

**MINISTRY OF HIGHER AND SECONDARY SPECIAL EDUCATION OF
THE REPUBLIC OF UZBEKISTAN, MINISTRY OF HEALTH
BUKHARA STATE MEDICAL INSTITUTE
DEPARTMENT OF SURGICAL DENTISTRY**

**“Approved by”
Vice-rector for
educational and educational affairs
Phd ass. prof.. _____G.J.Jarilkasinova
“_____” _____ 2020.**

**FROM THE SUBJECT OF DENTAL IMPLANTOLOGY
EDUCATIONAL-METHODICAL COMPLEX**

Field of knowledge: 500000 - Health and social security

Education: 510000-health care

Direction of Education: 5510400-Dentistry

Bukhara 2020

Compiled by:

Kamalova M.Q. - Head of the department of surgical dentistry , PhD Bukhara medical institute.

Reviewers:

Kamalova F.R. - Head of the department children's dentistry , PhD ass. prof Bukhara medical institute.

Olimov S.Sh. - Head of the Department of Orthopedic Dentistry, DSc Bukhara State Medical Institute.

This is discussed and approved in the department
Protocol № _____ of “ _____ ” _____ 2020

Head of the chair, PhD: M.Q. Kamalova _____
(signature)

Chairman of the council, dean of _____
Faculty _____
(signature)

The working educational program for anatomy is compiled on the basis of working educational curriculum and educational program in directions of 5510400- Dentistry.

This is discussed and approved by the scientific- methodological Council of BSMI

Protocol № _____ of “ _____ ” _____ 2020

Methodist of the Institute: _____
(signature)

ANNOTATION

The educational and methodological complex includes theoretical and practical knowledge of the main sections of the subject "Dental Implantology", for the introduction of modern pedagogical technologies in the educational process, it allows for self-diagnosis of patients by combining acquired skills with theoretical knowledge in clinical practice using modern medical technologies. In accordance with the goals and objectives of the program, a clinical dentist will be formed, which will become a mature, competitive, independent clinical dentist, combining the knowledge and practical skills acquired during the processes of horizontal and vertical integration.

Dental implantology is related to the medical sciences, with the aim of studying the history of dental implantology, equipment used for dental implantation, to prepare patients for surgery, modern examination methods and features of dental implantation in the upper and lower jaw. Provides the foundation.

This course is based on knowledge gained in the fields of biophysics, medical chemistry, anatomy, physiology, histology, microbiology, therapy, clinical allergology, pharmacology and surgery.

The educational and methodical complex is intended for assistants, researchers, researchers and students of the 4th year of the dental faculty of medical institutes.

LECTURE

Introduction to dental implantation, history of implantation. classification of implants, materials used in the implementation of implants. dental implantation and analysis. features of dental implantation in the past and present. classification of high large alvolution global classification, dental implantation and plastic indications.

Stages and duration of work	Teacher	Students
Preparatory stage (10 minutes)	<ol style="list-style-type: none"> 1. Preparation of educational content on the topic. 2. Preparation of the lecture slides to be shown. 3. Develop a list of references in the study of the subject. 	
1. Introduction to the lecture (15 minutes)	<ol style="list-style-type: none"> 1. Introduces the purpose and objectives of the lecture The purpose of the lecture: to study the history of dental implantology, equipment used for dental implantation, to prepare patients for surgery, modern examination methods and features of dental implantation in the upper and lower jaw. Objectives of the lecture: to discuss with students: <ol style="list-style-type: none"> 1. Classification and comparative frequency of inflammatory processes of the maxillofacial region. 2. Etiology, pathogenesis, clinic of periostitis, osteomyelitis and clinical and radiological forms of chronic periodontitis. 3. Analyze surgical methods for the treatment of chronic periodontitis (root apical resection, amputation, hemisection), periostitis and osteomyelitis. <p>Plan of the lecture:</p> <ol style="list-style-type: none"> 1. Types of dental implantology. 2. Periodontitis and its features. 3. Periostitis and its complications. 4. Osteomyelitis. 5. Differential diagnosis, treatment in a polyclinic. 6. Prevention of inflammatory processes of CHLO. 	<p>Listening</p> <p>Answer the questions asked</p>
2-main stage (55 minutes)	<ol style="list-style-type: none"> 1. Explanation of the topic, slide show. 2. Use of posters. 	<p>Listening</p> <p>Listening</p>
4-the final stage (10 minutes)	<ol style="list-style-type: none"> 1. Make a final conclusion. 2. Set an independent work. 3. Set your homework. 	<p>Listening</p> <p>Recording</p> <p>Recording</p>

Content of the lecture

The Emperor implanted dental implants in Egypt, Central America, and China B.C. and the nineteenth century.

From the end of XIX century there was a scientific basis for dental implantation.

I. Mahillo, H. Edmunds (1886, 1887), A. Hartmann (1891), N. Znamenskiy (1891) (in the form of gold, silver, platinum, porcelain, etc.).

R. Adams (1937) Screw implant.

A. Strock (1939) screw (made of cobalt, chromium and molybdenum).

E. Vares (1955) City of Brahman (1956) a Plastic implant.

Links L. (1967) Saucer plate.

P. Branemark (1967) Spiral implant.

Until the 1940s, dental implants were mainly used.

In 1978, the Harvard Confederation restricted implantation. International Conference on Implantation in Frankfurt am Main (Germany), 1988, Full implantation is recognized and used in wider practice.

Ex? In the USSR 80-ies of O. stern and A. Cernica made a great contribution to the development of dental implants.

The bone is the basis of the body and performs its function, limited by the maximum pressure in shape. Bone performs three main functions in the body: mechanical (basic), protective and metabolic. Bones are rich in minerals and are involved in the metabolism of organs. Therefore, bone is a living tissue that feels exogenous effects. Bone consists of bone marrow, bone tissue, chest, mouth, and nerves. Bone marrow is actively involved in bone regeneration and regeneration. The bone marrow consists of external fibers and internal osteogenic origin. The surface collagen fibers also form elastic fibers. Internal osteogenic air is involved in bone regeneration during bone formation by forming an osteogenic cell

Depending on the type of implantation:

1. bone:
2. Have andosol
3. endodont-endosseous
4. Subcostal
5. Or on the bone
6. Ined combined

Depending on the implantation task:

1. filler
2. support
3. Supporting
4. Adjustment adjustment of depreciation
5. No depreciation adjustment

According to the shape of implants:

Flat Ass (Link, 1967)

1. cylinder
2. Screw (Branemark 1967)
3. Materials used for the preparation of implants.
4. Biotolerant materials:

5. stainless steel,
6. cobalt chromium

Bioinert materials: Aluminum ceramics

- * carbon
- * titanium
- Nic titanium nickelide
- * Bioactive materials:
- * * Ical tricort acid phosphate
- * * Ro hydroxyapatite
- * Glass ceramics

According to the method of implantation:

1. single-stage
2. two-stage
3. Direct input;
4. Delay;

The patient completed prior to dental implantation surgery should be checked.

- Anamnesis, general clinical examination (blood and urine), oral cavity (assessment of teeth, alveolar mucosa, oral mucosa, appearance of teeth, lower jaw, oral cavity condition) X-ray examination of the system (prenatal radiography, orthopantography, computed tomography), instrumental studies (measurement of the width of alveolar growth) using various metals to determine the electrogalvanic potential before implantation and prosthetics.
- ventilation of the oral cavity before planning implantation (removal of teeth and their loss, treatment of periodontal disease and dental caries); Determine the structure of the abdomen, the height and width of the alveolar tumor or its atrophy, the distance between the lower or lower jaw of the alveolar edge and the upper jaw.
- surgical means in the presence of scars on the mucous membranes, plastic restoration of the brachial cavity of the mouth or preparation of the patient for orthopedic treatment (normalization of the tooth, correction of tooth deformity).

Indications for dental implantation

In the numbers that appear on the last and frontal teeth;

With complete loss of the tooth, in the absence or atrophy of the alveolar process;

Patients who do not use removable dentures.

Absolute total injection:

- chronic diseases of the body (tuberculosis, collagen, autoimmune disease-rheumatoid arthritis or Segrin syndrome);
- severe diseases of the facial system;
- endocrine disorders (diabetes, toxic goiter, pituitary gland and adrenal dysfunction);
- dysplasia, osteopenia, osteoporosis;
- diseases of the connective tissue system (red volcano, scleroderma);
- blood diseases and diseases of the hematopoietic organs (leukemia, agranulocytosis, coagulopathy, anemia);
- mental diseases (psychosis, neurosis);
- mild illness;
- chronic alcoholism;
- drug addiction;
- malignant tumors - incurable tumors, patients receiving high doses, patients undergoing chemotherapy.

Relative general indication

- beriberi;

- respiratory diseases;
- specific diseases-syphilis, actinomycosis;
- early detection of malignant neoplasms of the 1st degree of the maxillofacial region after radiation therapy;
- dysproteinemia, protein disorder;
- dysmenorrhea;
- pregnancy;
- infectious diseases;
- deterioration of the general condition of the body-increased pressure on the body;
- relapse of chronic diseases in the tissues and tissues.

Absolute instruction against the local

- the soft face of a skeleton? malignant tumors of tissues and bones;
- Good quality and swelling of the jaw (dysplasia);
- post-radiation necrosis of the jaws (osteoradionecrosis);
- precancerous diseases of the mouth and lips;
- Metal equipment and implants are not compatible with the body;
- progressive inflammation of the parasitic tissue of idiopathic diseases (Papiano-Lefebvre syndrome);
- systemic defects of the joints of the maxillofacial region;
- reduced oral hygiene in the patient.

Local Relative Instruction

Chronic recurrent disease (periostitis and periodontitis) acute diseases (abscess phlegmons) of the jaw and soft in the recruitment process;

For instant dental rehabilitation;

Global destructive processes (osteomyelitis, cyst);

Ing Gingivitis, stomatitis, tonsillitis, gaymorit;

Davolash After treatment of diseases of the peripheral nervous system (neuralgia, neuritis);

Lower back stretch marks? diseases (arthritis, arthrosis, pain dysfunction).

Ronic chronic recurrent disease (periostitis and periodontitis) acute diseases (abscess phlegmons) with inflammation of the jaw and soft tissues;

Iq Poor dental sanitation;

Destructive processes of the jaw (osteomyelitis, cyst);

Ing Gingivitis, stomatitis, tonsillitis, gaymorit;

Davolash After treatment of diseases of the peripheral nervous system (neuralgia, neuritis);

Prevention of diseases of the lower jaw (arthritis, arthrosis, pain dysfunction).

Bone architecture is the ratio of the number of structural elements of the porch and the compact layer.

the bones of the upper and lower jaw are not identical

American specifications According to BUSIGIN (1962), the compact layer of the alveolar tumor of the lower jaw was 50.1% and 49.9%;

The compact layer of the upper jaw is 27-30%, and the cavity is 70-72%;

Thus, the compact and porous layer of the lower jaw is 1: 3, and the compact and porous layer of the upper jaw of the alveolar cavity is 1: 3.

Grade 1 bone tissue is an almost completely uniform compact layer. This class includes the frontal area of the lower jaw and partially the lateral area, and the frontal area of the upper jaw is uniform compact. Osteoporosis occurs in the bone when functional pressure decreases.

Grade 2 compact jaw bone is thick

well-developed porch

the earth's crust. Because this class is 1: 1 below small and large ounce implantation in the teeth area. This class of bones is found in the region of the upper jaw and in the region of the premolar teeth.

Grade 3 of bone tissue is 1: 3. A thin compact layer of jaw bone is located around a developed porous layer. This species occurs in the premolar region of the lower and upper jaw.

A thin compact layer of class 4 jaw bone is located around a porous layer with a small density of trabecular meshes. Compact and porcelain 1: 4. Compact sheet 1-4 mm. Its torso consists of a thin trabecular elastic mesh. A thin compact layer of the 4th jawbone is located around a porous layer with a small density of the trabecular mesh. Compact and porcelain 1: 4. Compact sheet 1-4 mm. Its torso consists of a thin trabecular elastic mesh.

CONSTRUCTION OF DENTAL IMPLANTS

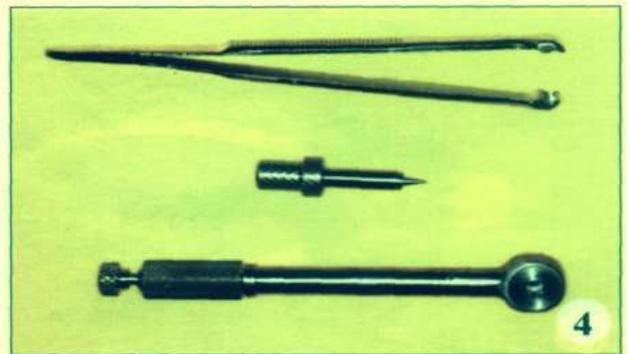
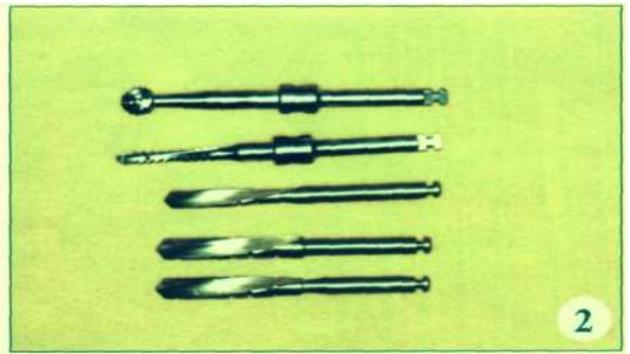
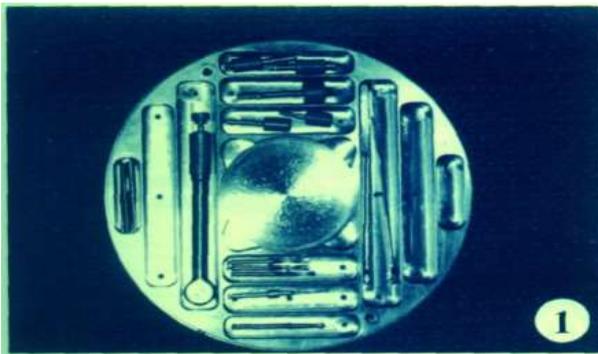
Implant the body

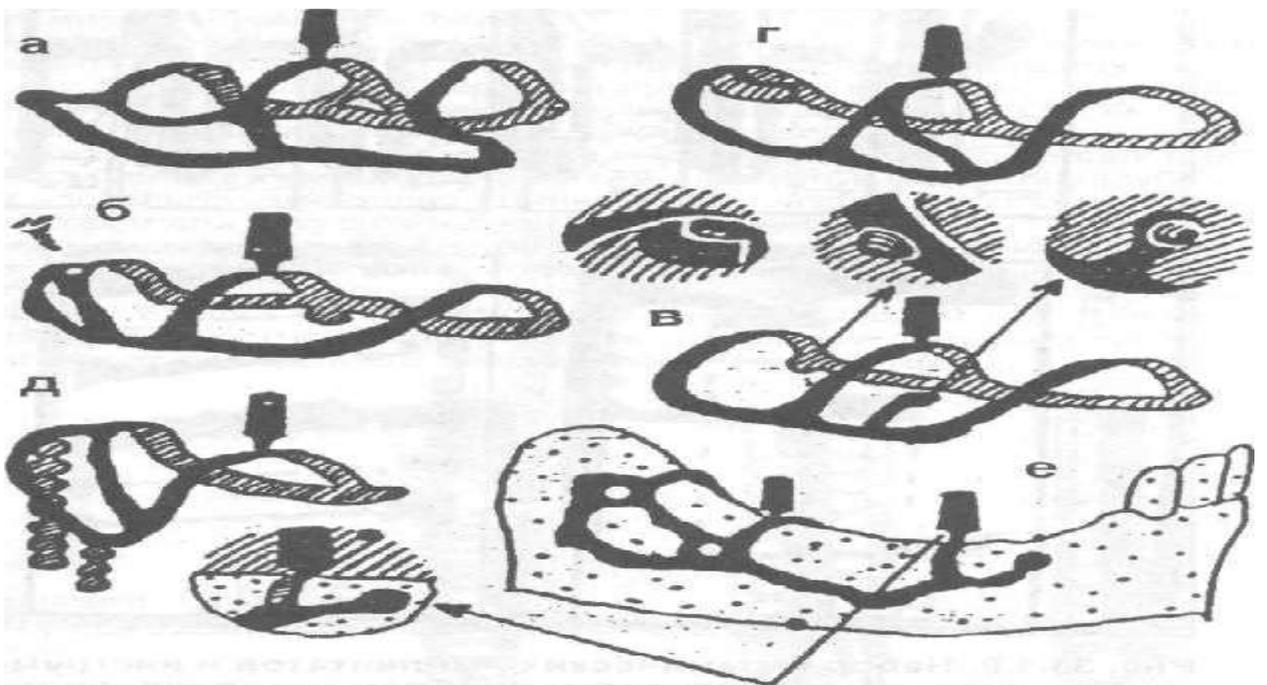
The implant neck

Implantation of the implant / abutment /



Implantation equipment and tools







Before implantation, the patient will be examined in accordance with the rules adopted in dentistry, including by a surgeon and orthopedic surgeon. The positive status of the patient is always associated with local complications, general diseases and systemic pathology. Attention is paid to complaints such as bruises, pain in the opening and chewing of the mouth, frequent bleeding of the gums and sensory abnormalities of the oral mucosa.

