse than the lateral. Contact surfaces are in the form of a triangle. The root is slightly compressed laterally. Its lateral surface is more convex than the medial. It has three well-defined feature.

Canine mandible. According to the structure resembles the top, but slightly shorter and smaller. Crown, partially preserving rhombic, more narrow and elongated. Vestibular surface is convex, lingual - flat and slightly concave. On the cutting edge of the cutting head is allocated central mound, which converge in the face crown. Medial lateral shorter. Medial angle is sharp and located further from the cervix. From the main mound toward premolar is a small notch that separates the medial tubercle. Crown height and lateral vestibular surface is slightly higher than the height of the medial and lingual surfaces. The root of one, is shorter than that of the upper canine. On the sides of the deep longitudinal grooves. On cross-sawing oval. All three are well-marked feature.

Maxillary first premolar has a crown prismatic form, buccal and lingual surfaces are convex. Vestibular surface of the greater palatine, has a small vertical shaft located. Contact surfaces are rectangular in shape, with a convex back surface than the front. On the chewing surface of the two hillocks - buccal and palatal. Buccal much more. Between the bumps in the anteroposterior direction are grooves (fissures) that result in small enamel ridges. On the chewing surface of the buccal cusp are two slope, the front of which is expressed better. The root of the flattened side surfaces are deep Prodo pronounced palatal. Features are expressed well. However, the tooth often has the opposite sign of the curvature of the crown, that is, more convex back of the buccal surface, a sloped - front.

Second premolar of the upper jaw. Has a slightly smaller size. Crown prismatic. On the desired surface of the two tubercles. Buccal and palatal. Buccal better developed. Tubercles divided by transverse furrow, 11 rohodyaschey centered chewing surface and separated from the faces of small crown enamel ridges. Buccal surface of the crown more palatal. Palatine more convex and has longitudinal ridges. The front portion of the buccal surface is less convex than the back (reverse the curvature crown). Most one root, conical, compressed in the anteroposterior direction, the side surfaces are broad, they are not deep longitudinal grooves. In 15% of cases, has a split root closer to the top.

First premolar of the lower jaw. Vestibular surface of the crown is convex, longer than the lingual. On the vestibular surface of the wide longitudinal ridges, heading to the main tubercle chewing surface.

Chewing surface has two hills. Lingual tubercle is always less than the buccal. Buccal larger, heavily tilted inward. They shared a small groove, which is located close to the Mount of speaking. The bumps on the edges connected to a roller, the sides of which are small depressions (pits). The root of one, straight, oval, slightly flattened laterally. On the front and back of the pass shallow grooves.

Lower second premolar vestibular surface is similar, lingual and has a slightly larger size because of the well-developed lingual cusp. Hillocks developed almost the same (slightly more buccal), divided enamel roller, around which there are small depressions (pits). From the faces of the tooth roller divided horseshoe fissures. From fissures may depart more groove that divides the lingual tubercle into two smaller hills, turning the tooth trehbugorkovy. Contact surfaces are convex and without sharp boundaries become the lingual surface. On the lingual surface is a longitudinal ridge, ending on the lingual cusps. One root, cone-shaped. Slightly flattened, the lateral surface of his almost no longitudinal furrows. Well defined sign of the root. Symptoms of angle and curvature expressed mild.

Maxillary first molar size exceeds the first premolar, the largest of the molars of the upper jaw. The crown has a rectangular shape. On chewing surfaces of diamond four tubercles, two palatal and two more developed cheek and from cheek to peredneshechnyi. Tubercles separated H-shaped fissures. In the prepalatal tubercle sulcus separates the small, not rising to the chewing surfaces of extra bump. Buccal surface of the crown is convex, divided furrow. The lingual surface of the smaller but more convex. In the middle of it, too, there is a vertical groove, passing on the chewing surface. The tooth has three roots: Neb-tion and buccal (peredneshechnyi and zadneshechny). Palatal root of a massive, round, straight. Cheek flattened laterally deflected backwards. Front Rear better developed. All three are well-marked feature.

Maxillary second molar in magnitude than the first. Kuboobraznaya crown, on the chewing surface 4 tubercle separated X-shaped fissures. Buccal cusps are better developed palate, the most developed peredneshechnyi. The number of cusps and fissures location may vary: 1) crown close in shape to the crown of the first molar, but no 5th tubercle, 2) diamond-shaped crown, and peretsnenebny zadneshechny hills close. Groove between them is barely visible, and 3) and prepalatal zadneshechny pilis bumps into one, on the chewing surface of the three hillocks located in the anterior-posterior direction, and 4) the crown of triangular shape, there are three hillocks - palatine and two cheek. 11 meet the three roots (palatal,

buccal - front and back). Sometimes there is a fusion of all the roots of one conical, then there are places seam grooves.

Maxillary third molar is smaller than the first and second, different versions of many shapes and sizes. 11 iogda on the chewing surface of the 8.6 bumps, and most are located on the edges of the occlusal surface, one or two - in the middle. Most people - 3 hill. The shape and size of the roots also varies. In half of the roots grow together in a conical mass, curved and shorter. The tooth has a tendency to reduction, so it may not bud.

Mandibular first molar is the largest of the mandibular molars. Crown cubic form on the chewing surface of the five cusps 3 buccal and lingual two more developed. Most developed velar. Tubercles separated F-shaped fissure, the longitudinal part, which reaches to the edges of the crown enamel beads, and the transverse part of the transition to the vestibular surface of the shallow end and small hollows. Buccal surface is convex, lingual parallel to it, less convex. Contact the front surface and a convex wider than the rear. The tooth has two roots - front and back. They are sealed, they are more in width, schechnoyazychnom direction. Posterior root of a large, straight.

Front - flattened in the anterior-posterior direction. On the root surface are longitudinal grooves on the back of the rear notch root is missing. Tooth has a well-defined three characteristics.

Second molar mandibular second in size to the first. On cross-sawing is rectangular, and the deposition of secondary dentine - often slit. In the arch of the cavity are ugubleniya corresponding knobs on the chewing surface. The bottom of the coronal cavity convex, with three mouths of the root canals. Two channels in the front rasrolozheny root - one in the back. Back channel root relatively easily accessible for tooling.

Mandibular third molar is exposed to various kinds of variations. Often has a similar structure to the second molar, but the crown is smaller. Crown cubic form on the chewing surface of the 4 - 5 tubercles, rarely - 3 hump. The bumps are separated by longitudinal and transverse fissures. Two roots - front and back, bent backward. They can be collected in one short and thick root. The tooth has a tendency to reduction.

Criterion for evaluating the theoretical part

Maximal score	17-14,2 score	14- 11 score	10,8 -7,4score	7,2score
20-17,2 score				
Fine	good	Average	Dissatisfaction	poorly

100-86%	85-71%	70-55%	54-37%	36% and lower
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Used in this lesson, new educational technologies:

hosting the game "TOUR GALLERY"

The Games "TOUR GALLERY"

For the activity should:

1. The required number of questions.
2. Blank sheets of paper.
3. Colored pens (3-4 colors)

Rules of the Game: All students are divided into three equal groups, each group then pulls question within 5 minutes of its particular color pen write your answer, then groups clockwise exchanging answer sheets and supplement, and correct or confirm the answer of the previous group . On each answer sheet, and thus should be 3 answers written by different hands. Students are evaluated by the degree of correctness of the answer, additions or corrections, and the degree of participation in the game, the maximum score corresponds ball analytical hour lessons.

Questions:

1. Show the surest way to reveal a cavity upper canine?
2. Tell technique oral disclosure of the lower first premolar teeth?
3. Tell technique oral disclosure of the lower first molar teeth?
4. Tell technique oral disclosure of the upper second molar teeth?
5. Tell technique oral disclosure of the upper first molar teeth?

situational problems

1. The form of the crown approximately rectangular. On the chewing surface of the two hill - buccal and lingual. Passes across the deep groove that separates them. Well-marked sign of the root and the angle opposite to the curvature crown. Crushed roots in the anteroposterior direction, the tooth has two roots - buccal and palatal. Identify the anatomical identity of the tooth.
2. The crown has a cubic form on the chewing surface of the five hills. Identify anatomical zyba affiliation.
3. The tooth has a crown in the form of a wide chisel. Identify the anatomical identity of the tooth.
4. Children 10 years old 75 tooth removed. The roots of the tooth missing on 2/3. Should the physician to search for the remaining roots? Why?

Solution tests

Criterion for evaluating the analytical part

Mak.ball.-15 fine	good	satisfactorily	Dissatisfaction	poorly
15-12,9	12,75- 10,65	10,5-8,25	8,1-5,55	5,4 and lower
100% - 86%	85% - 71%	70-55%	54% -37%	36% and lower

Tests

1. Specify the tools used to expand the mouth of channels:

- A. Gates glidden
- B. round bur
- V. K - Rimmer
- G. spatula
- D. drillbor
- E. K-file
- J. pulp extractor
- Z. rotate boron

2. Endodontic sets are:

- A large, medium, small
- B. large and small
- C. just great
- D. Only a small
- E. one species

3. Instruments to remove the soft contents of the root canal:

- A pulp extractor
- B. K-files
- B. forests
- G. polishers
- D. veneers

4. Instruments for root canal:

- A channel extender
- B. Spreader
- B. sharsimon boron
- G. Pulpit extractor
- D. strips

5. Name of channels from the second molar of the upper jaw:

- A palatal, buccal-mesial, buccal, distal

- B. medial-buccal, lingual medial-distal
- C. palatine, buccal-mesial
- G. distal, medial
- D. medial-lingual, medial-buccal

6. Name of channels from the first molar of the upper jaw:

- A palatal, buccal-medilny, bucco-distal
- B. distal, medial, buccal, lingual medial-
- C. palatine, buccal
- D. bucco-mesial, buccal, distal
- E. palatal, distal

7. Mandibular third molar is at the bottom of the cavity of the tooth:

- A 3 mouth root canals
- B. 2 mouth root canals
- C. 1 root canal mouth
- D. 4 mouth of the root canals
- E five mouths of the root canals

8. Heat carrier - is used:

- A gutta-percha to razmegcheniya
- B. for lateral condensation of gutta-percha
- V for horizontal condensation of gutta-percha
- G. In order to determine the length of the channel
- D. for channel expansion

9. Tools for determining the size of the channel:

- A depth gauge round
- B. smooth broach
- B. pulp extractor
- G. hastate forests
- D. strips

10. Fangs trepaniruyut:

- A. with the oral side
- B. with facially
- B. From the medial side
- G. with distal part
- D. from the cutting edge

11. The proximity of the bottom of the maxillary sinus should be considered in treatment of root canals:

- A maxillary first molar
- B. mandibular second premolar
- B. maxillary central incisor
- G. mandibular central incisor
- D. maxillary lateral incisor

Criterion of evaluation tests:

Mak.ball.-15 fine	good	average	dissatisfaction	poorly
15-12,9	12,75- 10,65	10,5-8,25	8,1-5,55	5,4 and lower
100% - 86%	85% -71%	70-55%	54% -37%	36% and lower

The practical part

Manual skills

Opening the cavity lateral incisor on phantoms.