Anamnesis of diseases of the mucous membrane and oral cavity will be revealed, as well as procedures and results of treatment of the patient will be studied. When and under what conditions the tooth is removed, the reasons and evening basics will be taken into account. Changes in the position of the facial joints during dental implantation include a clear reflection of natural tissues, opening of the oral cavity, deformation of the lips, and the dorsal aspect of the jaw. Proper and adequate use of implant systems can help prevent aesthetic leaks. However, the observed changes may be abnormal and may occur both throughout the body and locally. These changes are taken into account when developing an implant treatment plan. During the inspection the front part of the mouth, the color and moisture of the mucosa, the depth of the mouth, position of the joints and free of gums, upper and lower lip, the wrinkles and muscles in the mucosa; it also focuses on the degree of attachment of the facial and other muscles. When looking at the tongue of the alveolar part of the lower jaw, you can give an idea of the position of the curved line and the muscles of the jaw that start from the inside of the lower jaw.

For the same reason, in some cases, it is necessary to undergo preliminary preimplantation: plastic surgery of the tongue and larynx, incision of the mucous membrane and muscle tube, as well as smoothing of sharp edges. In the case of central occlusion, the ratio of the teeth of the lower jaw and the upper jaw with a closed mouth and the condition of the tooth are evaluated. Irregular bites (deep, open, and intersecting) are important when implanting instructions. Implants include physiological types of teeth (the offspring, prognathia, bobrovnya and right teeth). These characteristics should be studied by the orthopedist in terms of the use of implants as support for dentures. Approximate reflection of functional and aesthetic disorders on the periphery of the oral cavity and their origin, bone size and configuration of alveolar tumors, the state of the surrounding mucosa, the function of facial muscles and masticatory muscles, - initial information about the state of the lower jaw, the ratio of the upper and lower jaw.

Based on the results of the examination, recommendations and contraindications to dental implantation are established. During the initial clinical examination, obvious contraindications can be identified due to the presence of caries and periodontitis, periodontal diseases, poor oral hygiene and damage to the oral mucosa. In some cases, pathological changes (caries and its complications, periodontitis, poor oral hygiene) are considered relatively contraindications to implantation after oral administration. In other cases (diffuse periodontal disease, diseases of the oral mucosa, etc.), contraindications are not changed.

Dental implantation can be performed in orthognathic or other forms of physiological dentistry. After a thorough examination of the dental status in the context of future orthopedic treatment, the orthopedic surgeon will evaluate the jaw model, including occlusion.

A comprehensive assessment of these data will allow you to determine the conditions for implantation. Sometimes hidden anomalies of the masticatory system are detected, and there is a suspicion of dental implantation.

Clinical studies are always supplemented with radiological data. Often used dental, panoramic photos, zoning of the jaws, orthopantomograms. Recently, simple and computed tomography is becoming more and more popular. In foreign countries, they are sometimes used in addition to magnetic resonance imaging. Computer and magnetic resonance imaging provide accurate information on three levels. Volumetric and mathematical data on the bones, mandibular canal and pore opening, topography of the upper jaw and, most importantly, the properties, quality and thickness of the bone. Computed tomography is an important diagnostic implantation in patients who do not have teeth. Visualization of the beads using implanted beads allows you to reflect on the integrity of the bone cavity and proper treatment. Primary clinical and radiological diagnosis is important in assessing the state of the gastrointestinal tract.

Several classifications have been proposed for the classification of the condition of jaws without teeth - Addwood Kennedy (1928) and Atwood (1971, 1977), U. Linholm and G. Zarb (1985) for dental implants, S. Misch and K. Judy (1987). Anatomical criteria are used to photograph the jaw. When diagnosing and planning dental implants, it is necessary to take into account the anthropometric parameters of the jaw bone, as well as perform mathematical modeling based on clinical, radiological data and the creation of three-dimensional samples for RCT and YMR.

Based on the classification data and various bone characteristics, the method of osteotomy and implantation was chosen. When the bone structure is dense and compact, it must be suspended to maintain sufficient rotation speed and cool down. If the bone structure is particularly porous in the upper jaw, it is necessary to drill carefully and avoid pressure without expanding the implant area. Otherwise, the upper jaw may be punctured and the lower alveolar nerve may be damaged. These characteristics of different parts of the upper and lower jaws were taken into account in the subsequent classification developed by S. Misch (1990). According to him, the bone is highly functional, including the ability to adapt to various injuries and loads. They cause bone remodeling and remodeling, but the absence of overload preserves the physiological properties of the bone. According to the author, progressive treatment during implantation provides adaptation of the bone. Successful results can be achieved by proper evaluation of loads on the bone: a thorough osteotomy, implantation without injury, adequate bone stability and adequate load after the second surgical procedure. The assessment of the clinical condition of the upper jaw and the alveolar part of the lower jaw is supplemented by the results of measuring the thickness of the mucous membrane. A comprehensive diagnostic assessment allows you to identify implants, select the type of implant and the number of implants, and develop a plan for both temporary and permanent orthopedic surgery. The choice of implants and their size depends on the conditions in the oral cavity and the future tasks of

dentures. Given the large number of implant structures, it is important to consider the effects of different clinical treatments rather than the manufacturer's recommendations.

Assessment of the general state of health includes anamnesis data, blood and urine tests, and conclusions of the therapist.

Preliminary clinical X-ray diagnostic assessment of the state of the jaw system confirms the need for implantation in the elimination of functional and aesthetic disorders, allowing to determine the size, quality and configuration of the implanted bones.

Soft tissues for implantation and osteotomy begin only when there is enough soft tissue for implantation. If there is a leak, then additional operations are required.

These include:

- lack of conditions for implantation
- lack of tissue to close
- the presence of a bone defect.

The alveolar maxilla, especially the porous substance with the vestibular side with a thin cortical layer, consists of a sparse structure and also reflects the reaction of the bone to the chewing pressure of the upper jaw.

Clinical studies are supplemented by regular X-ray examinations. More dental, panoramic, zonograms and orthopantomograms are used, sometimes computed tomography or magnetic resonance imaging can be used.

Orthopantomography is used in the initial examination, which can give more information. All these tests should be used in the standardization and dynamics of implantation [Rabukhina N. A. et al., 1993, 1999]. All images should be treated the same and treated the same.

The orthopantomogram shows the quality, height, proportion of adjacent spaces of the nasal cavity, the location of the lower jaw and the location of the lower jaw. An orthopantomogram with a plate with special metal markers shows the true height of the occlusal plate. [Misch S, 1993; Spiekerman E., 1995].

However, in 20-30% of cases, orthopantomography does not give accurate results [Shimura M. et al., 1990]. For this reason, additional right or side projections are photographed, and the location and position for implantation is selected. Computed tomography and magnetic resonance imaging provide results in three levels. Detailed information about the thickness of the lower and upper jaw, volume, topography of anatomical formations and, most importantly, the thickness and quality of the jaw.

V. Y. Kurlandsky (1977) described maxillary stretching and showed that in the photo-rotation model, different groups can move under the influence of tooth function.

U. Lekholm and G. Zarb (1992) showed that levels I - IV have bone density: level I is relatively dense, IV is very soft. According to cephalometric X-ray images, these authors diagnose alveolar tumor forms A, B, C, D and E.

The orthopantomogram provides visualization of the height, quality of the bone, the bottom of the upper jaw, the opening of the duct and canal of the lower jaw, as well as 2 alveolar arches. [Misch S, 1993; Spiekerman E., 1995].

However, in 20-30% of cases, the orthopantomogram does not provide accurate information (bone size, quality, lower jaw, upper jaw, etc.). [Shimura M. et al., 1990]

W. Lekholm and G. Zarb (1992). The thickness of the bones of I-IV levels is different. I degree dense bone, IV degree-sparse bone. The same authors classify the alveolar cavity ABCDE and make a diagnosis using cephalometric radiography.

After the removal of the upper jaw teeth, atrophy of the alveolar tumor develops along the corridor. The resorptive nature of the alveolar tumor is most often observed with the loss of central teeth and occupies a section of the cornea of the alveolar process. This aligns to the sky and aligns the corridor. This reflects the formation of the alveolar arch. This bone atrophy causes a change in the profile of the face. The lower jaw has a pneumatic, sclerotic and combined type, depending on the degree of pneumatization of the upper jaw. The upper jaw cavity has a different relationship with the lower teeth. Sometimes it is close to the bottom, can penetrate and not reach the bottom.

Anthropometric studies of A. Ivanov (1991) show that the distance from the top of the tip of the upper jaw to the tip of the root tip is 7.4 mm. The nearest tooth cavity is 6! 6. The average thickness of the bone in the roots of the lunge is 2.05-2.02 mm, in the area of the root of the palate - 2.02 mm.

The distance between the cavity and the implant should be at least 1-2 mm, but with atrophy and tooth loss, it approaches the alveolar larynx and can be separated by a thin bone plate. This complicates dental implantation. In some cases, the abdomen rises or, in addition, the floor of the cavity rises.

Implantation of the upper jaw has a number of features. First of all, implantation of the maxillofacial artery and upper jaw with venous entanglement of the upper jaw.

According to K. Hoffman (1995), although there is a distance between the artery and the vena cava, the distance between them during atrophy approaches. Features of the pelvic organs and bone atrophy in aden This should be taken into account during implantation. The lower jaw can bend the alveolar axis and look at the surface of the oral cavity. There are no teeth in the distal part of the jaw. This is where the quality of the bone is taken into account. Especially important is the inner muscle of the wing. If the alveolar part of the lower jaw is thin or peripheral, the tongue wall may be broken during implantation. In addition, damage to the tongue nerve in this case is likely to result in damage to the inferior alveolar nerve in the first molar and second premolar region.

Based on the classification data and various bone characteristics, the method of osteotomy and implantation was chosen. When the bone structure is dense and compact, it must be suspended to maintain sufficient rotation speed and cool down. If the bone structure is particularly porous in the upper jaw, it is necessary to drill carefully and avoid pressure without expanding the implant area. Otherwise, the upper jaw may be punctured and the lower alveolar nerve may be damaged. These characteristics of different parts of the upper and lower jaws were taken into account in the subsequent classification developed by S. Misch (1990). According to him, the bone is highly functional, including the ability to adapt to various injuries and loads.

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dentures. Given the large number of implant structures, it is important to consider the effects of different clinical treatments rather than the manufacturer's recommendations.

Additional operations on dental implants. Osteotomy for implantation and soft tissue shift are performed if there is enough bone or soft tissue for the implant. If the texture is not enough, you can eliminate it with additional operational methods. In other cases, the soft tissues of the upper and lower jaw of the upper jaw and additional operations are necessary on the bone marrow. This occurs when there is enough tissue in the implant or not enough tissue to close it. Additional dental implants are divided into two groups: bone interventions and soft tissue interventions. Examples of oral soft tissue interventions include vestibuloplasty and mucosal free displacement. In dental implantation, auto- and allografts are used in the absence of bone tissue, artificial bones are used - tribasic acid phosphate, hydroxylapatite and other biomaterials, as well as nonabsorbing and absorbing membranes. Plastic surgery with autogenic bone grafts. It is used in cases of bone atrophy during implantation, mainly in the distal parts of the bone, near the lower jaw, alveolar larynx and in the oral cavity. The graft material is used as the ilium, cavity, retromolar region of the lower jaw, or upper jaw area. In addition, canned bone is used for bone plastic

One example of pre-implantation is a change in the position of the nerve of the lower limb and the pelvic nerve. At the same time, removable membranes, cryogenic bones, etc. can be used. In cases of severe atherosclerosis, plastic surgery of the upper jaw, alveolar process of the larynx, nasal cavity and gamma cavity are common. As a result of surgical intervention it is possible to raise the nose or upper jaw, to change their position and enlarge the upper jaw. The results of such operations can reach 94.4% -100%. In the upper jaw, autosuplication, demineralized bone, combined bone grafts (osteogenon, osteogenon and collagen, osteogenon and blood, autosuuk and hydroxylappatite) are used.

Sinus-lifting - lifting the base of the gamma cavity.

There is a gap in the upper jaw that can be pneumatized, sclerotized and combined. The bases of the Gamor cavity may have different proportions with the roots of the upper jaw: they are either close to the cavity, or are penetrated, or never reach it.

As a result of anthropometric measurements by A. S. Ivanov, the distance between the bottom of the middle cavity and the root of the tooth was 7.4 mm.

The upper jaw is implanted under the cavity. The distance between the cavity and the implant should be at least 1-2 mm. However, when the teeth are removed or in the surrounding area of the alveoli, the implant and cavity remain close together, leaving only a thin plate. This complicates dental implantation. In this case, the bottom of the cavity is raised by biomaterials.

Autosuyak, demineralized bone, combined bone grafts (osteogenon, osteogenon and collagen, osteogenon and blood, autosuyak and hydroxylappatite) are used to lift the oral cavity or to expand the upper jaw.

Placental implants are often single or combined. The implant consists of the intra-abdominal part - the body, the chest and the upper parts - the head or head (stamp). The body has a different structure and is rectangular in cross-section. The height varies from 8 mm to 15 mm and the length from 15 mm to 30 mm. The body consists of several cuts, and the lower lobe is wavy.

In addition, flat implants can be used in combination with natural teeth as a support for dentures. The prosthesis can be performed within 3-4 weeks after surgery.

Implantation of implants is performed after patient preparation, premedication and local anesthesia of the peripheral branches of the tertiary nerve.

Sterility should be maintained during implantation (surgical methods, sterilization of instruments, materials, gloves).

The incision is made along the alveolar surface, where the mucosa and bone marrow are dissected and separated. Once the bone is exposed, its position, color, and cortical layer are checked. Irregularities on the surface of the bone should be leveled during the scan. Smoothing is performed by milling or using an existing machine with simultaneous cooling. If more than one implant is installed, the distance between them should be at least 3 mm.

Bone cysts are removed from the canal using a special device. The cavity is washed with saline. Once the implant is formed, the implant is inserted into the cavity and the beat is beaten until the implant is fully formed. If the implant is difficult to insert, the implant will be removed and the cavity enlarged.

The use of toothpicks is widely used in all countries. Both screw and cylindrical implants are used.

Dental implants distinguish between both submerged and unobtrusive types and distinguish between one or two stages.

Single-stage implants are positioned so that the alveolar surface of the mouth is located in the oral cavity. Submersible implants are often used with screws and cylinders.

At the first stage, the implant is inserted into the bone.

Screw implants have the following advantages:

- 1) the osteotomy technique is simple and relatively atraumatic when installing the implant;
- 2) implant length and thickness options allow you to choose the thickness, width and quality of the bone;
- 3) create a good place for implantation and ensure good bone healing;
- 4) Different shapes of the implant surface provide thickening of the bone;
- 5) The fact that blood consists of many elements ensures good epithelization of soft tissues.