Purpose: to learn to open the tooth cavity on phantoms.

Indications: Open the cavity lateral incisor.

Equipment: phantom bokovomi cutters, drills, dental drills, dental tools for sealing.

Step by step:

No	Steps manual skills (milestones)	Do not follow steps	Completed phase partially	Completed all phases of
1	Tooth cavity open in blind holes, diamond or carbide round bur.	0	18	36
2	Burr hole expanded with spherical boron bigger.	0	14	28
3	Access to the root canal should be without pripyatstvennym the needle into the canal should fall in a straight position.	0	18	36

7. Checks are used to assess students' knowledge:

- Oral answer
- Active participation in discussions
- Solution of test problems

And demonstration of basic practical skills

8. The evaluation criteria of the current control

№	Score	excellent	good	Satisfactory	d ssatisfaction	bad
	Assimilation in%	100%-86%	85%-71%	70-55%	54%-37%	36% и ниже
1	The theoretical part	20-17,2 ball	17-14,2 ball	14– 11 ball	10,8 -7,4 ball	7,2 ball
2	Analytical part:	15-12,9	12,75- 10,65	10,5-8,25	8,1-5,55	5,4
3	Organizer	15-12,9	12,75- 10,65	10,5-8,25	8,1-5,55	5,4
4	Test	40-34,4-ball	34- 28,4ball	28-22ball	21,6-14,8 ball	14,4 ball
5	The practical part	10-8,6	8,5-7,1	7,0-5,5	5,4-3,7	3,6 ball

Chronological Map of Exercise:

№	Step lessons	Type of activity	time min.	break
1.	Check	Notebook, the degree of participation of students Topic, purpose and objectives. Plan, references Introduction to the assessment criteria	5min. 5 min 5 min 5 min.	
2.	The theoretical part	Discussion, brainstorming business game "Web"	15 min. 15 min	5 min
3.	Analytical part	Tests and solving situational problems, drafting organizers, organizer Cluster Visual aids	20 min 15 min	
4.	The practical part	Conducting skills and conclude its work	20 min. 15 min	10 min
5	Total	Analysis of theoretical issues, assessment, homework and self-study	10 min. 5 min	

Questions:

1. How many teeth in milk bite?

2. Write anatomical formula milk teeth?
3. Write anatomical formula of the permanent teeth?
4. What is a "root canal"?
5. Explain the structure of the cavity of the upper and lower central incisors?
6. Explain the structure of the cavity of the lower and upper canine teeth?
7. Explain the structure of the cavity of the upper and lower premolars?
8. Explain the structure of the cavity of the upper and lower first molars?
9. Explain the structure of the cavity of the upper and lower second?
10. What is the difference cavity upper and lower teeth?

Suggested Reading.

Summary

- 1 E. Borowski "Preventive dentistry" M. 1975
2. Magid EA, Mukhin NA Atlas of phantom course and dentistry Moscow, Medicine, 1987
3. Bohr EV "Preventive dentistry." - M., 2003
- 4 E. Borowski "Preventive dentistry." - Moscow, 1998

More

- 1.Petrikas AZ Operational and Reconstructive dentistry. 1994g.-285s.
2. Chilikin V.. The latest technology in aesthetic dentistry. - M.: SUE NIKIET 2001 .. -C. 53-59.
- 3.Nikolaev AI Tsepov LM Practical terapevticheskaya dentistry. -2 Edition MED-press-inform, 2003.-from 59-291.

Practice lesson № 14

Topic: "Method and open disclosure tooth cavities in incisors, canines, premolars, molars"

Time: 135 min	The number of students :8-10
Type and form of lesson	practical training
<i>The structure of the training session</i>	<ol style="list-style-type: none"> 1. Introduction. 2. The theoretical part 3. Analytical part: <ul style="list-style-type: none"> - Cluster and organizer Tests and case studies 4. The practical part
<i>The aim of the activity:</i>	<ul style="list-style-type: none"> -teach students autopsy cavities of various groups of teeth on phantoms -to the basic concepts of endodontic instruments

<i>The student should know:</i>	<ul style="list-style-type: none"> -the concept of endodontic instruments -mechanisms of endodontic instruments - Indications for endodontic instruments -types of instruments -modern-day endodontic instruments -method of opening the oral incisors -opening procedure premolars methodology-opening cavity molars
<i>The student should be able to:</i>	<ul style="list-style-type: none"> work-endodontic instruments on phantoms open-cavity of different groups of teeth
<p><i>Task of the teacher:</i> <i>The general concept of filling materials for root canal</i> <i>-to provide a classification of filling materials for root canal</i> <i>-give an idea of the pins</i> <i>-to provide knowledge on the principles of root canal</i> <i>-The main requirements for each step of sealing</i></p>	<p><i>Learning outcomes:</i> <i>Students will learn about the basic concepts of endodontic instruments</i> <ul style="list-style-type: none"> -mechanisms of endodontic instruments - Indications for use of endodontic instruments -types of instruments - Mastered the technique of opening the oral incisors, premolars, molars </p>
<i>Training methods</i>	Lecture, brainstorming, story videomethod, workshops, working with books, dialogue, educational games, pinbord. organizer.
<i>forms of learning</i>	Group work ("Learning Together", "Work with me, thought"), single
<i>training tools</i>	Stand-board, flip chart, video, writing board, model, models, graphics, diagrams, charts, notes, checklist, texts.
<i>learning Environment</i>	Specially technologically equipped rooms.
<i>monitoring Evaluation</i>	Recitation: rapid test, writing topic test

"Restorative fillings root canals (pasta, PINS, cement)"

Flow chart of lesson

Phases and time	Activity
-----------------	----------

lesson (135min)	Teachers	Students
1-part. 45 min 5 min 10 min 20 min 10 min	1.1. Checking notebooks and attendance 1.2 explained to the subject classes and the expected results. To introduce lesson plans. 1.3. Tell keywords, references to independent work (Section № .8) 1.5. To familiarize with the evaluation criteria during the occupation (section number 6) change	Listen and write. Determine, ask questions, Familiarize with the evaluation criteria
2 - stage. 45 min 10 min 10 min 15min 10 min	2.1. Quick Test / faq / knowledge strengthens brain Curtains 2.2. Explains the plan and structure of the practice session ("web" work and play) (section number 3) 2.4. Divide students into groups and are explained the rules of klassterom (section number 4) 2.6. Give students visual aids to better capture (tests and case studies, models, products, software, phantoms), to give an idea of how to Use (section number 4) 2.7. change	Answer, write. Work in groups group perform group perform Presented by
3 - phase. 45 min 20 min 5 min 10 min 10 min	3.1. Perform skills (section number 5) 3.3. Sums up the lesson, the analysis of the work and the students' attention is drawn to the fact that they used in the future work 3.5. Evaluate the work groups, the level of training. Analysis of the checklist (section number 7) 3.6. Given the task to stand alone and determine the criteria for their evaluation.	Perform skills Assess yourself, yourself and each other. Ask questions write job

4. Motivation

Knowledge representation and the principles of dissection of hard tissues of the tooth, the classification of cavities by Black, drills, their types, basic functions, and their use is essential in the treatment of diseases of the teeth. Need to make the

right choice for hog dissection, painlessly conduct all manipulations in the mouth. The resulting body of theory and routine manual skills in the future will help the future specialist to successfully apply them in practice.

5. Intra and interdisciplinary communication

Teaching of the subject is based on the knowledge of students the basics of anatomy, physiology, physics. Acquired during the course knowledge will be used in the study of faculty and hospital dentistry, and other clinical disciplines.

6. Content of lesson

6.1 The theoretical part

Incisors cavity shape corresponds to the outer shape of the tooth. Close to the cutting edge of the cavity is given by the gap, going to the mediobuccal direction. In the arch of the cavity 3 in-depth, relevant cutting edge tubercles, of which the medial groove is more pronounced. Maximum width of the cavity in the neck of the tooth. The coronal cavity is gradually moving into the root canal. Apical one more hole. The most wide, straight, well-traveled by the channel in the upper central incisor, and a narrow, ill-passable at lower central incisor.

Canines have a spindle cavity with the largest diameter in the neck area. Pulp horn playing deep in the vault in the direction of cutting cusp crown. The cavity has no bottom and goes into the canal. In the deposition of secondary dentin with age may be a narrowing of the mouth cavity. The channel is wide, oval ends often one wide opening at the top of the root.

Frontal teeth arch tooth cavity reaches the lower third of the height of the crown. Horn stand up to half the height of the crown.

Stages disclosure tooth cavity incisors and canines:

1. Preparation of cavities.
2. Opening the tooth cavity.
3. Expansion of the cavity of the tooth.

Cavity preparation performed by the standard technique to the condition that the volume of the cavity with the expected volume of the coronal portion of the pulp. In the presence of cavities on the contact surface (III or IV class) should be translated into the lingual or palatal surface, and then open the cavity through the chamber into cavity. If the teeth are intact and there is a cavity V class, the cavity reveal a lingual or palatal surfaces. Trepanation performed diamond head, carborundum stone, rotate or obratnokonusnym boron small size, preferably with a turbine installation. Trepanation enamel should be made at a point in the middle of the crown between the medial and distal edges, the neck of the tooth and cutting

edge, but not on the part of the cutting edge. In maxillary incisors enamel trepaniruyut in blind holes. Burr hole extends to the nearest pulp horn.

Advanced login into the cavity of the tooth perform fissure bur through perforations, removing the entire body cavity of a tooth hanging edges, protrusions. The walls of the cavity to move seamlessly into the walls of the cavity of the tooth.

Removing the tooth cavity, you need spherical or guttate boron funnel mouth to expand the root canal. Do it for the free access to the channel, as the mouth of the channel is usually narrowed it difficult to delete the root pulp and are the likely place and broke jamming tool.

The coronal cavity upper premolar tooth corresponds to the outer contours, condensed into prednezadnem direction is given by the gap. In the vault cavity two holes for the horns of the pulp. More prominent of these buccal. First upper premolars have the bottom of the cavity of the tooth, it can be seen at the mouth of the two channels. First single channel is divided into two, with the split can occur at any level, in the middle or apical part of the canal. Palatal canal is wider, shorter, more direct and accessible treatment, buccal - is often curved. Maxillary second premolars usually have one good cross-channel. Mouth of the channel is located in the center of the bottom of the cavity. In 17% of cases of maxillary second premolar has 2 channels, the topography of the cavity in this case is similar to the first premolar. When a root canal treatment should take into account the proximity of the bottom of the maxillary (maxillary) sinus.

Lower premolar tooth cavity round or slightly oval. In the arch of the first premolar is well expressed to the buccal groove of the pulp horns. The second premolar recesses in the pulp horns are almost identical. The coronal cavity narrows in the neck, one enters a fairly wide channel.

Premolars are the horns of the pulp to 1/3 of the crown, the body cavity is projected at the level of the neck of the tooth. The bottom of the cavity in the upper first premolar above the neck of the tooth. The other premolars bottom of the cavity is not expressed.

Stages disclosure premolar tooth cavities:

1. Preparation of cavities.
2. Opening the tooth cavity.
3. Expansion of the cavity of the tooth.

Cavity preparation performed by the standard technique. If cavities are located on chewing surfaces (I class), reveal the tooth cavity through a cavity. Cavities II class is transferred to the chewing surface. When the cavities V class or in intact teeth trepaniruyut chewing surface of the fissures, midway between the medial and distal

edges. Boron is directed to the speaker buccal pulp horn at 45°. Tooth cavity opened.

Expansion of the cavity is carried out at the first premolar schechnonebnom direction thin fissure or cone-shaped supports. Bor directed exactly along the axis of the tooth to prevent perforation of the wall cavity. Overhanging edges clean with fissure bur. If carried out correctly disclosing carious cavity in size coincides with the cavity of the tooth, moving the wall cavity in the wall cavity of the tooth, no ledges and overhanging areas.

Hysterectomy involves removing not only koronenosovoy, but the root of the tooth pulp of the channels. Extirpation nypolnyaetsya in single rooted and multi-rooted teeth.

Distinguish between vital and non-vital extirpation. When vital extirpation remains viable pulp perhushechnoy of the root canal and pulp canal laterals.

Technique vital extirpation:

Treatment starts with pain. Spend conductive or infiltration anesthesia anesthetic solution with vasoconstrictor. Open and expand a cavity, spend necrectomy. Maximum remove damaged tissue. Prepare a cavity with the topography, the walls of the cavity were a continuation of the pulp chamber.

Reveal a tooth cavity, completely excised vault. Remove the coronal pulp and mouth. Thus, a hysterectomy is performed after first conducting amputations. Widen the mouth of root canals. Extirpation root pulp held broach. They are administered in the mouth, gently pushing into the root canal, it is desirable to the end, the entire depth. Then gently turn broach 1-2 times around the axis (the pressure on the tool should not be) to the pulp is wrapped to the side notches and gently removed from wound on the teeth pulp. Complete removal of the root pulp to broach is pulp tissue in shape and length of the corresponding structure of the root canal. If necessary, repeat the procedure. Absence of bleeding from the channel indicates a complete removal of the pulp. After antiseptic and surgical treatment of the canal is dried and sealed odontotropnym pastes (zinc evgenolovaya, endodent, endometazon etc.). Conduct radiological control. Plombières permanent tooth filling.

When hysterectomy removes all non-vital pulp in the root canal, and the rest in the branches of the pulp mummified. Treatment in two visits.

As devitaliziruyuschego means arsenic paste applied to 24 single rooted teeth for 48 hours - or multi-rooted paraformnaya paste (5-14 days). On top of pasta devitaliziruyuschuyu impose swab with liquid anesthetic, then a bandage from a water dentin. In impassable channels on how Ruby can be administered by electrophoresis 10% tincture of iodine, and having devitaliziruyuschim mummified action.

In the 2nd visit to conduct an amputation, pulpectomy, antiseptic and instrumentation channels. Sealing is carried pastes having mummified action (resorcinol-formalin, paratsin, forfenan etc.). Tooth sealed.

Cavity molars are rectangular-shaped, and the same shape as the chewing surface of the tooth. In the vault, there are four grooves for the pulp horns, corresponding knobs crown. The upper molars most developed peredneshechny horn at the bottom - velar. As the deposition of dentin replacement coronal cavity into a narrow gap. Form bottom of the cavity is close to the triangle in the corners of the mouth are three root canals. The mouth of the channel narrowed due to deposition of secondary dentine. The upper molars most comprehensive and accessible treatment palatal canal, at the lower - distal. Third molars are the individual characteristics of the structure.

Molars are the horns of the pulp to 1/3 of the crown, the body cavity is projected at the level of the neck of the tooth. The bottom of the cavity in the upper molars above the neck of the tooth, the lower molars below the neck.

Stages disclosure tooth cavity molars:

1. Preparation of cavities.
2. Opening the tooth cavity.
3. Expansion of the cavity of the tooth.

Cavity preparation performed by the standard technique. Cavities I and II class dissected so that the tooth cavity can be open to the chewing surface. When Class V cavities and teeth intact access to the pulp cavity creates trepanirovaniem chewing surface. A cavity expanded so that the walls of the cavity walls were a continuation of the coronal cavity.

One of the stages of treatment of pulpitis is opening the cavity of the tooth. The procedure is painful, so be performed anesthesia. Open coronal cavity easier through a cavity on the shortest path to the nearest pulp horn speaker, for which the direction of boron should be 45 ° to the vertical axis of the tooth. An autopsy carried out small round bur. In some cases it is necessary to resort to trepanation crowns teeth is diamond or carbide bur with a turbine installation, guiding forest parallel to the axis of the tooth.

Expansion of the cavity is carried out so as to ensure free access to the root canal in a straight line. Operate using a thin fissure forest that is cut around the perimeter of a set, or a round bur large. Processing and dredging should be carried out not because it may lead to perforation. If the bottom of the cavity dentikl, it should be removed with a sharp excavator. If dentikl soldered to the bottom of the cavity, it gently bypass small diameter round bur and remove the excavator. In the case of failure of this attempt dentikl left in place, find the mouth of the channel, guided by the topography of the mouth.

An autopsy can be performed in the direction of the widest channel.

Opening the cavity of the tooth molars perform the most extensive in the direction of the distal canal. Scrollsaw fissure bur line toward the medial cheek-horns, then to the medial-lingual horn and back to the distal. Then removed the remaining overhanging edges. At the bottom of the cavity visible entrances to the three root canal: distal, mesial buccal, mesial lingual.

The upper molars reveal a cavity in the direction of the palatal canal. Expanding cavity vypilivaya fissure bur line in the medial side of the cheek-horns, then to the bucco-distal to the horn, and back to the palatine. Removed the remaining overhanging edges. At the bottom of the cavity visible entrances to the three root canal: palatal, mesial buccal, distal buccal.

Properly disclosed tooth cavity should not have roofs, walls of the cavity smoothly into the coronal cavity. This provides easy access to the mouths of channels, contributes to their high-quality processing, eliminates tool breakage in the channels.

Criterion for evaluating the theoretical part

Maximal score 20-17,2 score	17-14,2 score	14– 11 score	10,8 -7,4score	7,2score
Fine	good	Average	Dissatisfaction	poorly
100-86%	85-71%	70-55%	54-37%	36% and lower

Used in this lesson, new educational technologies: hosting the game "ROUND TABLE"

technique of the business game "ROUND TABLE"

Envelopes group provide 5-6 questions from which students draw out one. Then take a clean sheet of paper and on it is written question. Students clockwise transfer sheet to each other and everyone writes one sentence (answer to question) adding to previous answers students. After a time the teacher checks the answers according to the rating system evaluates the response of each student.

Situational problems for the game:

1. Opredelite to which tooth is this cavity, describe the method of opening the cavity of the tooth:

Cavities match the contours of the tooth, in the form transverse sawing gap. In the arch of the cavity 2 grooves of which are deeper buccal lingual. Bottom of the cavity located below the neck of the tooth, it can be seen at the mouth of two root canals, palatal root is wider, shorter, more direct and accessible treatment, buccal channel is more narrow, often curved.

2. Opredelite to which tooth is this cavity, describe its methods of opening:

The coronal cavity has the shape irregular quadrangle, the body cavity is projected close to the neck of the tooth, with 4 dimples in the roof of the pulp horns to match knobs on the chewing surface. Form bottom of the cavity is close to the triangle, which are located at the corners of the mouth of the root canals. Palatal root canal is wide, straight, slightly bend to the side.

3. Opredelite to which tooth is this cavity, describe the method of its opening:

The bottom of the coronal cavity has the shape of a rectangle with three mouths of the root canals, of which two are located in the root of the front and one in back. Between the mouths of the channels is determined by the bulge.

Determine, which tooth is this cavity, describe the method of its opening:

Tooth cavity in general contours of the crown and root. The coronal cavity looks like a narrow slit. It ends with a set of narrow wedge on top of which there are three grooves corresponding knobs cutting edge.

Situational problems

1. On the medial surface 23 cavities. Select the correct approach to the disclosure of the pulp chamber. Specify what steps will be spending burs disclosure tooth cavity. Justify.
2. 21 intact teeth (no cavities and fillings). To prosthesis was necessary pulpless bast. Your alternative disclosure tooth cavity and remove the pulp.
3. After the evacuation of the collapse of the pulp from the root canal 33 revealed apical foramen pulpoekstraktorom sterile. Made a mistake on the course of treatment?
4. On the chewing surface of 14 cavities. Specify a particular disclosure tooth cavity in the upper premolars.
5. The prepared cavity 24 with deducing from the front to the chewing surface of the tooth cavity revealed round bur in the anterior-posterior direction. There are shelters in the cavity of the tooth bucco-lingual direction. How to determine the topography of the mouth of the root canal? Admitted any errors when opening the pulp chamber?
6. On the buccal surface 45 large and deep cavities. Of necrotic pulp. Select the cavity preparation and disclosure of the pulp chamber to remove any pulp.

7. The front surface of the solitary standing 26 cavities. Enter the opening stages of a tooth cavity.

8. On the buccal surface 46 large and deep cavities. Of necrotic pulp. Select the cavity preparation and disclosure of the pulp chamber to remove any pulp.