Two-stage implants open after 4 months in the lower jaw and after 6 months in the upper jaw. Once it is opened, excess bone tissue is removed and the surrounding area of the implant is thoroughly cleaned. After that, it is sewn up again.

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Advantages of implants:

- 1) The implant can be inserted into a thin hand ball;
- 2) the implant does not penetrate deep into the bone, so it is unlikely that the gamma cavity, nasal cavity and lower extremities are damaged;
- 3) minor bleeding avoids perforation and damage to the alveolar process;
- 4) wide effect of the implant surface with bone ensures good fixation;
- 5) Most of the pores in the body are comfortable to penetrate the bones and provide stability;
- 6) Implants are easily tied and take the necessary shape.

In addition, flat implants can be used in combination with natural teeth as a support for dentures. The prosthesis can be performed within 3-4 weeks after surgery.

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Sterility should be maintained during implantation (surgical methods, sterilization of instruments, materials, gloves).

The incision is made along the alveolar surface, where the mucosa and bone marrow are dissected and separated. Once the bone is exposed, its position, color, and cortical layer are checked. Irregularities on the surface of the bone should be leveled during the scan. Smoothing is performed by milling or using an existing machine with simultaneous cooling. If more than one implant is installed, the distance between them should be at least 3 mm.

Bone cysts are removed from the canal using a special device. The cavity is washed with saline. Once the implant is formed, the implant is inserted into the cavity and the beat is beaten until the implant is fully formed. If the implant is difficult to insert, the implant will be removed and the cavity enlarged.

The use of toothpicks is widely used in all countries. Both screw and cylindrical implants are used.

Dental implants distinguish between both submerged and unobtrusive types and distinguish between one or two stages.

Single-stage implants are positioned so that the alveolar surface of the mouth is located in the oral cavity. Submersible implants are often used with screws and cylinders.

At the first stage, the implant is inserted into the bone, which is sutured through the mucous membrane and the surface of the bone. In the second stage, the suture section is opened and various structures are placed on the implant.

Screw implants have the following advantages:

- 1) the osteotomy technique is simple and relatively atraumatic when installing the implant;
- 2) implant length and thickness options allow you to choose the thickness, width and quality of the bone;
- 3) create a good place for implantation and ensure good bone healing;
- 4) Different shapes of the implant surface provide thickening of the bone;
- 5) The fact that blood consists of many elements ensures good epithelization of soft tissues.

Two-stage implants open after 4 months in the lower jaw and after 6 months in the upper jaw. Once it is opened, excess bone tissue is removed and the surrounding area of the implant is thoroughly cleaned. After that, it is sewn up again.

Additional procedures for dental implantation are performed if the osteotomy and soft tissue implantation are sufficient to ensure that the bone or soft tissue is sufficient for implantation. If the texture is not enough, you can eliminate it with additional operational methods. In other cases, the soft tissues of the upper and lower jaw of the upper jaw and additional operations are necessary on the bone marrow. This occurs when there is enough tissue in the implant or not enough tissue to close it. Additional dental implants are divided into two groups: bone interventions and soft tissue interventions. Examples of oral soft tissue interventions include vestibuloplasty and mucosal free displacement. Dental implants use auto- and allografts, artificial bone acid phosphate, hydroxylapatite and other biomaterials in the absence of bone tissue, as well as non-absorbent and permeable membranes. Membranes are used for implantation of bone defects, rupture of implanted walls, poor quality of bone in the

implant, removal of sutures and implantation immediately after tooth extraction and peri-implant development.

Plastic surgery with autogenic bone grafts. It is used in cases of bone atrophy during implantation, mainly in the distal parts of the bone, near the lower jaw, alveolar larynx and in the oral cavity. The graft material is used as the ilium, cavity, retromolar region of the lower jaw, or upper jaw area. The main condition for the plasticity of an autogenous graft in combination with implantation at the same time is the soft tissues available for closing the implant and the implant. In addition, a combination of canned allogeneic bone graft and alloying alloy is used for bone plastic. The latter can be used in combination with plastic materials based on hydroxyapatite and collagen.

One example of pre-implantation is a change in the position of the nerve of the lower limb and the pelvic nerve. At the same time, removable membranes, cryogenic bones, etc. can be used. In cases of severe atherosclerosis, plastic surgery of the upper jaw, alveolar process of the larynx, nasal cavity and gamma cavity are common. As a result of surgical intervention it is possible to raise the nose or upper jaw, to change their position and enlarge the upper jaw. The results of such operations can reach 94.4% -100%. In the upper jaw, autosuplication, demineralized bone, combined bone grafts (osteogenon, osteogenon and collagen, osteogenon and blood, autosuuk and hydroxylapatite) are used.

Since the material is often inadequate, the auto-switch is used in combination with hydroxylapatite, ceramics, and plastic materials.

Reconstruction of the upper jaw requires removal of the following requirements: All surgical procedures should be most appropriate. Implantation of the transplanted material should form a bone that can be absorbed and tightly bound to it. Resorption of fresh bone should not exceed 1.49 mm in the first year after surgery and 0.1 mm in each subsequent year. All surgical interventions should not cause inflammation of the upper jaw.

In the upper jaw, the implants were implanted into the bone under the cavity.

The distance between the implant and the cavity should be at least 1-2 mm, but when the teeth are removed and the bone is surrounded, it is closer to the alveolar jaw of the jaw and is separated only by a thin bone plate. This complicates implantation and requires surgical abortions or sinus biomaterials. Implantation of the distal part of the upper jaw has a number of features. First of all, it is important to take into account the proximity of the inner jaw and its injury to implantation. Secondly, it is important to keep in mind that there is a canonical venous opposition in the upper jaw. Although there is a distance between the arterial and venous clots, this distance is significantly reduced when peripheral bone is implanted. The individual characteristics of these cases should be taken into account during implantation. First of all, the maxillary alveolar zone can flow both in the vestibular and in the middle. Usually, the teeth are not located in the distal part of the lower jaw. In this area, the bones may differ in shape and quality; internal contraction of the canal muscles is of great importance. If the lower jaw is distal and narrow, the implant may be perforated or the tongue wall may be broken. In addition, in this case, there is a risk of damage to the lingual nerve. The location of the lower jaw and vascular nerve during implantation in the area of the molars and the second premolar area of the lower jaw is important.

On the periphery of the lower jaw, the lower jaw is displaced to the tongue. Significant bone atrophy leads to the opening of the nerve and perforation of the inner hole, and they remain on the surface of the alveolar arch. When they are injured, they can have complications such as

bleeding or nerve damage. In addition, the perforation of the nerve of the lower limb can affect the implantation and functioning of the prosthesis of orthopedic structures. In other cases, it may require implantation after initial elastomeric plasticity, a change in nerve position, and other operations. Atrophy of the lower jaw is caused by a porous fashion. After tooth extraction, the lingual part of the elbow is first rotated. In this case, the hand-shaped edge is often shaped like a knife blade. Later it is flattened in height. In the area of the symphysis, a flat arm is formed with a sharply elongated coastline.

There are several classifications for the evaluation of a toothless jaw-Kennedy (1928), A. Atwood (1971-1977) and W. Linholm, G. Zarb (1985) - for dental implants, K. Mish and K. Judy (1987). Use of maxillofacial anatomical criteria based on X-ray images. When diagnosing and planning dental implantation, mathematical modeling of RCT and YMR should be performed, taking into account the anthropometric parameters of the jaw bone and clinical radiological data. Osteotomy and implantation are selected on the basis of different classifications and characteristics of bone. For example, sharpening the bone of a compact substance can be performed by replacing the cooling, but maintaining the speed of rotation. If plaque is rare, it is usually found on the upper jaw, where bone stiffness is performed without the use of cushioning or high-pressure implantation. Otherwise, it can lead to perforation of the gamma cavity and damage to the alveolar nerve. The same features are described in the classification of C. Misch (1990).

Comprehensive evaluation of diagnostic tests allows you to identify implants, choose the number and implantation of implants, develop a surgical intervention plan and choose temporary or permanent orthopedic treatment. The choice of implants and their number depends on the condition of the oral cavity and on the function of the dentures. Taking into account the consequences of the implant design, it is necessary to rely on the results of treatment in various clinical situations, and not on the manufacturer's recommendations.

The need for prosthetic surgery is due to several factors, including atrophy of the alveolar process of the upper jaw and the alveolar part of the lower jaw with the loss of natural teeth. In some patients, the processes of bone atrophy may be associated with concomitant diseases and changes in organs - systemic diseases, bone osteoporosis (including menopausal and post-climatic periods). Bone atrophy is also affected by local factors. First of all, this is an injury when removing a tooth and removing one of the walls of the alveoli. Bone loss can also be caused by poorly designed prostheses.

In addition to the general and local factors that cause bone atrophy during prosthetics, anatomical features of the jaw structure can present difficulties. They can be caused by atrophic processes, as well as the type and development of the facial skeleton. During prosthetics, bone tissue can also have a number of disadvantages. After tooth extraction, the alveolar mucosa may become excessive. In addition, when teeth are removed, the bone often becomes uneven due to the displacement of the vestibular walls of the alveoli. Poor prosthetic conditions also often cause atrophic processes in the vertical and anterior and posterior bones of the bone, dislocation of the jaws, an increase in the distance between the alveolar arches and a decrease in their width. The prosthesis is further aggravated by periodontitis and periodontitis, which exacerbates atrophic processes in the jaws. Even teeth that remain in the bone and do not grow cause certain problems. The upper jaw is clearly visible at the junction of the two plates forming the hard palate. Removal of the central teeth can lead to a rupture of the occlusal connection between the upper jaw and the alveolar process of the lower jaw. In the absence of maxillary molars, an

incorrect ratio between teeth and antagonists in occlusion can lead to a decrease, increase or correction of the alveolar process.

In the lower jaw, the alveolar region narrows, its atrophy and, consequently, the lower jaw, the curved line, the lower jaw and sharp edges prevent prosthetics. In addition to the processes of bone atrophy, R. Popkins (1985) believes that microstomy caused by chronic dental disorders also prevents prosthetics. Smooth texture-changes in the mucous membrane and bone surface also complicate prosthetics. After tooth extraction, the formation of scars on the mucous membranes of the alveolar region is possible. In some cases, these changes also occur in the subcortical region. Chronic injuries, including those caused by poorly designed prostheses, play an important role in hyperplastic changes. The latter can often be the cause of papillomatosis, which can damage the hard palate, oral cavity and alveolar scallop. Such changes in the mucous membrane can be aggravated by inflammatory processes in the damaged tissue.

Bone atrophy can lead to lowering of the bottom of the mouth, the appearance of lips and tongue, mucous and muscle connections and their approach to the alveolar arch. The lower jaw, lower jaw, and lung muscles add to the difficulty of the denture. Preoperative procedures in the oral cavity are aimed at removing the following areas:

- 1) bone tissue of the jaw;
- 2) soft tissues-mucous membrane, surface layer, muscle fibers;
- 3) Peripheral branches of the tricornal nerve. Orthopedic prostheses should be used for the surgical treatment of patients with pathological changes that cannot be fully developed. In addition to assessing the conditions of prosthetics, there are also psychological factors: the adequacy of patient complaints, the ability to understand the need for surgery and what functional and aesthetic expectations he or she expects from orthopedic and surgical treatment.. Patient motivation is also very important when it comes to temporary and permanent dental correction. Before deciding on a preliminary surgical intervention, the surgeon should examine the patient's medical history in accordance with the rules of surgical dentistry and determine the likelihood of changes in soft tissues and bones in general pathology.

Changes in the soft tissues that cover the alveolar processes of the upper jaw and the alveolar parts of the lower jaw should be evaluated from the point of view of oncology, as well as infectious, viral or other etiology. When examining the oral cavity, upper and lower lips, the position of the tongue, scars, the mucous membrane of the bottom of the mouth changes, as well as the condition of the muscles. In particular, attention is paid to inflammatory processes at the bottom of the oral cavity, which can be caused by damage to the edges of the prosthesis. In these cases, there may be a diagnosis of fibroma with a significant misdiagnosis, but there may be hypertrophy and scarring of the mucosa. Atrophy of the jaw often leads to the formation of excess mucous membranes in the alveolar region, which prevents prosthetics.

In addition to assessing the condition of soft tissues, the alveolar process of the jaw and the bones of the alveolar process of the lower jaw are used. The width and height of the bone are measured, its shape, irregularities, the presence of inconsistencies, sharp edges, and exostoses are evaluated. In both jaws, mimicry, chewing, and other areas where muscles begin or attach are palpated. The upper jaw and the wing of the nose and the muscles of the upper jaw; in the lower jaw - the heartbeat of the jaw, lungs, chest and subcutaneous muscles. The alveolar arch and alveolar mucosa in the alveolar region of the lower jaw are palpated to determine pain.

Operations on the soft tissues of the jaw. (alvelectomy and alveoplasty).

Alveolar plastic. If during the treatment of an injury after tooth extraction, deformities of the alveolar tumor are detected, then alveolar plastic surgery is performed. At the same time, the muco-bone clot is removed only to identify the affected area of the bone. Deformation on the outer and inner surfaces of the alveolar arch is eliminated by bone clamps, bone saws, rods or cutters. When working with a boron machine, the workplace must be cooled by irrigation with an isotonic solution of sodium chloride. After the sharp edges are removed and smoothed, the mucous membrane is inserted into place. Care should be taken to ensure that the edges of the wound are aligned and the edges are removed as needed, and excess tissue is removed.

Internal obstruction of alveoplasty. After removal of one or more teeth, resection of the interalveolar obstruction may be required. Removal of outgoing or inadequate alveolar obstruction and change of position of the lateral plate of the upper jaw or the alveolar part of the lower jaw. These actions ensure the integrity of the surface of the bone mucosa, which allows you to remove pores on the vestibular surface of the bone without changing the height of the bone. In addition, bone atrophy is less pronounced in this type of alveoplasty [Tucker M., 1994].

Reduction and correction of the uneven surface of the alveolar process of the upper jaw and the alveolar process of the upper jaw This is done on the surface of the bones, which prevents adequate prostheses. This may be due to bone marrow and hypertrophy of the tissues that cover them. With intravenous alveoplasty, the mucosal bone is removed to create a normal alveolar arch, and a bilateral alveolar esophagus or jaw is opened. Spikes, dislocations, and other deformities are eliminated with bone clamps, holes, and cutters. Excess soft tissue is cut off, and knotted stitches are inserted into the wound. The work of the upper jaw must be taken into account to prevent damage to the upper jaw. It is important to pay attention to the location of the pelvic opening in the lower jaw and nerve vessels.

Resection of the alveolar process of the upper jaw and the alveolar process of the lower jaw. For teeth, including antagonist dentists, there is a lot of bone texture and deformation when there is no room in the prosthesis. Depending on the function of the prostheses, the models determine the required volume of bone resection. An X-ray is the location of the nasal cavity and upper jaw. To prevent their damage during surgery, the alveolar arch is cut linearly and the muco-bone clot is isolated. Occasionally, one or more vertical incisions are made and the trapezoidal clots are arranged at an angle. The excess alveolar part is removed using bone clamps, frames, rods and mills, which allow you to smooth the surface of the bone. The area had to work in accordance with the planes of occlusion of the alveolar arches. Excess texture should be removed so that the edges of the wound fit without stretching. It is best to use a continuous line of synthetic yarn. Alvelectomy is performed in the presence of a disproportion of the anterior part of the upper jaw due to adenia. Methods of bone correction proposed by O. Dean (1941), K. Kallenberger (1953) and Z. Obwegeser (1968), are basic, and some authors have developed modifications of them.

Preparation for urgent prosthetics. Most teeth are removed after the alveolar process of the upper jaw and the alveolar part of the lower jaw are removed for surgery. After tooth extraction, acute interalveolar and intermolecular barriers remain, which are manifested in periodontitis and periodontitis. After anesthesia, the mucous bone is removed, the teeth are removed, and the necessary surgical procedures are performed on the bone. The barriers are

removed with clamps, and a simple alveolar plastic is made from the inside of the barrier. Mumps and irregularities are present or smoothed out by milling. With scissors, the tooth blades are removed and the edges of the mucosa are smoothed, with a soft enough tissue to cover the bone, without excess mucosa, and the edges of the wound should be well closed. The wound is tight.