9. After preparation of cavities 16 in the treatment of periodontitis disclosed tooth cavity is much broader than carious. Will there be difficulties in determining the arrangement of the mouths \rightarrow root canal? What could be more complications?

Criterion for evaluating the analytical part

Mak.ball.-15 fine	good	satisfactorily	Dissatisfaction	poorly
15-12,9	12,75- 10,65	10,5-8,25	8,1-5,55	5,4 and lower
100% - 86%	85% - 71%	70-55%	54% -37%	36% and lower

Solution tests

1. Form to file

Tetrahedral

Elliptical

rhombic

flat

Hex

2. Form K-Riemer

Trihedral

Elliptical

rhombic

flat

Hex

3. Form K - flexo file

rhombic

Elliptical

straight

flat

Hex

4. Endodontic instruments on the application is divided into:

All answers are correct

For the mouth of the channel expansion

dissection for tooth cavity

for the expansion of root canals

To determine patency and direction of root canals

5. At what speed drill machine to work endodontic instruments:

150-350 rev / min

1500-2000 r / min

700-900 rev / min

8,000-10,000 / min

300-600 rev / min

5. Endodontic intervention in the tooth cavity is carried out:

All answers are correct

To remove the infected dentin

for antiseptic treatment channel

Remove the pulp

Sealing channel

5. EDTA - EDTA is used for:

Channel expansion

Etched enamel

drying channels

improve adhesion to the seal

All answers are correct

6. For plastic netverdeyuschim restorative materials include:

Antiseptic paste

Phosphate cement

endodont

gvayakril

gutta-Percha

7. By hardening plastic restorative materials include:

Phosphate cement

Antiseptic paste

plastic pins

metal pins

Gutta-percha pins

8. The properties are not hardened filling materials for feeds:

Dissolve over time in the channel

Do not dissolve in the channel

change the color of the tooth

Provide isolation of macro-and micro-channels of the tooth

Not used for the treatment of primary teeth

9. According to the modern classification of sealers are:

Paste based on zinc oxide and eugenol

Silver-plated pins

plastic pins

gutta-percha pins

All answers are correct

10. According to the modern classification of fillers are:

gutta-percha and plastic pins

Pastes based on epoxy

resorcinol-formalin paste

glass ionomer pins

Paste based on calcium hydroxide

Criterion of evaluation tests:

Mak.ball.-15 fine	good	average	dissatisfaction	poorly
15-12,9	12,75- 10,65	10,5-8,25	8,1-5,55	5,4 and lower
100% - 86%	85% -71%	70-55%	54% -37%	36% and lower

The practical part

Manual skills

Mechanical treatment of root canals on the phantoms.

Purpose: To learn to perform the machining of root canals.

Indications: To machining root canals.

Equipment: phantoms, drill, dental drills, dental tools for sealing, endodontic instruments.

Step by step:

Nº	Steps manual skills (milestones)	Do not follow the steps	Completed all phases of
1	Discover the mouth of the channel.	0	22
2	Choose the right endodontic instruments.	0	22
3	Drilbor enter the channel until the end.	0	18

4	Rotate tool 2 times, turn it back and bring drillbor.	0	20
5	Expansion of the root canal instruments to conduct smaller, gradually passing to a size larger to handle up top.	0	18

7. Checks are used to assess students' knowledge:

- Oral answer
- Active participation in discussions

Results of the written replies

- Solution of test problems

8. The evaluation criteria of the current control

№	Score	excellent	good	Satisfactory	d ssatisfaction	bad
	Assimilation in%	100%-86%	85%-71%	70-55%	54%-37%	36% и ниже
1	The theoretical part	20-17,2 ball	17-14,2 ball	14– 11 ball	10,8 -7,4 ball	7,2 ball
2	Analytical part:	15-12,9	12,75- 10,65	10,5-8,25	8,1-5,55	5,4
3	Organizer	15-12,9	12,75- 10,65	10,5-8,25	8,1-5,55	5,4
4	Test	40-34,4-ball	34- 28,4ball	28-22ball	21,6-14,8 ball	14,4 ball
5	The practical part	10-8,6	8,5-7,1	7,0-5,5	5,4-3,7	3,6 ball

Chronological Map of Exercise:

№	Step lessons	Type of activity	time min.	break
1.	Check	Notebook, the degree of participation of students Topic, purpose and objectives. Plan, references Introduction to the assessment criteria	5min. 5 min 5 min 5 min.	
2.	The theoretical	Discussion, brainstorming business game	15 min. 15 min	5 min

	part	"Web"		
3.	Analytical part	Tests and solving situational problems, drafting organizers, organizer Cluster Visual aids	20 min 15 min	
4.	The practical part	Conducting skills and conclude its work	20 min. 15 min	10 min
5	Total	Analysis of theoretical issues, assessment, homework and self-study	10 min. 5 min	

10. Questions:

1. Features topography incisor tooth cavity.
2. Features topography canine tooth cavity.
3. Method of revealing incisor tooth cavity.
4. Method of revealing the canine tooth cavity.
5. The method of evacuation of the decay channels.
6. Features topography premolar tooth cavity.
7. Method of revealing the cavity of the tooth of the upper premolars.
8. Method of revealing the cavity of the tooth of the lower premolars.
9. Pulpectomy technique.
10. Features topography molar tooth cavity.
11. The method of opening the cavity of the tooth.
12. Method of revealing the dental cavity of the upper molars.
13. Method of revealing the dental cavity of the lower molars.
14. The method of amputation of the pulp.

11. Recommended Reading

Suggested Reading.

Summary

- 1 E. Borowski "Preventive dentistry" M. 1975
2. Magid EA, Mukhin NA Atlas of phantom course and dentistry Moscow, Medicine, 1987
3. Bohr EV "Preventive dentistry." - M., 2003
- 4 E. Borowski "Preventive dentistry." - Moscow, 1998

More

- 1.Petrikas AZ Operative and restorative dentistry. 1994g.-285s.
2. Chilikin V.. The latest technology in aesthetic dentistry. - M.: SUE NIKIET 2001 .. -C. 53-59.

3.Nikolaev AI Tsepov LM Practical preventive dentistry. -2 Edition-MED press-inform, 2003.-with 59-291.

Practical lesson № 15

Topic: Endodontic instruments. Various types of endodontic instruments. Tool and drug treatment good cross root canals. Extension Methods Difficult root canals. Impregnation methods to influence bad patency channels. RECIPES.

Time: 135 min	The number of students :8-10
Type and form of lesson	practical training
<i>The structure of the training session</i>	<ol style="list-style-type: none"> 1. Introduction. 2. The theoretical part 3. Analytical part: <ul style="list-style-type: none"> - Cluster and organizer Tests and case studies 4. The practical part
<i>The aim of the activity:</i>	<ul style="list-style-type: none"> -Formulate an idea of endodontic instruments -To give a classification of endodontic instruments - To study the structure of endodontic instruments -To the basic concepts of endodontic instruments
<i>The student should know:</i>	<ul style="list-style-type: none"> -the concept of endodontic instruments -mechanisms of endodontic instruments - Indications for endodontic instruments -types of instruments -modern-day endodontic instruments
<i>The student should be able to:</i>	<ul style="list-style-type: none"> -correct fix endodontic instruments (machine) at the tip work-endodontic instruments on phantoms
<p><i>Task of the teacher:</i></p> <p><i>The general concept of filling materials for root canal</i></p> <ul style="list-style-type: none"> -to provide a classification of filling materials for root canal -give an idea of the pins -to provide knowledge on the principles of root canal -The main requirements for 	<p><i>Learning outcomes:</i></p> <p><i>students will</i></p> <p><i>formulate a general idea of instrumental and medical treatment is well traversed channels</i></p> <ul style="list-style-type: none"> -to give a classification of endodontic instruments for instrumental treatment of root canals - Explore ways to pass impassable channels -to give the basic concepts of application of endodontic instruments in expanding impassable channelsis to teach students to pursue impregnation method to

<i>each step of sealing</i>	<i>influence the plohoprohodimye channels</i>
<i>Training methods</i>	Lecture, brainstorming, story videomethod, workshops, working with books, dialogue, educational games, pinbord. organizer.
<i>forms of learning</i>	Group work ("Learning Together", "Work with me, thought"), single
<i>training tools</i>	Stand-board, flip chart, video, writing board, model, models, graphics, diagrams, charts, notes, checklist, texts.
<i>learning Environment</i>	Specially technologically equipped rooms.
<i>monitoring Evaluation</i>	Recitation: rapid test, writing topic test

"Restorative fillings root canals (pasta, PINS, cement)"

Flow chart of lesson

Phases and time lesson (135min)	Activity	
	Teachers	Students
1-part. 45 min 5 min 10 min 20 min 10 min	1.1. Checking notebooks and attendance 1.2 explained to the subject classes and the expected results. To introduce lesson plans. 1.3. Tell keywords, references to independent work (Section № .8) 1.5. To familiarize with the evaluation criteria during the occupation (section number 6) change	Listen and write. Determine, ask questions, Familiarize with the evaluation criteria
2 - stage. 45 min 10 min 10 min 15min	2.1. Quick Test / faq / knowledge strengthens brain Curtains 2.2. Explains the plan and structure of the practice session ("web" work and play) (section number 3)	Answer, write. Work in groups group perform

10 min	<p>2.4. Divide students into groups and are explained the rules of klassterom (section number 4)</p> <p>2.6. Give students visual aids to better capture (tests and case studies, models, products, software, phantoms), to give an idea of how to Use (section number 4)</p> <p>2.7. change</p>	group perform Presented by
<p>3 - phase. 45 min 20 min 5 min</p> <p>10 min 10 min</p>	<p>3.1. Perform skills (section number 5)</p> <p>3.3. Sums up the lesson, the analysis of the work and the students' attention is drawn to the fact that they used in the future work</p> <p>3.5. Evaluate the work groups, the level of training. Analysis of the checklist (section number 7)</p> <p>3.6. Given the task to stand alone and determine the criteria for their evaluation.</p>	<p>Perform skills</p> <p>Assess yourself, yourself and each other.</p> <p>Ask questions write job</p>

4. Motivation

Knowledge representation and the principles of endodontic intervention classification of endodontic instruments and their types, basic functions, and their use is essential in the treatment of diseases zubov. Neobhodimo make the right choice of endodontic instruments for use in the pulp chamber, painlessly conduct all manipulations in the mouth. The resulting body of theory and routine manual skills in the future will help the future specialist to successfully apply them in practice.