Removal of exosomes of the upper and lower jaw. ecosystems are used extensively and in obvious ways. It is cut vertically along the alveolar arch, and sometimes additionally. By rotating the angular or trapezoidal clot, each branch of the deformed bone opens. Exostoses are removed with clamps, rods and mills. Soft textures are knotted or seamless. When the alveolar upper jaw is removed from the palate and the lower jaw is removed from the tongue, the bone opens with a linear incision along the alveolar arc. There are exostoses that are removed by milling. For better bone formation in the lower jaw, soft tissue is removed with an inclined hook, taking into account the presence of lingual nerves, arteries and pelvic floor. In small exocytes and small alveolar processes, one or more incisions are made on the corresponding surface of the mucosa, forming a pavement under the surface of the bone edge to smooth and even out the thickness of the alveolar tumor. necessary hydroxyapatite, or other biological material. The mucous wound is sutured. It is advisable to attach an alveolar tumor plate or ligament.

Removing ectstasy in the field branches of the tangle. When designing and using removable dentures, exosomes of the palate can cause problems. In various shapes and sizes, and sometimes to a large extent, they deform the floor of the sky. exostoses create weak incisions along the midline of the palate and are removed at an angle of 30-400 at both the anterior and distant points of the incision. The muco-bone clot is removed, removed at the edges of the ligature, and the base of the bone cavity opens. Hops and hammers are removed with a rod or mill. Sections are often divided into different parts using clamps and scaffolding. This should be done very carefully, so as not to pierce the nasal cavity. The surface of the bone is smoothed, with a finger pressing soft tissues to the surface of the bone and placed on the surface of the mucous bone. The remaining tissue is cut off and suture nodes are applied to the wound. To prevent hematoma, gauze or iodine mixture, gauze or oblique oil is applied to the palate area. This should be secured with a silk ribbon. The protective plate should be securely attached, but there should be no excessive pressure on the tissue to avoid necrosis. Postoperative closures are performed to prevent inflammatory processes and hygienic procedures.

Restoration of the lower jaw. Autotransplantation can be done from the crest of the scalp or the ilium. One of the two sections of the machine is placed on the bone up to 15 cm long, giving it the shape of a dental arch, the other is crushed, and its particles are covered on the surface. The graft is attached to the residual bone of the lower jaw, where the alveolar portion is filled in, and the graft is attached to the suture lines surrounding the suture line. This is a tricky method. Bone restoration will take a long time until functional prosthetics are performed. Significant atrophy of the lower jaw causes the risk of fracture and determines the need for bone plastic at its base. The graft, formed from the ridge-like edge of the bone, is attached to the bone using a wire or mini-plate and dies. However, this method helps to prevent fractures of the lower jaw, but also does not improve the conditions of prosthetics.

different methods of plastic surgery of the lower jaw. In one of them, the lower jaw is located in such a way that its medial part remains with the surrounding subcutaneous tissue, and the vestibular part is lowered down. The remaining cavity of the mucosa is filled with hydroxylapatite, during autosynthesis, the edge of the iliac bone is combed. You can increase the lower jaw by placing bone horizontally and upwards and fill the middle cavity with chopped

autobusom, allochem, the hydroxyapatite. The simplest method to repair bone with the help of hydroxyapatite. Symmetrical sections of the mucous membrane are made in the peripheral part of the alveolar part of the lower jaw, in accordance with the dental pile. The cornea is formed from the cornea below the retina and is filled with hydroxylapatite in an amount corresponding to the required height, width and shape of the alveolar part and arch. Wounds are sutured with knotted sutures. It is recommended to wear a splint 8-10 days after surgery to maintain the shape of the alveolar part and form the cornea of the oral cavity.

The operation of the upper jaw with hydroxyapatite simple and effective. The method of performing this is similar to the operation on the lower jaw. Only one section is made along the midline of the alveolar arch. The subcutaneous cornea is made on the anterior surface of the upper jaw. After a sufficient amount of material is inserted and the alveolar tumor of sufficient height and width is closed, the splint is worn out for 7-8 days and attached to the palate with screws. To do this, use an old prosthesis and adapt it to the new shape of the alveolar tumor. With the help of hydroxylapatate, the growth of the alveolar process of the upper jaw can be carried out simultaneously with the increase in the maxillary cavity. Restoration of the upper jaw is not required, unlike the lower jaw. However, with a large bone atrophy and an inadequate shape of the base of the palate, the alveolar process increases. You can use a parotransplant of scab.

This procedure is similar to the operation on the lower jaw: the alveolar process is cut off with Le For III (osteotomy), and the descending location of this area with autogenous bone is performed under the surface of the mucous membrane of the mucous membrane. Filled (ridge-like edge or rib of the ilium). The graft is attached to the body of the jaw and cheekbone with metal wires, screws and mini plates with screws. However, there are cases of postoperative bone resorption after these operations and the need for repeated surgery. In this case, the patient will not be able to use the prosthesis for a long time. On the periphery of the upper jaw, especially in the distal area, there is a plaque of the upper jaw when there is not enough space for a denture. At the distal end of the alveolar cavity to the upper border of the wing-palate, the mucous bone is removed, the upper jaw opens, the excess part of the lateral wing plate is assigned an osteotome, and its back is attached to the wing. The tip of the lump is lowered into the resulting notch. The surface of the wound is wrapped with a solution of iodoform. Yara ends with secondary shots. As a result, this will create the conditions for a good denture.

Operations in the portable segment. In the absence of a row of teeth, there is no room for antagonist teeth. In this case, sigmoid osteotomy is recommended in the right direction. The operational plan is based on clinical and radiological data, as well as models. The models indicate the anatomical and mathematical parameters of the operation. Defines the orthopedic treatment plan for the model and the occultist. After opening the mucous membrane and bone marrow, an osteotomy is removed from the site, the teeth and jaw segment are osteotomized, the necessary position is fixed, and the bones are fixed with screws. The gap between the jaw segment and the jaw is filled with hydroxylapatite or other biomaterial. The muco-bone clot is inserted into place and fixed with suture nodes. Correction of bone deformities of the dental jaws is performed according to the rules of osteotomy. Its method depends on the deformation properties and adequate planning of prosthetics.

Basic literature:

1. Азимов М.И. Пропедевтика хирургической стоматологии. Textbook. - Tashkent. National Encyclopedia of Uzbekistan. 2009.

Additional literature:

1. Робустова Т.Г. Хирургическая стоматология: Textbook. 4th edition. - Moscow Medicine. two thousand ten

2. Тимофеев А. А. Челюстно-лицевая хирургия. Training manual. - Kiev. Medicine. two thousand ten

3. Нелима Анил Малик. Учебник по оральной и челюстно-лицевой хирургии. Second Edition © India. JPBMP Printed in Ajanta. two thousand eight

4. Кенбаев В.О. Травматология челюстно-лицевой области. Training manual. - Shymkent. Medicine. 2006.

5. Рабухина Н.А., Арьянцев А.П. Радиология и стоматология - Moscow. Medical information agency. 2006

6. Робустова Т.Г. Хирургическая стоматология. Textbook. - Moscow Medicine. two thousand three

7. Тимофеев А. А. Руководство по челюстно-лицевой хирургии и хирургической стоматологии. - Kiev. The medicine. 2002 year

А. Шаргородский А. Г. Клиника, диагностика, лечение и профилактика воспалительных заболеваний челюстно-лицевой области. Tutorial. - Moscow GEOTAR - Media. 2002 year

9. Безруков В.М., Робустова Т.Г. Руководство по хирургической стоматологии и челюстно-лицевой хирургии. - Moscow Medicine. 2000 year

10. Мирзиёев Ш.М. Критический анализ, строгая дисциплина и личная ответственность - должны быть повседневными правилами каждого лидера. Publishing House "Uzbekistan" Agency of Press and Information of Uzbekistan. 2017 year.

11. Мирзиёев Ш.М. Великое будущее построим вместе с мужественным и благородным народом. Publishing House "Uzbekistan" Agency of Press and Information of Uzbekistan. 2016 year.

12. Мирзиёев Ш.М. Вместе построим свободное и процветающее, демократическое государство Publishing House "Uzbekistan" Agency of Press and Information of Uzbekistan. 2016 year..

Internet sites:

1. www.tsdi.uz

2. www.dental-revue.ru

3. www.e-stomatology.ru

4. www.dentalyug.ru

5. www.dentist.med-place.ru

6. www.stomatolog.com.ua

7. www.medlibrary.RU

8. www.medline.ru

9. www.zyonet.uz

10. www.info@minzdrav.uz

11. www.Consilium-medicum.com. 12. медлайн;

13. электронная библиотека; 14. Каталог "Корбис";

15. www.Medpsy.ru;

PRACTICAL TRAINING TOPIC 1.

IMPLANTATION CLASSIFICATIONS, MATERIALS USED IN IMPLANTATION.

The technological model of experiential learning.

Stages and duration of work	Activity	Students
	Teacher	
Stage 1 Introduction to the training session 10-minutes 10-minutes 15-minutes 5-minutes	1.1. Explain the title of the topic, goals and expected results. Explain the main definitions on the topic. Familiarize yourself with the lesson plan. 1.2. Give a list of references (Appendix No. 1) 1.3. Ask questions to engage students in brainstorming. Description of the procedure for organizing the educational process based on the plan and structure of the lesson. 1.4. Announce the criteria for evaluating the activity of students in the classroom. (appendix No. 2)	Listen and record Listen and record Answer the questions Listening
Stage 2 The main part 25-minutes 15-minutes 15-minutes 5-minutes 10-minutes 50-minutes 40-minutes 20-minutes Stage 3 Final 40-minutes 10-minutes 10-minutes	2.1. Conducting an express survey on the main definitions of the topic in order to activate students' knowledge.(appendix No. 2). A conclusion is given for each section of the topic and attention is drawn to the most basic ones, it is required to register these information in a notebook. 2.2. Organization of discussion of materials of the game "Black Horse", pay attention to the expression of problems of analysis of situations of the rules of work (Appendix No. 3) 2.3. Independent analysis of the conceptual table of organizers and the "Fish skeleton", give the task of expressing the problem and determining ways to solve it, then solve it. 2.4. Presentation of the concept table of the "Fish Skeleton" organizer. 2.5. Everyone solves tests and situational tasks by himself (Appendix No. 3.2) 2.6. Implementation of practical skills and supervision of patients in the department (clinical lesson). Change 2.7. Demonstration and explanation of visual aids (slides, presentations, videos) 3.1. Conclusion. A conclusion is made on the topic. 3.2. Active students are evaluated. The assessment criteria for the group are announced (Appendix 5) 3.3. Questions and tasks for independent training are asked(Appendix No. 7)	Answer questions and discuss them They ask explanatory questions They discuss the materials of the game Ask questions They fill out the analysis sheet themselves and solve the problem. Listening Solve tests. They supervise patients Listening They ask questions Listening Listen and evaluate yourself They record tasks.
Total		6 hours

Interdisciplinary and interdisciplinary relations.

Teaching this topic is based on the knowledge and fundamentals of students: anatomy, histology, normal and pathological physiology. The use of the knowledge gained during the course will include anatomy, pediatric dentistry and other clinical disciplines, as well as all the information necessary for surgical dentistry, information about diseases and treatment principles.

Interactive method: a teaching method based on the principle of "paper»

According to this method, students are divided into groups of 2, 4, 8 and give feedback. The good thing about this method is that it creates tension between groups without much effort. The teacher offers students an independent solution. After the discussion, the subgroups are divided into 4 groups, and after the discussion, the groups are grouped into two groups, and the discussion is organized into one group. As a result, a well-thought-out general opinion is formed. In this method, each student tries to give their own feedback while working.

The essence of style:

- Each student solves a problem
- During the discussions in the focus groups each sub-group tries to justify your answer
- * The problem is repeated more than once in several groups and can lead to the development of memory and knowledge.

The aquarium method

In this case, 3 people will be selected from the group, and the rest of the students will be observers. This is similar to the TV series "What, Where, When". If students can't find the answers within one minute, they will be replaced by three more.

- * The topic is discussed in the middle
- * reveals the topic
- * Explains students' knowledge
- enhances the skills of discussion
- Method of play
- Every student participates

Security questions

1. What is implantation and its application in dentistry?
 2. History of the development of dental implantology.
 3. Dental implantology is an advantage
 4. Symptoms of implantation effectiveness (Smith, 1987).
 5. Classification of implants.
By type A)
B) on the material
B) According to the form
D) implantation technique
 6. Methods of examination of patients before dental implantation (clinical, paraclinical and laboratory).
 7. Instructions and contraindications for dental implantation.
 8. Sequence of preparation and execution of patients for dental implantation.
 9. General principles and features of lamellar intraocular dental implantation.
 10. General principles and features of intraoperative dental implant surgery.
- Subject of the proposed independent work.
Consequences of implant placement.

TEST:

1. What type of implant does not exist:
 - A. Mucous surface
 - B. endoossal
 - V. Subperiostal
 - G. Bone
 - D. endodanto-endoossal
2. Implants for receiving biomos do not differ:
 - A. Bone
 - B. Bioinert
 - V. Bioactive
 - G. Biotolerant
 - D. s Zircon
3. No bone marrow implant:
 - A. Round
 - B. Screw
 - B. Cylinder
 - G. in the form of natural teeth
 - D. Plate
4. The implant does not include:
 - A. part of the crown
 - B.
 - V. abutment
 - G. implant
 - D. No correct answer
5. Dental implant does not include:
 - A. Prevention of pathological tooth degradation
 - B. Pressure distribution
 - V. prevention of jaw atrophy
 - G. prevention of partial tooth loss in aden
 - D. base
6. Do you know what types of endossal implants?
 - A. Cone
 - B. Yassi
 - V. Button
 - G. Tubular
 - D. Magnetic
7. Bioinert implant types do not include the following:
 - A. Stainless steel
 - B. aluminum hydroxide, ceramics
 - B. steel
 - G. Titanium
 - D. zirconium dioxide
8. What design of the dental implant is not part of the A. Linkov screwdriver
 - B. Bonerit
 - V. Korea Vent
 - G. Astra Tex
 - D. Contrast
9. Bone and implant formation:
 - A. osteointegration
 - B. fibrointegration

- V. fibro-osteointegration
 - D. all answers are correct d
 - . all answers are incorrect
10. The most perfect connection between bone and implant:
- A. bone
 - B. fibrosis
 - B. mixed
 - G. muscle
 - D. scars
11. For severe bone atrophy, the following implants are usually used:
- A. Under the surface of the bone marrow
 - B. flat
 - V. screw
 - G. cylinder
 - D. cone-shaped
12. Local recommendations for dental implantation:
- A. bruxism
 - B. partial attachment
 - B. full intimacy
 - G. lack of fixation of soluble dentures
 - D. atrophy of the jaw
13. Provide absolute recommendations for dental implantation:
- A. an Allergic reaction to the implant material
 - B. the pre-connection
 - V. hypersalivation
 - G. hepatitis
 - D. deformity of the growth axis
14. What testing procedure is not performed during dental implantation surgery?
- A. Anthropometric measurements of the face
 - B. tomography
 - V. Development of diagnostic models
 - G. orthopantomogram
 - D. clinical trials
15. Dental implantation is not an indication:
- A. Pathological absorption of teeth
 - B. Complete adventure
 - B. for fixing soluble prostheses
 - G. paradontosis II
 - D. partial adrenal gland
- 1.A, B 2.A, G 3G, D 4.A, D
16. Dental implantation is not an indication
- A. Chronic pyelonephritis
 - B. diabetes
 - B. metal allergy
 - G. presence of cardiomyopathy
 - D. foci of inflammation
- 1.G, D 2.A, D 3. V, G 4. A, G

Situational issues:

1. The patient is 40 years old. Secondary adenia in the upper jaw 54/34. External examination, oral examination, instrumental examination and panoramic radiography were performed.

What additional radiographs should be performed?

Answer: In addition, panoramic photos should be taken straight and close to each other, as they can determine the relationship of the alveolar arches of the jaws. This does not apply to the general orthopantomogram.