5. Intra and interdisciplinary communication

Teaching of the subject is based on the knowledge of the students based on subject matter dental equipment and instruments, anatomy, physiology, physics. Acquired during the course knowledge will be used in the study of faculty and hospital dentistry, and other clinical disciplines.

6. Lesson's content

6.1 The theoretical part

For the convenience of all endodontic instruments are marked with three types: color, digital and geometric. Color-coded handles of the tool reflects the identity tool to a specific size. Numerical marking reflects the value of the tool diameter.

Geometric marking (triangle, square, circle) indicates the identity tool to a specific group (Example, file, Hedstrom). Endodontic instruments are divided into groups: Tools to extend the mouth of the root canal. These include Drill with shorter working hours Tew teardrop shape on a long thin rod (Largo, Gates Glidden, Orifise opener)

specific size. Numerical marking reflects the value of the tool diameter. Geometric marking (triangle, square, circle) indicates the identity tool to a specific group (Example, file, Hedstrom). tool. Geometric marking (triangle, square, circle) indicates the identity tool to a specific group (Example, file, Hedstrom).

Tools to extract the pulp from the root canal. Broach is used to remove the pulp or the collapse of the root canal. When you rotate around the axis on the transverse incision wound steel pulp or delayed decay of the pulp, which is then removed from the kanala.priнадlezhnost tool to a specific group (Example, file, Hedstrom). tool. Geometric marking (triangle, square, circle) indicates the identity tool to a specific group (Example, file, Hedstrom). En, Orifise opener).

specific size. Numerical marking reflects the value of the tool diameter. Geometric marking (triangle, square, circle) indicates the identity tool to a specific group (Example, file, Hedstrom). tool. Geometric marking (triangle, square, circle) indicates the identity tool to a specific group (Example, file, Hedstrom).

Tools for determining the topography of the root canal. Root tip (round and faceted) is used to get directions, cross-country, the length of the root canal. Faceted root needle is used to introduce cotton turundas the root canal. The depth gauge is available from all three dimensions. Verifiers are available in a set of term-Filov for determining channel.

Tools for passing the root canal. Drillbor - spiral, twisted steel wire to the cone, the tip and the side blade is sharp enough and flexible. Available for hand and machine work.

Drill Reamer. They are characterized by high flexibility and cutting ability faces tool. It is caused by an extended step of cutting edges. When working Rimer diizheniya make similar movements in podzavodke hours.

K-Reamer, K-Flexoreamer (is very flexible), K Flexoreamer Golden Medium (intermediate-sized tool that allows a smooth transition to the next size.)

Tools to increase the root canal. Root borer is used for expansion, smoothing the walls of the root canal, removal from the surface of infected dentin, for detecting the apical opening.

Sharp edge spiral auger remove dentin shavings from the channel walls. Therefore, in deriving the instrument should be slightly pressed to the sides of the channel. Designed for hand or with endodontic handpiece with reciprocating rotational movement. Rasp is designed for crushing, excision of infected dentin from the

canal walls. Their spines as it were plowing the side walls of the channel. Scan - triangular cone-shaped steel needle with ostrozatochennymi faces that rotation remove chips from the walls of the channel, thus extending his, giving it a rounded-conical shape.

Channel expansion also use a tool called File (kanalorasshiritel). When working files to make a back-and-forth motion, and motion podzavodki hours.

K-file is different from the K-Reamer greater flexibility by reducing the pitch of the helix. K-Flexofile used to improve the channels of large curvature. K-Flexofile Golden Medium provides a smooth transition from one dimension to the next. K-file nitiflex has unaggressive (blunt) tip and increased flexibility as it is made of a nickel-titanium alloy.

To align the walls of the root canal is used Headstrem file (drill Hedstrema). To expand the root canal can be used Rasp (rasp).

Instruments for root-canal filling. Kanalonapolniteli (Lentulo) - conical spiral, wound counterclockwise. Therefore, when rotating clockwise filling material is injected into the root canal to the apical opening. Available in various lengths and diameters, for straight and angled tip.

Spreader - manual conical tool for lateral condensation of gutta-percha pins. Condenser - machine tools for thermomechanical condensation of gutta-percha in the canal. Plugger - hand tools for vertical condensation of gutta-percha pins, cylindrical in shape and shtopferoobraznuyu top.

At the root pulp amputation devitalisation mumification. Treatment in 3 visits. In 1st visit to spend devitalization impose arsenic paste (2 nights in a multi-rooted teeth) or para formed paste (7-14 days). Paste is applied with the tip of the probe to the bottom of the cavity or Uncovered pulp after removing the softened dentin stop ring excavator. Especially open pulp is not necessary. Roughly equivalent to the amount of NAST head spherical boron number 1. i 1ad paste leave little cotton ball with the solution of pain medication (eg, camphor, phenol kidkost, the solution of any anesthetic). The cavity is closed by an aqueous viscous dentin.

In the 2 nd visit to reveal the tooth cavity, and mouth amputated coronal pulp. Injected into the cavity mummification Glare (resorcinol-formaldehyde) and mix with the root tip in promoting walkable part of the canal. Procedure is repeated 2-3 times. Mummified fluid tampon leave for 3-5 days under the bandage. Root pulp impregnated Toove impregnation liquid, which under the influence of the catalyst gradually polymerizes and becomes a stack gelatinous mass, filling root canals. Resorcinol-formaldehyde mixture is prepared as follows: the glass is applied a few drops of a 40% solution of formalin. To this was added resorcinol crystals to saturation.

In the third visit to the mouths of the left mummified paste. Resorcinol-formaldehyde paste prepared by adding ca zinc oxide to resorcinol-formaldehyde liquid to paste consistention. Then placing an insulating pad and permanent seal Not always possible to conduct a complete hysterectomy pulp. In such cases, use the s-and impregnation methods root canal treatment, root canal therapy, has the ability to deep throughout macrocanalis, its branches, and the dentinal tubules. Used for impregnation 2 resorcinol-formalin and silver plating method. They are applied in two ways: 1) in the impenetrable, hard to reach GOVERNMENTAL processing channels, and 2) can be used in a good cross channels with non-vital treatments bullets nutrition in the treatment of periodontitis.

Resorcinol-formalin method. Based on application of resorcinol-formaldehyde mixture. The main active ingredient, formaldehyde is considered a classic mummified agent. It connects to the formation of cells and albumin forms a strong bond formaldehyde albuminates, sterilized sealing tissue. Resorcinol has antimicrobial access and ability to reduce the concentration of formaldehyde in the mix dehydrated. Compound and resorcinol formaldehyde leads to a chemical reaction of polymerization hardening of the type of plastic.

Resorcinol-formaldehyde mixture is prepared as follows: the glass is applied a few drops of a 40% solution of formalin. To this was added resorcinol crystals to saturation. To speed up the polymerization catalyst is introduced.

Techniques resorcinol-formalin method: catalyst was added dropwise a 10% solution of sodium hydroxide (as Albrecht) antiformin (by Evdokimov), a drop of 5% solution of chlorine bleach (as Platonov), a drop of 5% solution of baking soda, sodium bicarbonate (for Mamedov).

Sealing technique: preparing a mixture cheeks tweezers make drop mixture in the mouth root canal and pumped for 3 minutes. The remaining liquid is removed from the channel with the help turundy cotton and repeat the procedure several times. Then a resorcinol-formaldehyde mixture, the catalyst, the liquid is introduced into the mouth of the cheeks of tweezers in the number of channels stve 2-3 drops and root needle injection fluid in the channelly for 2-3 minutes. It is advisable to mix the catalyst with the liquid in the cavity of the tooth, as the heat method exists mix and increased penetration into the channel. Excess liquid was removed with a cotton turundae. Polymerization occurs at 1, L-2 hours or more.

Disadvantages of the method: a toxic effect on paraapical WIDE tissue destruction of periodontal tissue staining solid tooth in her pink, hard tissue to become fragile, chemical burns in contact with mucous membranes.

Numerous studies have found infection root canal pulp and periodontal diseases. Impact on the microflora of root macro and microchannel the tooling radicis channel and the use of different antimicrobials.

Tooling root canal has two main objectives: mechanical cleaning of root canal and its preparation for sealing.

Stages of root canal instrumentation:

1. The mouth of the canal expansion.
2. Determining the length of the root canal.
3. Passage of the root canal.
4. Expansion of the root canal.

1. Phase of expansion is important to the mouth of the channel transmission and channel expansion in the future. Expansion work is carried out at a low speed drill round bur or special Dril with shortened working part different shape and a long thin rod (Largo, Gates Glidden, Orifese opener). Facilitated the entry into the channel and prevents breakage is endodontic instruments

2. Before performing the steps of passage and expansion

Root canal is necessary to solve the question of the level of circulation channel. In the treatment of pulpitis channel must be sealed by 1.5-2 mm short of the apex (physiologistal apical foramen). Channel of periodontitis is treated in full, the anatomical apex holeticipation.

Methods for determining the length of the root canal:

- X-ray.

enter the root canal needle and get an X-ray. This allows us to define the degree of walking root canalis, the direction of the tool, the presence of perforations per curving.

- Elektrometriche. The method is based on measurements of electrical resistance soft tissues of the mouth and tooth. One electrode is fixed on the lip, the second - placed in the channel. With tooth resistance is much higher than the mucous shell, so the circuit is not closed. When the electrode in the channel dos Teagan top, the circuit is closed and there is an audible or visual signal.

The firm "Parkell" produces machine «Farmatron IV» - an electronic apex locator that allows you to determine the extent of the channel showing on the light board distion (in fractions of a millimeter) between the tip of the tool and apecalis hole. If the tool reaches apecalis hole, accompanied by a decrease of resistance, fixed wiring and outputted as sound and light signal (shows "0"). If the tool is beyond the apical foramen, then the scoreboard displayed the letter "E", the yellow light comes on and the buzzer sounds.

Channel length is fixed with a rubber or B likonovogo limiter, which is put on Endodontics-cal tool.

3. For the passage of the root canal using a delicate instrument, Dril or «Reamer». Use reamers trail ing types: K-reamer, K-flexoreamer (is flexible and is used in

thin and curved channels), K-flexreamer Golden medium (tool of intermediate size), K-file nitiflex (for the passage of very thin and curved channels). Fishing has nonaggressive top, high-gibkos

Tew and shape memory). The conventional method of using reamers (drillborov) gradually from the smaller to the pain Shem reach the apex. Working Riemer, need Dimo makes a movement, a similar movement in the underground vodka hours.

4. Expansion of the root canal.

Expansion of the root canal performed files, drill E, rasps, root scan. K-file (Kerr Dril) is characterized by fine-pitch blades,, K-flexofile - kanalorasshiritel flexible for expansion and use of thin curve channels, K-flexofile Golden medium - flexible canal dilatator intermediate sizes.

General requirements for the expansion of root canal: races begin extension file of the same number as the Example, which was overring passage. Should observe strict

the tab of tools from one diameter to another. When working files to make a return but forth motion, rather than rotational. The movement is clockwise. You can not have a strong pressure. Need to systematically extractment tools to monitor its status and removal of dentinal described-tioK, systematically wash away from the canal dentin filings. I'm: widening the channel for quality of obturation to 3 sizes. There are special techniques of root canal:

1. Step Back - a step back from the bottom up, from the smaller to the larger, from the top of the mouth. This is the traditional technology 11 reparirovaniya.
2. Crown Down (step down) - a step ahead of the times bigger measure to smaller, from the mouth to the apex.
3. Balanced force - the method of balanced forces.

The method of channel expansion from smaller to pain.

First conduct training channel in the apical third, middle third aatem channel and finishing of the channel. The diameter of the root canal in the apical third of the minimum support, with the formation of the ledge to reduce the probability of exitsion filling material for the tip. The channel is formed in the shape of a cone, that is, magnified repeated anatomical shape of the channel size of the first K-file is determined by the number Riemer, **totomy** completed passage ch,, that. It is mounted on a full-length. Apical portion of the channel processing UT opilivaem, ie reciprocating, as in podzavodke hours. Continue to work as long as it does not pass through the channel is free. Then, the same procedure is carried out large files and consider channel widening to 3-4 size. Each tool is recommended to go back to a smaller size instrument to remove dentin shavings and prevent blocks Rovani instrument in the root canal.

File, which will close in the channel at full depth, called the ground, or the master file. Working long well, the next tool is set to 1 mm less than full length, and the working length of the subsequent Instrumenta another 1 mm less. Since forming telescopic Cesky configuration root canal. Mouth of the channel treated with extenders mouths.

Canal wall acquire echelon form form. Used to align the walls Hedstroem file. Hedstrom auger rotates over half work, 1 rebuschimi movements from the top of the mouth. Strictly prohibited rotate Hedstrom file in the channel.

To expand the use of root canal rasp (Cymru, Rat tile file). Rasp is designed for crushing, removal of infected dentin from the walls on Asian. After processing, the rasp of the channel wall must be carefully smoothed. Scan their faces during the rotation takes chips from the walls of the channel. Scan gives channel round-conical shape.

The method of silvering. Is the processing channels patarget silver salts. Requires reductant. A chemical reaction in the interaction of nitrate and reducing falls metallic silver. It makes proteins in a sterile root canal mass albuminates silver. Silver enters the dentine chanalicules, and the surface of the channel forms a film of metallic silver \rightarrow REFLECTION, preventing the exit of infection. Jonah seibs themselves have antimicrobial activity. Silver is weak cauterizing action, so when periodontitis promotes cellular elements. Cerebreniya method can be used in the treatment of deep caries in " canine teeth.

Technique to Pekker: as reducing applied UT 4% solution of hydroquinone. At the mouth of the channel extended dry 1-2 drops of 30% aqueous solution of silver, leave it for diffusion. Then remove the remains of cotton turundas to the root tip. The procedure was repeated two or three times. After imp \rightarrow regnatsii solution of silver in the mouth making solution gidrohin on and injected into the canal for 2-3 minutes. The remaining solution was removed with a cotton. At the bottom lay swab slightly reducing propyleneculated under the bandage.

Methodology of Platonov: as reducing use auyut 10% formalin solution.

Disadvantages of the method: staining of dental hard tissues in irny color solution of high concentration may cause irritation of the periodontal tissue.

Complications of root canal: Break off Nano filled, poor sealing of the channel (not complete filling or excessive excretion by the tip cor AE). To avoid complications, you should be a method of processing the cavity and root canal procedure filling root canals, used in the work-III limit the length of the channel, to conduct X-ray control.

Provide medical treatment, good cross-channel

-Conduct widening impassable channels

Criterion for evaluating the theoretical part

Maximal score 20-17,2 score	17-14,2 score	14– 11 score	10,8 -7,4score	7,2score
Fine	good	Average	Dissatisfaction	poorly
100-86%	85-71%	70-55%	54-37%	36% and lower

TOOLS root canal (endodontic instruments) used in this lesson new educational technologies: hosting the game, "cat in a poke".

The methodology of the business game

"cat in a poke"

Rules of the game:

Each student chooses one rolled into a tool of opaque paper bag (fold tool for security purposes) and tells the structure and use of the instrument. Evaluate each student and tell his shortcomings.

Situational problems

1. The patient complained of pain in the tooth from thermal stimuli to conduct a survey of the oral cavity. What tools do you take this?
2. The patient was diagnosed with medium decay. What tools do you need for the preparation of cavities?
3. The patient is the treatment of chronic periodontitis. What tools are needed to handle the bad passable channel?
4. Patient after treatment of chronic pulpitis necessary to filling. What tools do you take this?

Criterion for evaluating the analytical part

Mak.ball.-15 fine	good	satisfactorily	Dissatisfaction	poorly
15-12,9	12,75- 10,65	10,5-8,25	8,1-5,55	5,4 and lower
100% - 86%	85% - 71%	70-55%	54% -37%	36% and lower

Tests

1. Name roots of the second molar of the mandible:
 - A. distal *
 - B. Medial *
 - B. palatine, buccal
 - G. buccal, lingual
 - D. palatine, the medial
 - E. distal palatal
2. In a small set of endodontic there (exclude too much):
 - A. pins *
 - B. forests *
 - B. Root Gimlets
 - G. drillbory
 - D. canal fillings
 - E. pulpitis extractors
3. With the pulp extractor:
 - Remove the pulp
 - Expanding channel
 - Measure the length of the channel
 - Removed from the walls of the infected dentin layer
 - Plombières channel
4. With a needle Miller
 - Determine the length, direction, and cross-channel
 - Remove the remains of the pulp
 - Plombières channel
 - Expanding channel
 - Remove infected dentin layer of the channel walls
5. With the channel filler:
 - Plombières channel
 - Remove the remains of the pulp
 - Determine the throughput and the channel length
 - Expanding channel
 - Spend antiseptic channel
7. Large endodontic set consists of:
 - 8 tools
 - 7 tools
 - 12 tools
 - 20 tools
 - 6 Tools
8. Drilbor applied for:
 - Extensions curved and difficult passable channels
 - Determine the length of the channel

Filling the channel filling material

Remove excess pulp

Remove the infected dentin

9. Instruments for root canal:

A channel extender

B. Spreader

C. spheric bor

D. Pulpit extractor

E. strips

10. Name of channels from the second molar of the upper jaw:

A bucco-mesial, buccal, distal, palatal

B. palatine, buccal

B. distal, medial

G. palatine, medial-buccal

D. bucco-distal palatal

11. Specify solid materials for root canal:

A silver studs

B. phosphate cement, adgezor, Argyle, tsebonit

B. zinc-eugenol paste resorcinol-formaldehyde

G. dexamethasone endometazon

D. intradont, evgident, endodent, Anix

Criterion of evaluation tests:

Mak.ball.-15 fine	good	average	dissatisfaction	poorly
15-12,9	12,75- 10,65	10,5-8,25	8,1-5,55	5,4 and lower
100% - 86%	85% -71%	70-55%	54% -37%	36% and lower

The practical part

Manual skills

Expansion of the mouths of root canals.

Purpose: To learn to expand the mouth of the root canals on phantoms.

Indications: To enhance the mouth root canal on phantoms.

Equipment: phantoms, drill, dental drills, dental tools for sealing, endodontic instruments.

Step by step:

№	Steps manual skills (milestones)	Do not follow the steps	Completed all phases of
1	Tooth cavity open in blind holes, diamond or carbide round bur.	0	26
2	Burr hole extended to the complete removal of a set of cavities.	0	24
3	At the bottom of the tooth cavity to find the mouth of the canal and expanded with spherical boron.	0	26
4	Access to the root canal should be without pripyatstvennym the needle into the canal should fall in a straight position.	0	24

7. Checks are used to assess students' knowledge:

- Oral answer
- Active participation in discussions
- Results of the written replies
- Solution of test problems

8. The evaluation criteria of the current control

№	Score	excellent	good	Satisfactory	d ssatisfaction	bad
	Assimilation in%	100%-86%	85%-71%	70-55%	54%-37%	36% и ниже
1	The theoretical part	20-17,2 ball	17-14,2 ball	14– 11 ball	10,8 -7,4 ball	7,2 ball
2	Analytical part:	15-12,9	12,75-10,65	10,5-8,25	8,1-5,55	5,4
3	Organizer	15-12,9	12,75-10,65	10,5-8,25	8,1-5,55	5,4
4	Test	40-34,4-ball	34-28,4ball	28-22ball	21,6-14,8 ball	14,4 ball
5	The practical part	10-8,6	8,5-7,1	7,0-5,5	5,4-3,7	3,6 ball

Chronological Map of Exercise:

№	Step lessons	Type of activity	time min.	break
1.	Check	Notebook, the degree of participation of students Topic, purpose and objectives. Plan, references Introduction to the assessment criteria	5min. 5 min 5 min 5 min.	
2.	The theoretical part	Discussion, brainstorming business game "Web"	15 min. 15 min	5 min
3.	Analytical part	Tests and solving situational problems, drafting organizers, organizer Cluster Visual aids	20 min 15 min	
4.	The practical part	Conducting skills and conclude its work	20 min. 15 min	10 min
5	Total	Analysis of theoretical issues, assessment, homework and self-study	10 min. 5 min	

10. Test questions:

1. What is endodontics?
2. Explain the structure of the cavity of the lower and upper central incisors?
3. Explain the structure of the cavity of the lower and upper canine teeth?
4. Explain the structure of the cavity of the lower and upper premolars?
5. Explain the structure of the cavity of the lower and upper first molars?
6. Explain the structure of the cavity of the lower and upper second molars?
7. What is the difference cavity lower and upper teeth?
8. What tools are used in endodontics you know?
9. How many instruments are small and large sets of endodontic instruments?
10. What safety precautions should I follow when using endodontic instruments?