2. The patient is 47 years old. 321 / 12 Secondary adenia in the field. External examination, examination of the oral cavity radiology.

Who else can help with the selection and installation of the implant?

Answer: A more complete examination can be performed by an orthopedic surgeon. It gives a clearer picture: the interaction of jaws and teeth, as the chewing system and jaw and use the jaw model allows to design the surgical procedure.

3. The patient is 36 years old. Secondary adenia in the lower jaw | 456. It was decided to put a vinyl implant. What basic and additional tests can be done to determine the probability of implantation of this implant?

Complete examination of the oral cavity, palpation, instrumental methods: measurement of the thickness of the alveolar process, radiography, RCT, MRI, etc.

Advertising materials:

1. Control questions to check the level of knowledge of the student.
2. Situational issues.
3. Tests of the first degree of complexity.
4. Second-order complexity tests.

The theoretical part.

A dental implant is a non-biological material that is inserted into the body's tissues over a long period of time to perform its proper function.

1. Classification of dental implants:

- A) by type of implantation;
- B) implant the material;
- C) according to the form of intraosseous implantation;
- D) by implantation.

By type of implantation:

1. Endodont-endlessly implantation.
2. Andosilla implantation.
3. Abdominal implantation.
4. Implantation of the internal mucosa.
5. Subcutaneous implantation.
6. Bone implantation.

By implantation material:

1. Biotolerant: stainless steel, chrome-cobalt alloy.
2. Bioinert: titanium, zirconium, gold, corundum, ceramics, glass carbon, titanium nickelide.
3. Biologically active: iron implants with hydroxyapatite, three calcium phosphate ceramics, etc. coverage.

According to the type of endosseous implant (basic forms):

1. Plate.
2. Screw.
3. Cylindrical.

4. In the form of a true tooth root.
5. From the stairs.
6. With cortical plugs.
7. Nymphs.

By implantation:

1. One step.
2. Two-stage.
3. Indirectly
4. Far away.

Advantages of dental implants compared to traditional dentures:

- A) Low or no ability to treat natural teeth.
- B) It helps to avoid the use of soluble prostheses in the treatment of fatal defects.
- C) The possibility of manufacturing long-lasting insoluble prostheses.
- D) a prosthesis that can not be solved in the complete absence of teeth

Examination of the patient before implantation.

Before implantation, the patient will be examined in accordance with the rules adopted in dentistry, including by a surgeon and orthopedic surgeon. The positive status of the patient is always associated with local complications, general diseases and systemic pathology. Attention is paid to complaints such as bruises, pain in the opening and chewing of the mouth, frequent bleeding of the gums and sensory abnormalities of the oral mucosa.

Anamnesis of diseases of the mucous membrane and oral cavity will be revealed, as well as procedures and results of treatment of the patient will be studied. When and under what conditions the tooth is removed, the reasons and evening basics will be taken into account. Changes in the position of the facial joints during dental implantation include a clear reflection of natural tissues, opening of the oral cavity, deformation of the lips, and the dorsal aspect of the jaw. Proper and adequate use of implant systems can help prevent aesthetic leaks. However, the observed changes may be abnormal and may occur both throughout the body and locally. These changes are taken into account when developing an implant treatment plan. During the inspection the front part of the mouth, the color and moisture of the mucosa, the depth of the mouth, position of the joints and free of gums, upper and lower lip, the wrinkles and muscles in the mucosa; it also focuses on the degree of attachment of the facial and other muscles. When looking at the tongue of the alveolar part of the lower jaw, you can give an idea of the position of the curved line and the muscles of the jaw that start from the inside of the lower jaw. For the same reason, in some cases, it is necessary to undergo preliminary preimplantation: plastic surgery of the tongue and larynx, incision of the mucous membrane and muscle tube, as well as smoothing of sharp edges. In the case of central occlusion, the ratio of the teeth of the lower jaw and the upper jaw with a closed mouth and the condition of the tooth are evaluated. Irregular bites (deep, open, and intersecting) are important when implanting instructions. Implants include physiological types of teeth (the offspring, prognathia, bobrovnya and right teeth). These characteristics should be studied by the orthopedist in terms of the use of implants as dentures. Approximate reflection of functional and aesthetic disorders on the periphery of the oral cavity and their origin, bone size and configuration of alveolar tumors, the state of the surrounding mucosa, the function of facial muscles and masticatory muscles, - initial information about the state of the lower jaw, the ratio of the upper and lower jaw.

Based on the results of the examination, recommendations and contraindications to dental implantation are established. During the initial clinical examination, obvious contraindications can be identified due to the presence of caries and periodontitis, periodontal diseases, poor oral hygiene and damage to the oral mucosa. In some cases, pathological changes (caries and its complications, periodontitis, poor oral hygiene) are considered relatively contraindications to implantation after oral administration. In other cases (diffuse periodontal disease, diseases of the oral mucosa, etc.), contraindications are not changed.

Dental implantation can be performed in orthognathic or other forms of physiological dentistry. After a thorough examination of the dental status in the context of future orthopedic treatment, the orthopedic surgeon will evaluate the jaw model, including occlusion.

A comprehensive assessment of these data will allow you to determine the conditions for implantation. Sometimes hidden anomalies of the masticatory system are detected, and there is a suspicion of dental implantation.

Clinical studies are always supplemented with radiological data. Dental, panoramic images, zoning of the jaws, orthopantomograms are often used. Recently, simple and computed tomography is becoming more and more popular. In some countries, they also use magnetic resonance imaging techniques. Computed tomography and magnetic resonance imaging provide accurate information on three levels. Volumetric and mathematical data on the bones, mandibular canal and pore opening, topography of the upper jaw and, most importantly, the properties, quality and thickness of the bone. Computed tomography is an important diagnostic implantation in patients who do not have teeth. Visualization of the beads using implanted beads allows you to reflect on the integrity of the bone cavity and proper treatment. Primary clinical and radiological diagnosis is important in assessing the state of the gastrointestinal tract.

Several classifications have been proposed to assess the condition of jaws without teeth - Addwood Kennedy (1928) and Atwood (1971, 1977) and U. Linholm and G. Zarb (1985) for dental implants, S. Misch and K. Judy (1987). Anatomical criteria are used to photograph the jaw. When diagnosing and planning dental implants, it is necessary to take into account the anthropometric parameters of the jaw bone, as well as perform mathematical modeling based on clinical, radiological data and the creation of three-dimensional samples for RCT and YMR.

Based on the classification data and various bone characteristics, the method of osteotomy and implantation was chosen. When the bone structure is dense and compact, rotation must be maintained and cooled at a sufficient rate. If the bone structure is particularly porous in the upper jaw, it is necessary to drill carefully and avoid pressure without expanding the implant area. Otherwise, the upper jaw may be punctured and the lower alveolar nerve may be damaged. These characteristics of different parts of the upper and lower jaws were taken into account in the subsequent classification developed by S. Misch (1990).

According to him, the bone has high functionality, including the ability to adapt to various injuries and loads. They cause bone remodeling and remodeling, but the absence of overload preserves the physiological properties of the bone. According to the author, progressive treatment during implantation provides adaptation of the bone. Successful results can be achieved by proper evaluation of loads on the bone: thorough osteotomy, trauma-free implantation, adequate bone stability and adequate load after the second surgical procedure. The assessment of the clinical condition of the upper jaw and the alveolar part of the lower jaw is supplemented by the results of measuring the thickness of the mucous membrane. A comprehensive diagnostic assessment allows you to identify implants, select the type of implant and the number of implants, and develop a plan for both temporary and permanent orthopedic surgery. The choice of implants and their size depends on the conditions in the oral cavity and the future tasks of dentures. Given the large number of implant designs, it is important to consider the effects of different clinical treatments rather than the manufacturer's recommendations.

Assessment of the general state of health includes anamnesis data, blood and urine tests, and conclusions of the therapist.

1. Clinical examination

a) study of the history of teeth

b) Appearance of the jaw area

c) Examination of the oral cavity: teeth, dentition, oral mucosa, lower jaw, assessment of the condition of teeth.

d) study of diagnostic models of the jaws

2. Diagnostics using light

- a) Orthopantomogram
- b) Directed dental image
- c) x-ray image of Yusupov
- d) x-ray computed tomography
- d) magnetic resonance imaging

3. Laboratory tests

- a) General blood analysis
- b) Determination of glucose in blood
- C) coagulation
- d) general urinalysis

Recommendations and contraindications for dental implantation

Instructions:

1. in the absence of one front or chewing tooth
2. defects of teeth (no more than 3 teeth)
3. in case of defects in the last part of the dentition
4. completely missing teeth
5. The inability of patients to lift extendable prostheses due to high sensitivity to acrylic and the presence of a strong gag reflex;
6. lack of functional occlusion and development of pain syndrome caused by dysfunction.

Instructions:

absolute:

- diseases of the blood and blood organs (hemophilia, severe anemia, etc.);
- diseases of the bone system that reduce bone repair;
- * diseases of the peripheral and central nervous system (congenital and acquired);
- * malignant neoplasms of organs and systems;
- * immunopathological conditions;
- * systemic connective tissue diseases (rheumatic, rheumatoid processes, dermatoses, scleroderma, etc.);
- * tuberculosis and its complications;
- * diseases of the oral mucosa (chronic recurrent autoimmune stomatitis, rheumatism, cholera, Shengren syndrome, Beckett syndrome, etc.); Type 1 diabetes.

relative:

- poor hygiene and sanitation of the oral cavity;
- * gingivitis of various etiologies;
- * manifesting periodontitis;
- defects of teeth;
- * chakka - diseases of the lower jaw;
- * manifested atrophy or defect of the alveolar process;
- cancer of the oral cavity;
- * bad habits (smoking, alcohol consumption, drug addiction);
- * bruxism;
- * pregnancy.

Recommended literature

- basic

1. . Робустова Т.Г. Руководство По Хирургической Стоматологии Челустно-Лицей Хирургии. volume 2, 2000
2. Робустова Т.Г. Имплантация хирургических аспектов имплантации - М., 2003.
3. В.Л. Параскевич Зубная имплантология: теория практики и практики: Scientific and practical manual /.-М., 2002.-386 p

Additional

1. Безрукова В.М Рук.-во по ксир.-ай стом.-ии чел.-лиц. хirurgii. W 2 tomax. (ed.) - 2000
2. ТМ Lur'e. «Здравоохранение и стоматология» . М. Medgiz, 1963, p. 288.
3. «Стоматология сегодня»: Archive no. 3, p. 1-6.
4. Dental firm-Olga-Volgogradskaya, pp. 1-2.

web site:

www.eastman.ucl.ac.uk

www.budovsky.ru

www.tc.by/rus/medica

Task:

1. Use the Internet to get news on the topic of the lesson and write practical notes-notebooks in independent workbooks.
2. Preparation of slides and multimedia on the topic.
3. We go to the library, make a dictionary and write a summary using foreign literature.

PRACTICAL TRAINING TOPIC 2
CLASSIFICATION AND PATHOGENESIS OF UPPER AND LOWER
JAWS ALVEOLAR BONE ATROPHY.

The technological model of experiential learning.

Stages and duration of work	Activity	Students
	Teacher	
Stage 1 Introduction to the training session 10-minutes 10-minutes 15-minutes 5-minutes	1.1. Explain the title of the topic, goals and expected results. Explain the main definitions on the topic. Familiarize yourself with the lesson plan. 1.2. Give a list of references (Appendix No. 1) 1.3. Ask questions to engage students in brainstorming. Description of the procedure for organizing the educational process based on the plan and structure of the lesson. 1.4. Announce the criteria for evaluating the activity of students in the classroom. (appendix No. 2)	Listen and record Listen and record Answer the questions Listening
Stage 2 The main part 25-minutes 15-minutes 15-minutes 5-minutes 10-minutes 50-minutes 40-minutes 20-minutes Stage 3 Final 40-minutes 10-minutes 10-minutes	2.1. Conducting an express survey on the main definitions of the topic in order to activate students' knowledge.(appendix No. 2). A conclusion is given for each section of the topic and attention is drawn to the most basic ones, it is required to register these information in a notebook. 2.2. Organization of discussion of materials of the game "Black Horse", pay attention to the expression of problems of analysis of situations of the rules of work (Appendix No. 3) 2.3. Independent analysis of the conceptual table of organizers and the "Fish skeleton", give the task of expressing the problem and determining ways to solve it, then solve it. 2.4. Presentation of the concept table of the "Fish Skeleton" organizer. 2.5. Everyone solves tests and situational tasks by himself (Appendix No. 3.2) 2.6. Implementation of practical skills and supervision of patients in the department (clinical lesson). Change 2.7. Demonstration and explanation of visual aids (slides, presentations, videos) 3.1. Conclusion. A conclusion is made on the topic. 3.2. Active students are evaluated. The assessment criteria for the group are announced (Appendix 5) 3.3. Questions and tasks for independent training are asked(Appendix No. 7)	Answer questions and discuss them They ask explanatory questions They discuss the materials of the game Ask questions They fill out the analysis sheet themselves and solve the problem. Listening Solve tests. They supervise patients Listening They ask questions Listening Listen and evaluate yourself They record tasks.
Total		6 hours

Teaching this topic is based on the knowledge and fundamentals of students: anatomy, histology, normal and pathological physiology. The use of the knowledge gained during the course will include anatomy, pediatric dentistry and other clinical disciplines, as well as all the information necessary for surgical dentistry, information about diseases and treatment principles.

Interactive method: a teaching method based on the principle of " paper»

According to this method, students are divided into groups of 2, 4, 8 and give feedback. The good thing about this method is that it creates tension between groups without much effort. The teacher offers students an independent solution. After the discussion, the subgroups are divided into 4 groups, and after the discussion, the groups are grouped into two groups, and the discussion is organized into one group. As a result, a well-thought-out general opinion is formed. In this method, each student tries to give their own feedback while working.

The essence of style:

- Each student solves a problem
- During the discussions in the focus groups each sub-group tries to justify your answer
- * The problem is repeated more than once in several groups and can lead to the development of memory and knowledge.

Aquarium style

In this case, 3 people will be selected from the group, and the rest of the students will be observers. This is similar to the TV series "What, Where, When". If students can't find the answers within one minute, they will be replaced by three more.

- * The topic is discussed in the middle
- * reveals the topic
- * Explains students' knowledge
- enhances the skills of discussion
- Method of play
- Every student participates

Security questions

1. Types of bone structure (adjectives) of the upper jaw.
2. Classification of maxillary atrophy
3. Surgical methods and preparation of patients for dental implantation in the upper jaw.
4. What is the difference in bone plasticity in the upper jaw when using osteoplastic materials?
5. Early complications of dental implantation in the upper jaw
6. Late complications with dental implantation of the upper jaw
7. What types of maxillary lift (sinus lift) are different and what osteoplastic materials are different?
8. Features and sequence of installation of flat implants in the upper jaw
9. Features of screw implantation in the upper jaw
10. Troubleshooting

Bone atrophy is characterized by a decrease in the alveolar process of the jaw, a decrease in the length and width of the bone, as well as bone detachment. Atrophy is an inevitable consequence of tooth loss, in some cases jaw damage, inflammation, hereditary or other disorders.

In our body, everything is interconnected, and the loss of one tooth leads not only to the movement of the entire dental cavity, but also to a significant decrease in the volume of bone tissue. Externally, bone atrophy appears only when most of the teeth in both jaws are missing. In this case, there is an asymmetry of the face, the size of the dental belt decreases, the lips and cheeks "sink" into the oral cavity, the corners of the lips are lowered, and the rest of the teeth move along the tooth.

Causes of bone atrophy:

tooth loss-bone atrophy is caused by a decrease in load: if the teeth do not have roots, they will not receive the necessary pressure and will stop saturating with nutrients. Over time, the soft bones of the bone melt, the bones become thin, the tooth breaks; inflammatory diseases of the oral cavity, periodontal disease, removed cysts, granulomas and other tumors.

trauma of the jaw

anatomical structure of the jaw,

hereditary diseases

age-related changes in the body.

Bone atrophy:

premature aging, wrinkles, including changes in facial aesthetics,

disorders of mastication and, as a result, the development of diseases of the gastrointestinal tract;

change of speech

displacement of the remaining teeth, deterioration of their position.