Suggested Reading.

Summary

- 1 E. Borowski "Preventive dentistry" M. 1975
2. Magid EA, Mukhin NA Atlas of phantom course and dentistry Moscow, Medicine, 1987
3. Bohr EV "Preventive dentistry." - M., 2003

4 E. Borowski "Preventive dentistry." - Moscow, 1998

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2. Chilikin V.. The latest technology in aesthetic dentistry. - M.: SUE NIKIET 2001 .. -C. 53-59.

3. Nikolaev AI Tsepov LM Practical preventive dentistry. -2 Edition-MED press-inform, 2003.-with 59-291.

Model of instructional technology

Lesson № 16

SUBJECT: Filling materials for sealing the root canals (pasta, PINS, cement)

Time: 135 min	The number of students :8-10
Type and form of lesson	practical training
<i>The structure of the training session</i>	<ol style="list-style-type: none"> 1. Introduction. 2. The theoretical part 3. Analytical part: <ul style="list-style-type: none"> - Cluster and organizer Tests and case studies 4. The practical part
<i>The aim of the activity:</i>	<ul style="list-style-type: none"> - To form an idea of filling materials for root canal - Know the classification of filling materials for root canal - to know the concept of pins - to provide knowledge on the principles of root canal - The main requirements for each step of sealing
<i>The student should know:</i>	<ul style="list-style-type: none"> --an idea of filling materials for root canal filling - Classification of filling materials for root canal filling - The idea of the principles of root canal - basic principles and stages of root canal - the basic requirements for each stage of preparation
<i>The student should be able to:</i>	<ul style="list-style-type: none"> - learn the technique of safety when working on the drill - select appropriate tools for root canal - fix the tip kanalonapolnitel - fill root canals different filling materials

<p><i>Task of the teacher:</i> <i>The general concept of filling materials for root canal</i> <i>-to provide a classification of filling materials for root canal</i> <i>-give an idea of the pins</i> <i>-to provide knowledge on the principles of root canal</i> <i>-The main requirements for each step of sealing</i></p>	<p><i>Learning outcomes:</i> <i>Students will learn about the general idea of filling materials for root canal filling</i> <i>- Classification of filling materials for root canal filling</i> <i>-The idea of the principles of root canal</i> <i>-basic principles and stages of root canal</i> <i>-the basic requirements for each stage of preparation</i></p>
<i>Training methods</i>	Lecture, brainstorming, story videomethod, workshops, working with books, dialogue, educational games, pinbord. organizer.
<i>forms of learning</i>	Group work ("Learning Together", "Work with me, thought"), single
<i>training tools</i>	Stand-board, flip chart, video, writing board, model, models, graphics, diagrams, charts, notes, checklist, texts.
<i>learning Environment</i>	Specially technologically equipped rooms.
<i>monitoring Evaluation</i>	Recitation: rapid test, writing topic test

"Restorative fillings root canals (pasta, PINS, cement)"

Flow chart of lesson

Phases and time lesson (135min)	Activity	
	Teachers	Students
1-part. 45 min 5 min 10 min 20 min 10 min	1.1. Checking notebooks and attendance 1.2 explained to the subject classes and the expected results. To introduce lesson plans. 1.3. Tell keywords, references to independent work (Section № .8) 1.5. To familiarize with the evaluation criteria during the occupation (section number 6) change	Listen and write. Determine, ask questions, Familiarize with the evaluation criteria
2 - stage. 45 min 10 min	2.1. Quick Test / faq / knowledge strengthens brain Curtains	Answer, write. Work in groups

10 min 15min 10 min	2.2. Explains the plan and structure of the practice session ("web" work and play) (section number 3) 2.4. Divide students into groups and are explained the rules of klassterom (section number 4) 2.6. Give students visual aids to better capture (tests and case studies, models, products, software, phantoms), to give an idea of how to Use (section number 4) 2.7. change	group perform group perform Presented by
3 - phase. 45 min 20 min 5 min 10 min 10 min	3.1. Perform skills (section number 5) 3.3. Sums up the lesson, the analysis of the work and the students' attention is drawn to the fact that they used in the future work 3.5. Evaluate the work groups, the level of training. Analysis of the checklist (section number 7) 3.6. Given the task to stand alone and determine the criteria for their evaluation.	Perform skills Assess yourself, yourself and each other. Ask questions write job

4. Motivation

Knowledge representation and the principles of dissection of hard tissues of the tooth, the classification of cavities by Black, drills, their types, basic functions, and their use is essential in the treatment of diseases of the teeth. Need to make the right choice for hog dissection, painlessly conduct all manipulations in the mouth. The resulting body of theory and routine manual skills in the future will help the future specialist to successfully apply them in practice.

5. Intra and interdisciplinary communication

Teaching of the subject is based on the knowledge of students the basics of anatomy, physiology, physics. Acquired during the course knowledge will be used in the study of faculty and hospital dentistry, and other clinical disciplines.

6. The course is taught

6.1 The theoretical part

Requirements for the root canal filling.

Filling material for the channels should not have toxic effects on the body, have no allergic properties, easily administered and obturate canal slowly harden, do not shrink, do not resolve to be impervious to oral fluids, anti-inflammatory and

antiseptic properties, not to irritate the periodontium, promote periapical tissue regeneration, does not stain the tooth to be radiopaque.

Materials for root canal fall into three main groups:

1. Plastic netverdeyuschie.

2. Plastic hardening:

— Zinc phosphate cements (phosphate cement, phosphate cement).

— Polycarboxylate cements (Khingon).

— Pastes based on zinc oxide and eugenol (evgedent, endo - metazon, merpozan, propilor, endoflas).

— Tsinkoksidgevgenolnye cements (evgetsent-B evgetsent-II, endoptur, kariosan, kaltsinol, endosolv).

— Pasta with calcium hydroxide (biokaleks, endoflas, endokal, kalasept).

— Pasta (sealant) epoxy resin (intradont, endodent, AN-26, Termas, AN +, epoksikal).

— From glass ionomer cement (kyotaku-Endo).

— Materials based on resorcinol-formaldehyde (resorcinol-formalin paste paratsin, foredent, forfenan, rezodent, credit-zopasta, estezon, endobtur).

3. Solids (pins). Distinguish solid pins - silver, plastic and plastic-gutta-percha.

1. Plastic does not harden paste - antiseptic paste. The filler powder is used: zinc oxide, white clay, artificial dentin. Knead the paste to glycerin, petrolatum, non-irritating oil (aromatic - olive, peach, sea buckthorn; karotolin, oil solutions of vitamins A, E). In the Mouth of components can be added: sulfonamides, benzocaine, vitamins, iodoform, calcium hydroxide, sodium fluoride, methyluracil, antibiotics, enzymes, contrast media (phosphate - cement, barium sulfite), etc. They attach paste antiseptic, analgesic, remineralizing, osteotropic and other properties.

Pastes are easily administered in a channel to easily deduced, have pronounced bactericidal effect, but they dissipate over time. Therefore, they are used for filling baby teeth, not to violate the eruption of permanent teeth.

Cook pasta before filling (ex tempore) or released as a finished product ("Biodent"). The method of mixing: the glass before filling sprinkled powder and some few drops of liquid. Gradually add the powder to the liquid and mix to a paste with a metal trowel.

—2. Plastic hardening.

— Phosphate cement. Plastic, rengenokonstrasten does not change the color of the tooth, well stick to the walls of the channel and obturate it does not resolve. But it quickly hardens (in the channel 4-6 minutes), is difficult to remove from the channel during injection by the tip does not resolve, annoying periodontium. Therefore plombières channels prior to surgery (resection of the apex).

- *Materials based on zinc oxide and eugenol most widely used in endodontics.*

Pastes have a marked anti-inflammatory effect, plastic, slowly harden, do not irritate the periodontium, in deriving a top dissipate over time, do not stain tooth, radiopaque. Prepare ex tempore, ie before use. Separately applied to the glass drop of liquid and powder. Spatula to add the powder to the liquid and mixed to the consistency of paste.

- *Zinc oxide evgenol cements.*

Kariosan. Available in the complete powder - liquid. Based fluids - eugenol. Powder (zinc oxide and synthetic resins, accelerators, inert substances) 2 species pulvis Rapid and pulvis Normal, pulvis Rapid (accelerated) is used for treatment of gaskets and temporary fillings, pulvis Normal - for a root canal. The material is plastic, easily inserted into the channel, well occlusive channel radiopaque, does not change the color of the tooth, periodontal slightly annoying. Implementation time is enough to seal the channel.

— *Pasta with calcium hydroxide have a pronounced anti-inflammatory and dentinstimuliruyuschim action. Who can use them for sharpening process, especially in the treatment of periodontitis.*

— *Pastes based on epoxy resins are used alone or as a sealant - fillers when filling with gutta-percha (AN +).*

Endodent. Consists of a mixture of epoxy resin, hardener, radiopaque barium sulfate. Is available in a set in two tubes and powder filler (barium sulfate). One tube contains a resin, the other - a hardener. Endodent flexible, easily inserted into the channel, it is well occlusive, non-shrink, slowly hardens, radiopaque, does not change the color of the tooth. It is used for sealing of all groups of teeth. The

method of preparation: the glass is applied resin and hardener in a ratio of 5:1, add filler and mixed to the consistency of paste.

— Materials based on resorcinol - formaldehyde. Used to seal the channels after extirpation of devitalized or non-vital amputation.

Resorcinol - formaldehyde paste prepared by adding zinc oxide to resorcinol - formaldehyde liquid to a paste. The paste is applied, if the channels are poorly passable. Recently, however, found that the method provides a high rate of complications with the destruction of bone tissue at the tip even when well sealed channels. With unfilled until the apex complications occur in almost all cases.

Forfenan. Available in the complete powder (zinc oxide with dexamethasone, which reduces irritating resorcinol - formaldehyde to the periodontium) and two fluid (formaldehyde and liquid hardening - resorcinol with hydrochloric acid).

The method of mixing: the glass is applied two liquids and powder. Mixed to a paste. During polymerization, the paste is heated and formaldehyde gas penetrates into the dentinal tubules and branch canals, mummifies remaining pulp. Therefore forfenan indicated for filling channels with incomplete removal of the pulp. Has a number of positive features: easy to enter into the channel, it reliably obturate, bactericides, radiopaque. But he was able to change the color of the tooth, so the channel is used to seal posterior teeth.