The main and most important consequence of bone atrophy is the impossibility of classical implantation. Implantation of the tooth root cannot be attached to the very short and narrow bones.

The main causes of atrophy of bone tissue and its resorption

These reasons are:

the destruction of natural dental tissue, then the jaw bone will lose the necessary chewing load and atrophy will begin, and after a few months the volume will decrease;

long-term inflammatory processes in the human oral cavity;

systemic disease of the entire human body;

congenital and specific anomalies of the jaw;

trauma to the teeth;

long-term wearing of removable or permanent dentures by the patient. The fact is that the entire load of these prostheses falls on the supporting teeth, and in the removable system of dentures - on the tooth tissue. As for the bone tissue under the prosthesis, it will eventually become discharged, thinned and atrophied. If the prosthesis does not work, the person will lose not only the teeth, but also the usual bone of the small and lower jaw.

Patients should be aware that even if implantation occurs immediately after removal of diseased or damaged tooth tissue, bone mass will not be fully restored in all cases.

Side effects of bone atrophy

The bone tissue of the jaw, deprived of the necessary load, becomes thinner and smaller and loses its normal size and structure of the adjacent tooth. With severe atrophy, the tooth is visually attractive. The visibility of the eyes is reduced, and this reduction of the implant becomes more problematic. Installing a removable and permanent prosthetic system will not save the situation.

Over time, such a prosthesis has an unpleasant nature of failure. In some cases, there is a cavity under the prosthesis, in which harmful bacteria accumulate, causing the inflammatory process. And with such a prosthesis the size of bones and the atrophy will continue to decrease.

Atrophy of the toothless jaw Atrophy of the upper jaw is also harmful for further treatment. This is due to the proximity of the maxillary sinuses. With bone loss, it is often necessary to perform sinus lift surgery to perform implantation and prosthetics. However, if there is atrophy of the lower jaw, there is usually no need to add bone material, and complete oral restoration can be performed faster and cheaper. For this purpose, a single-stage dental implantation is used.

The reduction of bone mass and the absence of tooth tissue can change the contours of the human face and cause it to age prematurely. The cheeks, as well as the lips, fall into the mouth, and wrinkles are formed when wrinkles appear.

In clinical practice, atrophy is characterized by 4 levels: minor; moderate; severe. Dental implants can be used with optimal dental implants when bone density is slightly reduced. In severe atrophy, implantation is possible only after restoration of the jaw.

symptoms

The main sign of atrophy is a change in the appearance of the jaw. As the disease progresses, there is a significant decrease in the volume of the alveolar process with the development of full elasticity of both the jaws and older generations. Atrophy is noted in the lower third of the face and changes in appearance. The lips of these patients enter the mouth, and wrinkles are recorded around the mouth. The patient has a broken bite, and the adjacent teeth rely on the missing ones. The Popov-Hodon phenomenon develops by replacing the missing antagonist with reverse teeth. Violation of chewing and speech functions, as well as facial aesthetics. Patients with atrophy of the jaw look older than the passport age.

Causes of density and loss of the jaw. Bone loss is not the only cause of changes in bone composition. The causes can be: dental caries and periodontal inflammation-covering the teeth and ensuring their stability; cysts and inflammation in the area of the roots of the teeth or maxillary sinuses; jaw injury; osteoporosis; congenital anatomical features. However, the main cause of jawbone atrophy is the prosthesis after tooth extraction. The consequences of "relaxing" bone tissue Alveolar process atrophy is not just a "local" problem. Gradually, the process leads to irreversible changes: the facial expression changes. Depending on where the defect is, the upper or lower jaw is "compressed", the lips are lowered, and wrinkles appear around them. The face will have a special "old" look. The teeth begin to shift towards the "empty" space. The probability of losing adjacent teeth is increased. As the position of the teeth changes, the food remains between them become distant: the development of caries accelerates. And the effectiveness of chewing decreases, which leads to gastrointestinal problems. And the main problem for patients in dental clinics is the inability to implant teeth. According to local doctors, this is impossible in 35% of patients without jaw repair

Bone augmentation, the installation of removable dentures or permanent bridges, and the use of dental implants may include restoration without a bone growth procedure.

Option 1: Rapid dental implantation is the most advanced dental restoration procedure that does not require bone augmentation. The method is used to get rid of 3 flies. Implants of various lengths and shapes are selected for secure fixation in the bone tissue, and the abutment (part of the implant for sealing the crown) forms a strong structure. If there is an acute bone defect, implants will be inserted into the deep layers of bone tissue, including at the discretion of the implantologist, implants for load distribution can be fixed at an angle. In addition, the doctor creates a complex structure as a jeweler and selects implants according to the specific size of the bone. On the 3rd day with rapid implantation, the implants will be inserted into the prostheses, and the implants will grow as quickly as possible due to the restoration of chewing function and natural processes of bone regeneration. Thus, as in the case of classical implantation and sinus lift, patients return to a normal lifestyle a week after implantation, rather than after six months or a year.

Option 2: Sinus lift - surgery on the upper jaw to increase the length of bone tissue. Two main approaches are possible: simultaneous implantation (sinus closure), as well as filling the bone material, its complete wrapping and only after artificial roots (open). sinus-lifting). The sinus-lifting process is possible due to the partial clearance of the cavity for bone tissue. During surgery, it rises through a hole in the bone tissue and the space is filled with synthetic bone substance. For more information>

Option 3: Osteoplasty is a procedure usually performed to increase the width of the bone (the problem of missing bone length in the lower jaw is very rare). Synthetic compounds, donor bone

blocks (animal or human and other bone structures), and their own bone secretion from the patient's blood plasma are used to increase bone volume. The second option is better, because their own cells are not treated as foreign bodies and take root as soon as possible. For more information>

Option 4: Removable dentures are one of the possible options for restoring teeth with bone atrophy. Complete or private removable dentures will successfully replace the tooth, but the patient must face a number of disadvantages: lack of aesthetics, durability, speech disorders and inflammation of the teeth caused by friction of the structure, short service life. In addition, removable prostheses do not reduce bone recovery - they still do not receive the necessary load and continue to reduce its volume. In the end, this will lead to aesthetic degradation: eventually, the gum along with the bone tissue will be reduced and a cavity will appear between the prosthesis and the prostate. For more information>

Option 5: Dentures are interconnected dental crowns that allow the patient to repair several missing teeth using live teeth or implanted implants. With the support of living teeth, such as removable dentures, they further exacerbate the process of bone atrophy as it continues to shrink under the prosthesis.

Recommended literature **- basic**

1. . Робустова Т.Г. Руководство По Хирургической Стоматологии Челустно-Лицей Хирургии. volume 2, 2000
2. Робустова Т.Г. Имплантация хирургических аспектов имплантации - М., 2003.
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2. ТМ Lur'e. «Здравоохранение и стоматология» . М. Medgiz, 1963, p. 288.
3. «Стоматология сегодня»: Archive no. 3, p. 1-6.
4. Dental firm-Olga-Volgogradskaya, pp. 1-2.

web site:

www.eastman.ucl.ac.uk

www.budovsky.ru

www.tc.by/rus/medica

Task:

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- 2.Preparation of slides and multimedia on the topic.
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PRACTICAL TRAINING TOPIC 3
DENTAL IMPLANTATION ON THE UPPER JAW. CORONAVIRUS IS A
GLOBAL PROBLEM IN THE WORLD. REFORMS ADOPTED IN
UZBEKISTAN AGAINST CORONAVIRUS INFECTION.

The technological model of experiential learning.

Stages and duration of work	Activity	Students
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- enhances the skills of discussion
- Method of play
- Every student participates

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7. What types of maxillary lift (sinus lift) are different and what osteoplastic materials are different?
8. Features and sequence of installation of flat implants in the upper jaw
9. Features of screw implantation in the upper jaw
10. Troubleshooting

Subject of the proposed independent work.

Diseases of the mucous membranes of the oral cavity: relationship - Bowen's disease, erythroplasia and optional erosive stomatitis and radiation.

TEST:

1. According to Mish D. What is the quality of the bone in the front of the upper jaw:
 - A. D1
 - B. D4
 - V. D2; D3
 - G. D3; D4
 - D. D1; D4

2. What sinus-lifting method is used when the subantral bone is 5-8 mm:

- A. method of lateral opening of the window
- B. localization of the bottom cavity (osteotomy)
- V. lymphatic sinus lifting using an autoclave
- D. by painting the front wall of the cavity
- D. Instructions against sinus lifting

3. What method of sinus lifting is used when the subantral bone is 9-10 mm?

- A. method of lateral opening of the window
- B. The cavity is raised locally (osteotomy).
- V. Lateral sinus with bone application
- G. by painting the anterior wall of the cavity
- D. all answers are correct

4. Optimal distance between the upper jaw and the upper jaw cavity:

- A. 11 mm
- B. 12 mm or more in
- . 1 mm
- 1.5 mm
- D. 7mm

5. At what thickness is the subantral bone used for autoimmune sinus lift:

- A. 6 mm
- B. 6-7 mm
- V. If less than 5 mm
- 5 mm

Autoinducers not be used to lift sinus D.

6. What are the types of upper jaw lift?

- A. method of lateral opening of the window
- B. The cavity is raised locally (osteotomy).
- V. endoscopic lifting through the medial wall
- G. all answers are correct
- D. painting the anterior wall of the cavity

7. What is the diameter of the bone layer after removal of the localized mucosa?

- A. less than 1 mm less than the diameter of the implant
- 0.5 mm smaller than the implant diameter
- V. 0.5 mm larger than the implant diameter

Just like G. implant

D. less than 2 mm smaller than the diameter of the implant

8. When the quality of the upper jaw of the microscope is D3, when the second stage of implantation is performed

- A. 3 months
- B. 9 months
- V. 6 months
- G. 4 months
- D. 1 month

9. How long after biosynthetic sinus lifting is implantation performed:

- A. 3 months
- B. 9 months
- V. 6 months
- G. 4 months
- D. 2 months

10. Determine the sequence at the first stage of the operation on screw implants:

1. Osteotomy of cortical and caudal sections depending on the implant diameter
2. The wound on the implant is removed

3. The mucous membrane and the surface of the bone are dissected to the bone

4. The implant is inserted into the implant area.

A. 4312; B. 3142; V. 1234; G. 4321; D. 4231

11 Autosynchronization steps from the front of the mandible (choose the wrong answer):

A. The canal - shaped mandible is cut off from the outer limb, and the mucosal bone clot is isolated.

B. Removal of the lower limb of the mandible canal muscle

B. Grafts are obtained through spherical and fissure holes

G. lateralization of the lower extremities

D. the mucous bone is inserted into the surface of the retina and stitched

1.A, D 2.B, G 3.V, G 4.A, G

12. The stages of the transplantation of the lower jaw

A. Made trapezoidal incision in the free and attached gums in the Central teeth.

B. to Expand the cortical layer of bone and a small piece of bone using a wide chisel

B. Trimming of the graft of the desired size using a spherical or fissure openings

G. resection of the root of the central tooth

D. Mucus is inserted into the surface bone and attached to the suture

1.ABVD 2.AVGD 3.ABGD 4.BVGD

Situational issues:

1. The patient is 46 years old. The left side has 123 adrenal glands after an injury to the upper jaw. Have thick mucous membranes and mucous membranes of the transverse thrust.

1. What are your plans for dental implantation?

2. In this case, I used an autograft

2. The patient is 65 years old. Secondary adrenal gland in the left jaw 567 Vertical atrophy of the alveolar intestine. He went to the doctor for implantation.

1. What methods should be used for implantation?

2. What is the most important element when choosing an implant?

3. The patient is 65 years old. High jaw 21 / Secondary adenia in 12 areas. On examination, the patient had atrophy of the alveolar process of the larynx of the vestibule.

1. What methods should be used for implantation?

2. Is it possible to perform an implantation operation?

3. What operation is planned for implantation?

4. The patient is 33 years old. Adenia is defined in 4 areas of the right jaw. Autumn is over, there is a check. During the operation, the doctor performed: the mucous membrane and bone marrow were cut to the bone, the implant was twisted and the wound was damaged.

1. What stage of implantation was abandoned?

2. No osteoplastic material needed

Advertising materials:

1. Control questions to check the level of knowledge of the student.

2. Situational issues.

3. Tests of the first degree of complexity.

4. Second-order complexity tests.

The theoretical part.

Preliminary clinical X-ray diagnostic assessment of the state of the jaw system confirms the need for implantation in the elimination of functional and aesthetic disorders, which allows to determine the size, quality and configuration of the implanted bones.

Soft tissues for implantation and osteotomy begin only when there is enough soft tissue for implantation. If there is a leak, then additional operations are required.

These include:

- lack of conditions for implantation

- lack of tissue for closure
- the presence of a bone defect.

The alveolar maxilla, especially the porous substance with the vestibular side with a thin cortical layer, consists of a sparse structure and also reflects the reaction of the bone to the chewing pressure of the upper jaw.

Clinical studies are supplemented by regular X-ray examinations. More dental, panoramic, zonograms and orthopantomograms are used, sometimes computed tomography or magnetic resonance imaging can be used.

Orthopantomography is used in the initial examination, which can give more information. All these tests should be used in the standardization and dynamics of implantation [Rabukhina N. A. et al., 1993, 1999]. All images should be treated the same and treated the same.

The orthopantomogram shows the quality, height, proportion of adjacent spaces of the nasal cavity, the location of the lower jaw and the location of the lower jaw. An orthopantomogram with a plate with special metal markers shows the true height of the occlusal plate. [Misch S, 1993; Spiekerman E., 1995].

However, in 20-30% of cases, orthopantomography does not give accurate results [Shimura M. et al., 1990]. For this reason, additional right or side projections are photographed, and the location and position for implantation is selected. Computed tomography and magnetic resonance imaging provide results in three levels. Detailed information about the thickness of the lower and upper jaw, volume, topography of anatomical formations, and most importantly, the thickness and quality of the jaws.

V. Yu. Kurlyandsky (1977) described the stretching of the upper jaw and showed that in the photo-rotation model, different groups can move under the influence of tooth function.

U. Lekholm and G. Zarb (1992) showed that levels I - IV have bone density: level I is relatively dense, IV is very soft. According to cephalometric X-ray images, these authors diagnose alveolar tumor forms A, B, C, D and E.

The orthopantomogram provides visualization of the height, quality of the bone, the bottom of the upper jaw, the opening of the duct and canal of the lower jaw, as well as 2 alveolar arches. [Misch S, 1993; Spiekerman E., 1995].

However, in 20-30% of cases, the orthopantomogram does not provide accurate information (bone size, quality, lower jaw, upper jaw, etc.). [Shimura M. et al., 1990]

W. Lekholm and G. Zarb (1992). The thickness of the bones of I-IV levels is different. I degree dense bone, IV degree-sparse bone. The same authors classify the alveolar cavity ABCDE and make a diagnosis using cephalometric radiography.

After the removal of the upper jaw teeth, atrophy of the alveolar tumor develops along the corridor. The resorptive nature of the alveolar tumor is most often observed with the loss of central teeth and occupies the horny part of the alveolar process. This aligns to the sky and aligns the corridor. This reflects the formation of the alveolar arch. This bone atrophy causes a change in the profile of the face. The lower jaw has a pneumatic, sclerotic and combined type, depending on the degree of pneumatization of the upper jaw. The upper jaw cavity has a different relationship with the lower teeth. Sometimes it is close to the bottom, can penetrate and not reach the bottom.

Anthropometric studies of A. Ivanov (1991) show that the distance from the top of the tip of the upper jaw to the tip of the root tip is 7.4 mm. The nearest tooth cavity is 6! 6. The average thickness of the bone in the roots of the lunge is 2.05-2.02 mm, in the area of the root of the palate - 2.02 mm.

The distance between the cavity and the implant should be at least 1-2 mm, but with atrophy and loss of the tooth, it approaches the alveolar larynx and can be separated by a thin bone plate. This complicates dental implantation. In some cases, the abdomen rises or, in addition, the floor of the cavity rises.

Implantation of the upper jaw has a number of features. First of all, implantation of the maxillofacial artery and upper jaw with venous entanglement of the upper jaw.