3. The aim is to increase the use of safety pins canal obturation.

Pins in shape and size generally correspond root canal, but not entirely accurate. Therefore, they are used in combination with the filling material. Pin tight fit enhances the filling material to the walls of the channel. Pin promotes restorative material to the apical opening. Thus pin accelerates the process of filling the root canal. In addition, the pins reduces shrinkage of filling material. Pins are used only hardening filling material since the introduction of the pin does not provide tight shut root canal.

Внастоящеевремяиспользуютсеребряныеигуттаперчевые.

Silver pins radiopacity, durable, have a bactericidal effect.

Gutta-percha pins. Issued in accordance with the standards ISO. Their advantage is flexibility, absence of toxic and irritant, radiopacity. Percha does not crack, does not change the volume, and has good flexibility.

Thermafil - endodontic obturator. It consists of a metal or plastic rod coated with gutta percha.

Filling of the channel is the final stage of endodontic treatment of pulpitis and periodontitis.

Methods of filling root canals:

1. Manual. The channel is filled with root needle drillbora, plugger.

1.2. Machine. The channel is filled with kanelonapolnitelya for straight or angled tip.

3 ways to allocate root canal: 1) paste, 2) cement, 3) pastes or cement combined with Stief.

Sealing is not hardening or hardening paste, cement:

Prepare the filling material and tools to seal, insulate the tooth from saliva spend antiseptic channel. Channel dried dry sterile cotton turundas the root tip or special paper points corresponding diameter. The paste is introduced into the channel kanelonapolnitelem without turning the car to the top. To fix the length of the restriction on the use kanelonapolnitele. The machine shall be operated for 2-3 sec. Extract kanelonapolnitel when the machine. This was repeated several times as long as the channel is full. Each piece seal plugger or at room turundae. Control filling - radiography.

Mix the cement liquid.

There are two methods of sealing pins.

1. The single-pin. The pin is used after the introduction of feed paste. The base is made pasta and pin provides uniformity and reliability required. It is used for sealing of gutta-percha and silver studs.

Method: they put the pin, prepare the filling material, tools, treated and dried feed. To pipe once the paste, then pin. Control filling - radiography.

2. Method side seal pins - lateral condensation. It is used for sealing of gutta-percha. Basis in this case is gutta-percha, and paste only lubricates the channel wall.

Lateral condensation technique: they put the pin in size, treated and dried feed by injecting a small amount of paste, the basic pin. Spreader (side seal) displace the pin to the wall and in the space obrazovasheesya introducing an additional pin. Seal and the introduction of additional pins is repeated. The channel is considered full if the seal is no longer enter the channel.

Criterion for evaluating the theoretical part

Maximal score 20-17,2 score	17-14,2 score	14– 11 score	10,8 -7,4score	7,2score
Fine	good	Average	Dissatisfaction	poorly
100-86%	85-71%	70-55%	54-37%	36% and lower

Situational problems

1. The root canal is sealed 21 resorcinol - formaldehyde paste imposed laying and permanent filling. Allowed if the error in selecting restorative? Justify the answer.
2. Canal filling root canal is sealed to the top 22. Turn off the drill and brought the channel filler. What a mistake?
3. On the chewing surface 46 formed cavities, tooth cavity was opened, the root canals bad passable over the mouths of the channels left resorcinol - formalin paste. Is it right to the treatment?

Used in this lesson, new educational technologies: hosting the game, "Gallery Tour"

The Games' Gallery Tour. "

For the game needed.

1. The required number of questions.
2. Blank sheets of paper.
3. Colored pens (3-4 colors)

Rules of the Game: All students are divided into three equal groups, each group then pulls question within 5 minutes of its particular color pen write your answer, then groups clockwise exchange answer sheets and supplement, and correct or confirm the answer of the previous group . On each answer sheet, so should be on 3 answers written by different hands. Students are evaluated by the degree of correctness of the answer, additions or corrections, and the degree of participation in the game, the maximum score corresponds ball analytical hour lessons.

Criterion for evaluating the analytical part

Mak.ball.-15 fine	good	satisfactorily	Dissatisfaction	poorly
15-12,9	12,75- 10,65	10,5-8,25	8,1-5,55	5,4 and lower
100% - 86%	85% - 71%	70-55%	54% -37%	36% and lower

Test

1. EDTA is used for:

A channel expansion

B. etched enamel *

C. drying channels

D. enhance adhesion to the seal

E. All answers are correct

F. passage impassable channels *

2. Indication for the use of glass ionomer cements:

A use as a therapeutic pad

B. for fixing bridges *

C. Use as insulating gaskets *

D. to apply it in the "sandwich" technique *

E. use as a temporary filling

F. for canal filling

3. What a filling material for the channels changes the color of the tooth

A resorcinol-formalin paste *

B. phosphate cement

C. Gutta-percha pins

D. endometazon

E. All answers are correct

F. silver impregnation *

4. Group of teeth, which can be sealed root canals resorcinol - formaldehyde paste:

A. All molars *

- B. upper canines
- C. front teeth
- D. lower canines
- E. all teeth
- F. teeth, which are covered by a crown *

5. Incisors are trephaned:

- A. with lingual *
- B. with facially
- C. from the cutting edge
- D. the medial side
- E. the distal part
- F. palatal side *

6. Instruments to remove the soft contents of the root canal:

- A pulp extractor *
- B. K-files
- C. forests
- D. rashpel *
- E. veneers
- F. polishers

7. When resorcinol - formalin method of reaction is observed:

- A. Polymerization *
- B. neutralizing
- C. oxidation - reduction reaction
- D. reaction mixing
- E. no public reaction is not observed
- F. mummification *

8. For machining impassable channels are used:

- A. drillbor, drill *
- B. Pin.
- C. smooth broach
- D. channel filler
- E. broach
- F. files *

9. On what basis are not prepared curing filling material for feeds?

- A. oils *
- B. white clay
- C. cement
- D. plastic
- E. composite
- F. Zinc oxide *

10. Materials for root canal is divided into:

- A. The plastic does not harden *
- B. treatment and isolation
- C. temporary and permanent

- D. composite and cement
- E. metal and acrylic
- F. plastic hardening and solid *

11. The downside resorcinol - formalin method is:

- A. tooth staining in pink *
- B. inflammation of the tooth pulp
- C. necrotisation pulp
- D. absorbed in the channel of the tooth
- E. does not fill the canal
- F. attaches tooth fragility *

12. Name roots of the second molar of the mandible:

- A. distal *
- B. Medial *
- C. palatine, buccal
- D. buccal, lingual
- E. palatine, the medial
- F. distal palatal

13. In a small set of endodontic there (exclude too much):

- A. pin *
- B. forests *
- C. Root Gimlets
- D. drillbory
- E. canal fillings
- F. pulp extractors.

14. Material for stopping channels must:

- A. not to cause irritation of periodontal tissue *
- B. harden quickly in the channel
- C. It has antiseptic and anti-inflammatory *
- D. The light is introduced into the channel *
- E. painted crown.
- F. not be radiopaque.

15. Positive properties endogermetikov epoxy resins:

- A plastic, easily administered channel *
- B. inert to Periodontitis *
- C. long curing time *
- D. polymerization shrinkage
- E. high cost
- F. Violations of fit and Hermeticism

Criterion of evaluation tests:

Mak.ball.-15 fine	good	average	dissatisfaction	poorly
15-12,9	12,75- 10,65	10,5-8,25	8,1-5,55	5,4 and lower
100% - 86%	85% -71%	70-55%	54% -37%	36% and lower

The practical part

Manual skills

Methods of root canal resorcinol - formaldehyde paste and plastic filling materials on phantoms.

Purpose: To learn to seal the root canal resorcinol - formaldehyde paste.

Indications: sealed root canal resorcinol - formaldehyde paste.

Tools: The slide, a solution of 40% formalin, nasysenny resorcinol, 5% sodium bicarbonate, zinc oxide, dental tools for stopping, phantoms, drill, endodontic instruments, cotton rolls.

Step by step:

№	Steps manual skills (milestones)	Steps manual skills (milestones)
1.	Mechanically and medically treated root canal, dry cotton turundas (tooth must be separated from the saliva).	18
2.	Prepare resorcinol - formaldehyde paste.	16
3.	The first portion of pasta to put into the root canal with a	18

	needle, make some forward movement.	
4.	Canal filling paste and slowly get introduced to the channel paste.	16
5.	Compacted root paste needle.	18
6.	Fill the channel to complete filling.	14

7. Checks are used to assess students' knowledge:

- Oral answer
- Active participation in discussions

Results of the written replies

- Solution of test problems

8. The evaluation criteria of the current control

№	Score	excellent	good	Satisfactory	d ssatisfaction	bad
	Assimilation in%	100%-86%	85%-71%	70-55%	54%-37%	36% и ниже
1	The theoretical part	20-17,2 ball	17-14,2 ball	14– 11 ball	10,8 -7,4 ball	7,2 ball
2	Analytical part:	15-12,9	12,75- 10,65	10,5-8,25	8,1-5,55	5,4
3	Organizer	15-12,9	12,75- 10,65	10,5-8,25	8,1-5,55	5,4
4	Test	40-34,4-ball	34- 28,4ball	28-22ball	21,6-14,8 ball	14,4 ball
5	The practical part	10-8,6	8,5-7,1	7,0-5,5	5,4-3,7	3,6 ball

Chronological Map of Exercise:

№	Step lessons	Type of activity	time min.	break
1.	Check	Notebook, the degree of participation of students Topic, purpose and objectives. Plan, references	5min. 5 min 5 min 5 min.	

		Introduction to the assessment criteria		
2.	The theoretical part	Discussion, brainstorming business game "Web"	15 min. 15 min	5 min
3.	Analytical part	Tests and solving situational problems, drafting organizers, organizer Cluster Visual aids	20 min 15 min	
4.	The practical part	Conducting skills and conclude its work	20 min. 15 min	10 min
5	Total	Analysis of theoretical issues, assessment, homework and self-study	10 min. 5 min	

10. Questions:

1. Classified as materials for root canal?
2. What features should have a filling materials for root canal?
3. List the plastic filling materials for root canal?
4. List does not harden plastic filling materials for root canal?
5. List the major disadvantages netverdeyuschih filling materials?
6. Composition of antiseptic pastes canal filling?
7. Disadvantages hardening filling materials for sealing channels?
8. The method of mixing phosphate cement to seal the channels?
9. Paratsina method of preparation?
10. Endodenta method of preparation?
11. What are the pins?
12. Pins are used for what?

11. Recommended Reading

Summary

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