According to K. Hoffman (1995), although there is a distance between the artery and the vena cava, the distance between them during atrophy approaches. Features of the structure of the jaw and bone atrophy in aden This should be taken into account during implantation. The lower jaw can bend the alveolar axis and look at the surface of the oral cavity. The distal part of the jaw is missing from the teeth. This is where the quality of the bone is taken into account. Especially important is the inner muscle of the wing. If the alveolar part of the lower jaw is thin or peripheral, the tongue wall may be broken during implantation. In addition, damage to the tongue nerve in this case is likely to result in damage to the inferior alveolar nerve in the first molar and second premolar region.

Based on the classification data and various bone characteristics, the method of osteotomy and implantation was chosen. When the bone structure is dense and compact, rotation must be maintained and cooled at a sufficient rate. If the bone structure is particularly porous in the upper jaw, it is necessary to drill carefully and avoid pressure without expanding the implant area. Otherwise, the upper jaw may be punctured and the lower alveolar nerve may be damaged. These characteristics of different parts of the upper and lower jaws were taken into account in the subsequent classification developed by S. Misch (1990). According to him, the bone has high functionality, including the ability to adapt to various injuries and loads. They cause bone remodeling and remodeling, but the absence of overload preserves the physiological properties of the bone. According to the author, progressive treatment during implantation provides adaptation of the bone. Successful results can be achieved by proper evaluation of loads on the bone: thorough osteotomy, trauma-free implantation, adequate bone stability and adequate load after the second surgical procedure. The assessment of the clinical condition of the upper jaw and the alveolar part of the lower jaw is supplemented by the results of measuring the thickness of the mucous membrane. A comprehensive diagnostic assessment allows you to identify implants, select the type of implant and the number of implants, and develop a plan for both temporary and permanent orthopedic surgery. The choice of implants and their size depends on the conditions in the oral cavity and the future tasks of dentures. Given the large number of implant designs, it is important to consider the effects of different clinical treatments rather than the manufacturer's recommendations.

Additional operations on dental implants. Osteotomy for implantation and soft tissue shift should be performed to ensure that there is enough bone or soft tissue for the implant. If the texture is not enough, you can eliminate it with additional operational methods. In other cases, the soft tissues of the upper and lower jaw of the upper jaw and additional operations are necessary on the bone marrow. This occurs when there is enough tissue in the implant or not enough tissue to close it. Additional dental implants are divided into two groups: bone interventions and soft tissue interventions. Examples of oral soft tissue interventions include vestibuloplasty and mucosal free displacement. In dental implantation, auto-and allografts are used in the absence of bone tissue, artificial bones are used - tribasic acid phosphate, hydroxylapatite and other biomaterials, as well as nonabsorbing and absorbing membranes. Plastic surgery with autogenic bone grafts. It is used in cases of bone atrophy during implantation, mainly in the distal parts of the bone, near the lower jaw, alveolar larynx and in the oral cavity. The graft material is used as the ilium, cavity, retromolar region of the lower jaw, or upper jaw area. In addition, canned bone is used for bone plastic

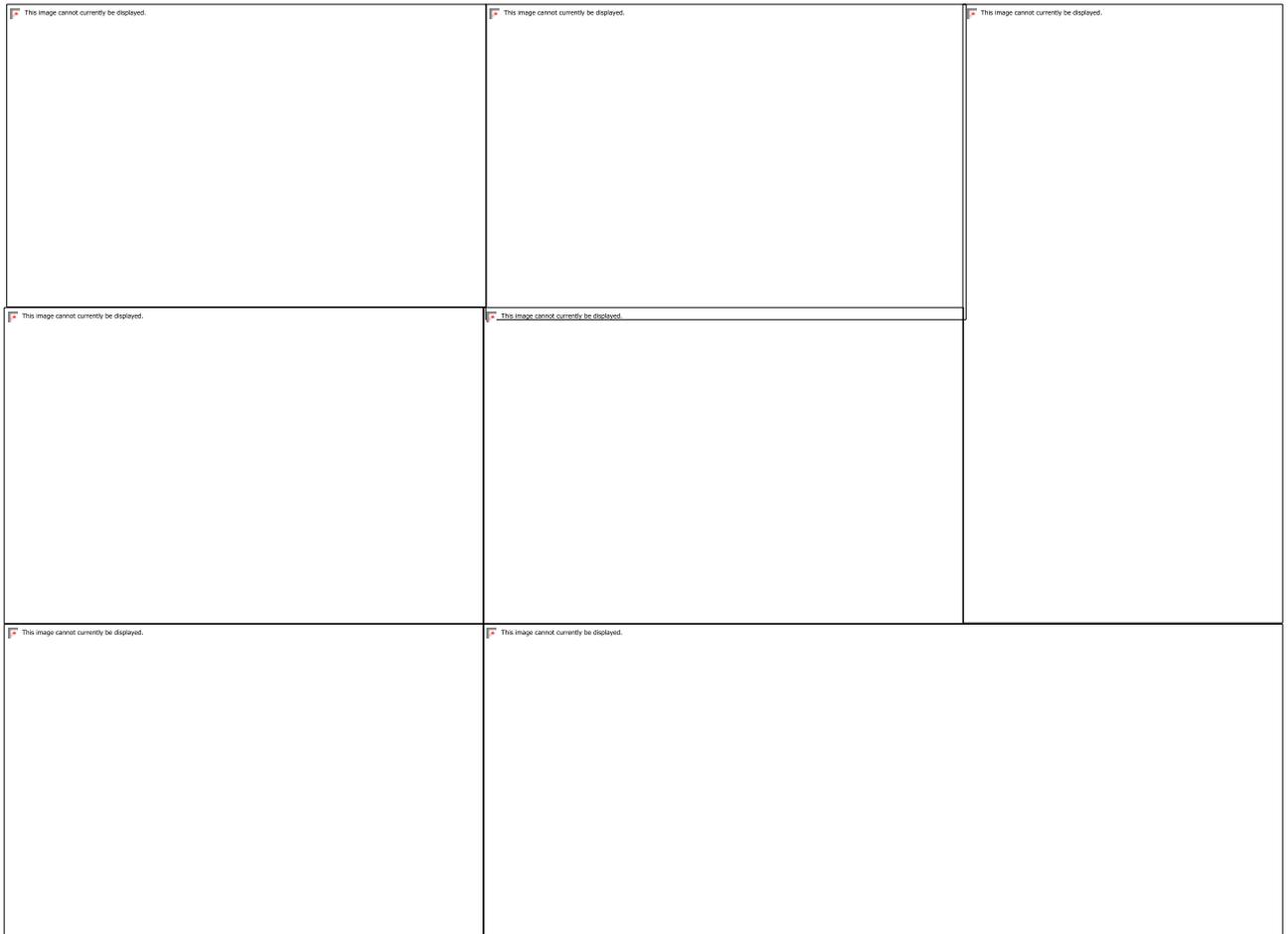
One example of pre-implantation is a change in the position of the nerve of the lower limb and the pelvic nerve. At the same time, removable membranes, cryogenic bones, etc. can be used. In cases of severe atherosclerosis, plastic surgery of the upper jaw, alveolar process of the larynx, nasal cavity and gamma cavity are common. As a result of surgical intervention it is possible to raise the nose or upper jaw, to change their position and enlarge the upper jaw. The results of such operations can reach 94.4% -100%. In the upper jaw, autosuplication, demineralized bone, combined bone grafts (osteogenon, osteogenon and collagen, osteogenon and blood, autosuuk and hydroxylappatite) are used.

Sinus-lifting - lifting the base of the gamma cavity.

There is a gap in the upper jaw that can be pneumatized, sclerotized and combined. The bases of the Gamor cavity may have different proportions with the roots of the upper jaw: they are either close to the cavity, or are penetrated, or never reach it.

As a result of A. S. Ivanov's anthropometric measurements, the distance between the bottom of the middle cavity and the root of the tooth averaged 7.4 mm.

The upper jaw is implanted under the cavity. The distance between the cavity and the implant should be at least 1-2 mm. However, when the teeth are removed or in the surrounding area of the alveoli, the implant and cavity remain close together, leaving only a thin plate. This complicates dental implantation. In this case, the bottom of the cavity is raised by biomaterials.



Placental implants are often single or combined. The implant consists of the intra-abdominal part - the body, the chest and the upper parts - the head or head (stamp). The body has a different structure and is rectangular in cross-section. The height varies from 8 mm to 15 mm and the length from 15 mm to 30 mm. The body consists of several cuts, and the lower lobe is wavy.

Advantages of implants (plate):

- 1) The implant can be inserted into a thin hand ball;
- 2) the implant does not penetrate deep into the bone, so it is unlikely that the gamma cavity, nasal cavity and lower extremities are damaged;
- 3) minor bleeding avoids perforation and damage to the alveolar process;

- 4) wide effect of the implant surface with bone ensures good fixation;
- 5) Most of the pores in the body are comfortable to penetrate the bones and provide stability;
- 6) Implants are easily tied and take the necessary shape.

In addition, flat implants can be used in combination with natural teeth as a support for dentures. The prosthesis can be performed within 3-4 weeks after surgery.

Implantation of implants is performed after patient preparation, premedication and local anesthesia of the peripheral branches of the tertiary nerve.

Sterility should be maintained during implantation (surgical methods, sterilization of instruments, materials, gloves).

The incision is made along the alveolar surface, where the mucosa and bone marrow are dissected and separated. Once the bone is exposed, its position, color, and cortical layer are checked. Irregularities on the surface of the bone should be leveled during the scan. Smoothing is performed by milling or using an existing machine with simultaneous cooling. If more than one implant is installed, the distance between them should be at least 3 mm.

Bone cysts are removed from the canal with a special tool. The cavity is washed with saline. Once the implant is formed, the implant is inserted into the cavity and the beat is beaten until the implant is fully formed. If the implant is difficult to insert, the implant will be removed and the cavity enlarged.

In all countries, toothpaste is widely used. Both screw and cylindrical implants are used.

Dental implants distinguish between both submerged and unobtrusive types and distinguish between one-stage or two-stage.

Single-stage implants are positioned so that the alveolar surface of the mouth is located in the oral cavity. Submersible implants are often used with screws and cylinders.

At the first stage, the implant is inserted into the bone, which is sutured to the mucous membrane and the surface of the bone marrow. In the second stage, the suture will open and the implant will be exposed to various structures.

Screw implants have the following advantages:

- 1) the osteotomy technique is simple and relatively surgically atraumatic during implantation;
- 2) implant length and thickness options allow you to choose the thickness, width and quality of the bone;
- 3) create a good place for implantation and ensure good bone healing;
- 4) Different shapes of the implant surface make it difficult for bones to adhere;
- 5) The fact that blood consists of many elements ensures good epithelization of soft tissues.

Two-stage implants open after 4 months in the lower jaw and after 6 months in the upper jaw. Once it is opened, excess bone tissue is removed and the surrounding area of the implant is thoroughly cleaned. After that, it will be sewn.

Coronavirus disease 2019 (COVID-19) is a contagious disease caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). The first case was identified in Wuhan, China, in December 2019. It has since spread worldwide, leading to an ongoing pandemic.

Symptoms of COVID-19 are variable, but often include fever, cough, fatigue, breathing difficulties, and loss of smell and taste. Symptoms begin one to fourteen days after exposure to the virus. Around one in five infected individuals do not develop any symptoms. While most people have mild symptoms, some people develop acute respiratory distress syndrome (ARDS). ARDS can be precipitated by cytokine storms multi-organ failure, septic shock, and blood clots. Longer-term damage to organs (in particular, the lungs and heart) has been observed. There is concern about a significant number of patients who have recovered from the acute phase of the disease but continue to experience a range of effects—known as long COVID—for months afterwards. These effects include severe fatigue, memory loss and other cognitive issues, low-grade fever, muscle weakness, and breathlessness.

The virus that causes COVID-19 spreads mainly when an infected person is in close contact with another person. Small droplets and aerosols containing the virus can spread from an infected person's nose and mouth as they breathe, cough, sneeze, sing, or speak. Other people are infected if the virus gets into their mouth, nose or eyes. The virus may also spread via contaminated surfaces, although this is not thought to be the main route of transmission. The exact route of transmission is rarely proven conclusively, but infection mainly happens when people are near each other for long enough. It can spread as early as two days before infected persons show symptoms, and from individuals who never experience symptoms. People remain infectious for up to ten days in moderate cases, and two weeks in severe cases. Various testing methods have been developed to diagnose the disease. The standard diagnosis method is by real-time reverse transcription polymerase chain reaction (rRT-PCR) from a nasopharyngeal swab.

Preventive measures include physical or social distancing, quarantining, ventilation of indoor spaces, covering coughs and sneezes, hand washing, and keeping unwashed hands away from the face. The use of face masks or coverings has been recommended in public settings to minimise the risk of transmissions. Several vaccines have been developed and various countries have initiated mass vaccination campaigns.

Although work is underway to develop drugs that inhibit the virus, the primary treatment is currently symptomatic. Management involves the treatment of symptoms, supportive care, isolation, and experimental measures.

Symptoms of COVID-19 are variable, ranging from mild symptoms to severe illness. Common symptoms include headache, loss of smell and taste, nasal congestion and rhinorrhea, cough, muscle pain, sore throat, fever and breathing difficulties. People with the same infection may have different symptoms, and their symptoms may change over time. In people without prior ears, nose, and throat disorders, loss of taste combined with loss of smell is associated with COVID-19 with a specificity of 95%.

Most people (81%) develop mild to moderate symptoms (up to mild pneumonia), while 14% develop severe symptoms (dyspnea, hypoxia, or more than 50% lung involvement on imaging) and 5% of patients suffer critical symptoms (respiratory failure, shock, or multiorgan dysfunction). Around one in five people are infected with the virus but do not develop noticeable symptoms at any point in time. These asymptomatic carriers tend not to get tested, and they can spread the disease. Other infected people will develop symptoms later (called *pre-symptomatic*) or have very mild symptoms, and can also spread the virus.

As is common with infections, there is a delay, known as the incubation period, between the moment a person first becomes infected and the appearance of the first symptoms. The median incubation period for COVID-19 is four to five days. Most symptomatic people experience symptoms within two to seven days after exposure, and almost all symptomatic people will experience one or more symptoms before day twelve.

COVID-19 spreads from person to person mainly through the respiratory route after an infected person coughs, sneezes, sings, talks or breathes. A new infection occurs when virus-containing particles exhaled by an infected person, either respiratory droplets or aerosols, get into the mouth, nose, or eyes of other people who are in close contact with the infected person. During human-to-human transmission, an average 1000 infectious SARS-CoV-2 virions are thought to initiate a new infection.

The closer people interact, and the longer they interact, the more likely they are to transmit COVID-19. Closer distances can involve larger droplets (which fall to the ground) and aerosols, whereas longer distances only involve aerosols. The larger droplets may also evaporate into the aerosols (known as droplet nuclei). The relative importance of the larger droplets and the aerosols is not clear as of November 2020, however the virus is not known to transmit between rooms over long distances such as through air ducts. Airborne transmission is able to particularly

occur indoors, in high risk locations, such as in restaurants, choirs, gyms, nightclubs, offices, and religious venues, often when they are crowded or less ventilated. It also occurs in healthcare settings, often when aerosol-generating medical procedures are performed on COVID-19 patients.

Social distancing and the wearing of cloth face masks, surgical masks, respirators, or other face coverings are controls for droplet transmission. Transmission may be decreased indoors with well maintained heating and ventilation systems to maintain good air circulation and increase the use of outdoor air.

The number of people generally infected by one infected person varies; as of September 2020 it was estimated that one infected person will, on average, infect between two and three other people. This is more infectious than influenza, but less so than measles. It often spreads in clusters, where infections can be traced back to an index case or geographical location. There is a major role of "super-spreading events", where many people are infected by one person.

Virology

Severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) is a novel severe acute respiratory syndrome coronavirus. It was first isolated from three people with pneumonia connected to the cluster of acute respiratory illness cases in Wuhan. All features of the novel SARS-CoV-2 virus occur in related coronaviruses in nature.

Outside the human body, the virus is destroyed by household soap, which bursts its protective bubble.

SARS-CoV-2 is closely related to the original SARS-CoV. It is thought to have an animal (zoonotic) origin. Genetic analysis has revealed that the coronavirus genetically clusters with the genus *Betacoronavirus*, in subgenus *Sarbecovirus* (lineage B) together with two bat-derived strains. It is 96% identical at the whole genome level to other bat coronavirus samples (BatCov RaTG13). The structural proteins of SARS-CoV-2 include membrane glycoprotein (M), envelope protein (E), nucleocapsid protein (N), and the spike protein (S). The M protein of SARS-CoV-2 is 98.6% similar to the M protein of bat SARS-CoV, maintains 98.2% homology with pangolin SARS-CoV, and has 90% homology with the M protein of SARS-CoV; whereas, the similarity is only 38% with the M protein of MERS-CoV. In silico analyses showed that the M protein of SARS-CoV-2 has a triple helix bundle, forms a single 3-transmembrane domain, and is homologous to the prokaryotic sugar transport protein SemiSWEET.

The many thousands SARS-CoV-2 variants are grouped into clades. Several different clade nomenclatures have been proposed. Nextstrain divides the variants into five clades (19A, 19B, 20A, 20B, and 20C), while GISAID divides them into seven (L, O, V, S, G, GH, and GR).

Several notable variants of SARS-CoV-2 emerged in the fall of 2020. Cluster 5 emerged among minks and mink farmers in Denmark. After strict quarantines and a mink euthanasia campaign, it is believed to have been eradicated. The Variant of Concern 202012/01 (VOC 202012/01) is believed to have emerged in the United Kingdom in September. The 501Y.V2 Variant, which has the same N501Y mutation, arose independently in South Africa.

Pathophysiology

COVID-19 can affect the upper respiratory tract (sinuses, nose, and throat) and the lower respiratory tract (windpipe and lungs). The lungs are the organs most affected by COVID-19 because the virus accesses host cells via the enzyme angiotensin-converting enzyme 2 (ACE2), which is most abundant in type II alveolar cells of the lungs. The virus uses a special surface

glycoprotein called a "spike" (peplomer) to connect to ACE2 and enter the host cell. The density of ACE2 in each tissue correlates with the severity of the disease in that tissue and some have suggested decreasing ACE2 activity might be protective, though another view is that increasing ACE2 using angiotensin II receptor blocker medications could be protective. As the alveolar disease progresses, respiratory failure might develop and death may follow.

Whether SARS-CoV-2 is able to invade the nervous system remains unknown. The virus is not detected in the CNS of the majority of COVID-19 patients with neurological issues. However, SARS-CoV-2 has been detected at low levels in the brains of patients who died from COVID-19, but these results need to be confirmed. SARS-CoV-2 may cause respiratory failure through affecting the brain stem as other coronaviruses have been found to invade the CNS. While virus has been detected in cerebrospinal fluid of autopsies, the exact mechanism by which it invades the CNS remains unclear and may first involve invasion of peripheral nerves given the low levels of ACE2 in the brain. The virus may also enter the bloodstream from the lungs and cross the blood-brain barrier to gain access to the CNS, possibly within an infected white blood cell by a "Trojan horse" mechanism.

The virus also affects gastrointestinal organs as ACE2 is abundantly expressed in the glandular cells of gastric, duodenal and rectal epithelium as well as endothelial cells and enterocytes of the small intestine.

The virus can cause acute myocardial injury and chronic damage to the cardiovascular system. An acute cardiac injury was found in 12% of infected people admitted to the hospital in Wuhan, China, and is more frequent in severe disease. Rates of cardiovascular symptoms are high, owing to the systemic inflammatory response and immune system disorders during disease progression, but acute myocardial injuries may also be related to ACE2 receptors in the heart. ACE2 receptors are highly expressed in the heart and are involved in heart function. A high incidence of thrombosis and venous thromboembolism have been found in intensive care unit (ICU)-transferred patients with COVID-19 infections, and may be related to poor prognosis. Blood vessel dysfunction and clot formation (as suggested by high D-dimer levels) are thought to play a significant role in mortality, incidences of clots leading to pulmonary embolisms, and ischaemic events within the brain have been noted as complications leading to death in patients infected with SARS-CoV-2. Infection appears to set off a chain of vasoconstrictive responses within the body, constriction of blood vessels within the pulmonary circulation has also been posited as a mechanism in which oxygenation decreases alongside the presentation of viral pneumonia.

Another common cause of death is complications related to the kidneys. Early reports show that up to 30% of hospitalized patients both in China and in New York have experienced some injury to their kidneys, including some persons with no previous kidney problems.

Autopsies of people who died of COVID-19 have found diffuse alveolar damage (DAD), and lymphocyte-containing inflammatory infiltrates within the lung.

Immunopathology

Although SARS-CoV-2 has a tropism for ACE2-expressing epithelial cells of the respiratory tract, patients with severe COVID-19 have symptoms of systemic hyperinflammation. Clinical laboratory findings of elevated IL-2, IL-7, IL-6, granulocyte-macrophage colony-stimulating factor (GM-CSF), interferon- γ inducible protein 10 (IP-10), monocyte chemoattractant protein 1 (MCP-1), Macrophage inflammatory protein 1- α (MIP-1 α), and tumour necrosis factor- α (TNF- α) indicative of cytokine release syndrome (CRS) suggest an underlying immunopathology.

Additionally, people with COVID-19 and acute respiratory distress syndrome (ARDS) have classical serum biomarkers of CRS, including elevated C-reactive protein (CRP), lactate dehydrogenase (LDH), D-dimer, and ferritin.

Systemic inflammation results in vasodilation, allowing inflammatory lymphocytic and monocytic infiltration of the lung and the heart. In particular, pathogenic GM-CSF-secreting T-cells were shown to correlate with the recruitment of inflammatory IL-6-secreting monocytes and severe lung pathology in COVID-19 patients. Lymphocytic infiltrates have also been reported at autopsy.

Recommended literature

- basic

1. . Робустова Т.Г. Руководство По Хирургической Стоматологии Челустно-Лицей Хирургии. volume 2, 2000
2. Робустова Т.Г. Имплантация хирургических аспектов имплантации - М., 2003.
3. В.Л. Параскевич Зубная имплантология: теория практики и практики: Scientific and practical manual /.-М., 2002.-386 p

Additional

1. Безрукова В.М Рук.-во по ксир.-ай стом.-ии чел.-лиц. хiirurgii. W 2 tomax. (ed.) - 2000
2. ТМ Lur'e. «Здравоохранение и стоматология» . М. Medgiz, 1963, p. 288.
3. «Стоматология сегодня»: Archive no. 3, p. 1-6.
4. Dental firm-Olga-Volgogradskaya, pp. 1-2.

web site:

www.eastman.ucl.ac.uk

www.budovsky.ru

www.tc.by/rus/medica

https://en.wikipedia.org/wiki/Coronavirus_disease_2019

Task:

1. Use the Internet to get news on the topic of the lesson and write practical notes-notebooks in independent workbooks.
2. Preparation of slides and multimedia on the topic.
3. We go to the library, make a dictionary and write a summary using foreign literature.

PRACTICAL TRAINING TOPIC 4
DENTAL IMPLANTATION ON THE LOWER JAW. DETERMINATION
OF CORONAVIRUS INFECTION IN PATIENTS AND SYMPTOMS OF
THE DISEASE.

The technological model of experiential learning.

Stages and duration of work	Activity	Students
	Teacher	
Stage 1 Introduction to the training session 10-minutes 10-minutes 15-minutes 5-minutes	1.1. Explain the title of the topic, goals and expected results. Explain the main definitions on the topic. Familiarize yourself with the lesson plan. 1.2. Give a list of references (Appendix No. 1) 1.3. Ask questions to engage students in brainstorming. Description of the procedure for organizing the educational process based on the plan and structure of the lesson. 1.4. Announce the criteria for evaluating the activity of students in the classroom. (appendix No. 2)	Listen and record Listen and record Answer the questions Listening
Stage 2 The main part 25-minutes 15-minutes 15-minutes 5-minutes 10-minutes 50-minutes 40-minutes 20-minutes Stage 3 Final 40-minutes 10-minutes 10-minutes	2.1. Conducting an express survey on the main definitions of the topic in order to activate students' knowledge.(appendix No. 2). A conclusion is given for each section of the topic and attention is drawn to the most basic ones, it is required to register these information in a notebook. 2.2. Organization of discussion of materials of the game "Black Horse", pay attention to the expression of problems of analysis of situations of the rules of work (Appendix No. 3) 2.3. Independent analysis of the conceptual table of organizers and the "Fish skeleton", give the task of expressing the problem and determining ways to solve it, then solve it. 2.4. Presentation of the concept table of the "Fish Skeleton" organizer. 2.5. Everyone solves tests and situational tasks by himself (Appendix No. 3.2) 2.6. Implementation of practical skills and supervision of patients in the department (clinical lesson). Change 2.7. Demonstration and explanation of visual aids (slides, presentations, videos) 3.1. Conclusion. A conclusion is made on the topic. 3.2. Active students are evaluated. The assessment criteria for the group are announced (Appendix 5) 3.3. Questions and tasks for independent training are asked(Appendix No. 7)	Answer questions and discuss them They ask explanatory questions They discuss the materials of the game Ask questions They fill out the analysis sheet themselves and solve the problem. Listening Solve tests. They supervise patients Listening They ask questions Listening Listen and evaluate yourself They record tasks.
Total		6 hours

Interdisciplinary and interdisciplinary relations.

Teaching this topic is based on the knowledge and fundamentals of students: anatomy, histology, normal and pathological physiology. The use of the knowledge gained during the course will include anatomy, pediatric dentistry and other clinical disciplines, as well as all the information necessary for surgical dentistry, information about diseases and treatment principles.

Interactive method: a teaching method based on the principle of " paper»

According to this method, students are divided into groups of 2, 4, 8 and give feedback. The good thing about this method is that it creates tension between groups without much effort. The teacher offers students an independent solution. After the discussion, the subgroups are divided into 4 groups, and after the discussion, the groups are grouped into two groups, and the discussion is organized into one group. As a result, a well-thought-out general opinion is formed. In this method, each student tries to give their own feedback while working.

The essence of style:

- Each student solves a problem
- During the discussions in the focus groups each sub-group tries to justify your answer
- * The problem is repeated more than once in several groups and can lead to the development of memory and knowledge.

Aquarium style

In this case, 3 people will be selected from the group, and the rest of the students will be observers. It's like the TV series "What, Where, When". If students can't find the answers within one minute, they will be replaced by three more.

- * The topic is discussed in the middle
- * reveals the topic
- * Explains students ' knowledge
- enhances the skills of discussion
- Method of play
- Every student participates

Security questions

1. What is implantation and its application in dentistry?
2. History of the development of dental implantology.
3. Advantages of dental implantology
4. Symptoms of implantation effectiveness (Smith, 1987).
5. Classification of implants.

By type A)

B) on the material

B) According to the form

D) implantation technique

6. Methods of examination of patients before dental implantation (clinical, paraclinical and laboratory).
7. Instructions and contraindications for dental implantation.
8. Sequence of preparation and execution of patients for dental implantation.
9. General principles and features of lamellar intraocular dental implantation.
10. General principles and features of intraoperative dental implant surgery.

Subject of the proposed independent work.

The importance of individual radiography methods in the diagnosis of UTI.

TEST:

1. What type of implant does not exist:
 - A. Mucous surface
 - B. endoossal
 - V. Subperiostal
 - G. Bone
 - D. endodanto-endoossal
2. Implants for receiving biomos do not differ:
 - A. Bone
 - B. Bioinert
 - V. Bioactive
 - G. Biotolerant
 - D. s Zircon
3. No bone marrow implant:
 - A. Round
 - B. Screw
 - V. Cylindrical
 - D. in the form of natural teeth
 - D. Plate
4. The implant does not include:
 - A. part of the crown
 - B.
 - V. abutment
 - G. implant
 - D. No correct answer
5. Dental implant does not include:
 - A. Prevention of pathological tooth degradation
 - B. pressure distribution
 - V. prevention of jaw atrophy
 - G. prevention of partial tooth loss in aden
 - D. base
6. Do you know what types of endossal implants?
 - A. Cone
 - B. Yassi
 - V. Button
 - G. Tubular
 - D. Magnetic
7. Bioinert implant types do not include the following:
 - A. Stainless steel
 - B. aluminum hydroxide, ceramics
 - B. steel
 - G. Titanium
 - D. zirconium dioxide
8. What design of the dental implant is not part of the A. Linkov screwdriver
 - B. Bonerit
 - V. Korea Vent
 - G. Astra Tex
 - D. Contrast
9. Bone and implant formation:
 - A. osteointegration
 - B. fibrointegration

- V. fibro-osteointegration
 - G. all answers are correct
 - D. all answers are incorrect
10. The most perfect connection between bone and implant:
- A. bone
 - B. fibrosis
 - B. mixed
 - G. muscle
 - D. scars
11. For severe bone atrophy, the following implants are usually used:
- A. Under the surface of the bone marrow
 - B. flat
 - V. screw
 - G. cylinder
 - D. cone-shaped
12. Local recommendations for dental implantation:
- A. bruxism
 - B. partial attachment
 - B. full intimacy
 - G. lack of fixation of soluble dentures
 - D. atrophy of the jaw
13. Provide absolute recommendations for dental implantation:
- A. Allergic reaction to implantation of the material
 - B. precancerous compounds
 - V. hypersalivation
 - G. hepatitis
 - D. deformity of the growth axis
14. What testing procedure is not performed during dental implantation surgery?
- A. Anthropometric measurements of the face
 - B. tomography
 - V. Development of diagnostic models
 - G. orthopantomogram
 - D. clinical trials

Situational issues:

1. The patient is 40 years old. Secondary adenia in the upper jaw 54/34. External examination, oral examination, instrumental examination and panoramic radiography were performed.

What additional radiographs should be performed?

Answer: In addition, panoramic photos should be taken straight and close to each other, as they can determine the relationship of the alveolar arches of the jaws. This does not apply to the general orthopantomogram.

2. The patient is 47 years old. 321 / 12 Secondary adenia in the field. External examination, examination of the oral cavity radiology.

Who else can help with the selection and installation of the implant?

Answer: A more complete examination can be performed by an orthopedic surgeon. It gives a clearer picture: the interaction of jaws and teeth, as the chewing system and jaw and use the jaw model allows to design the surgical procedure.

3. The patient is 36 years old. Secondary adenitis in the lower jaw | 456. It was decided to put a vinyl implant. What basic and additional tests can be done to determine the probability of implantation of this implant?

Complete examination of the oral cavity, palpation, instrumental methods: measurement of the thickness of the alveolar process, radiography, RCT, MRI, etc.

The theoretical part.

With atrophy of the alveolar nerves of the lower jaw, the lower alveolar nerve moves to the tongue. Atrophy of the alveolar tumor can lead to the opening of the lower alveolar nerve and the displacement of the tooth opening. In this case, the nerve may be located in the alveolar artery. Perforation of the alveolar nerve will affect implantation and future orthopedic construction. Nerve damage can have complications such as nerve damage or hemorrhage, otherwise alveolar esophagus implantation cannot be implanted without surgery, such as alveolar tract growth or nerve reposition.

Atrophy of the alveolar process of the lower jaw is caused by corn. After tooth extraction, the alveolar gland is thinned and forms a knife injury. Later, it is exposed to the hip and becomes thinner. The alveolar growth is flattened in the lower jaw. Anatomical formations of the anterior and posterior muscles of the mouth are palpated along the edges of the alveolar process. There are several classifications for dental implants by Kennedy (1928) and W. Linholm and G. Zarb (1985) for dental implants, as well as by S. Mish and K. Judy (1987). They determine the characteristics of the jaws based on the X-ray image. In diagnostics and dental implantation, the computer uses a three-dimensional mathematical model using tomography and NAMR and anthropometric measurements of the jaws. [Sidelnikov A. I., 1992; Robustova T. G. 2000].

Implantation and osteotomy are selected depending on the classification presented and the condition of the bone. An osteotomy in a hard compact bone rests by cooling. If the mucous membrane is rare, osteotomy, especially in the upper jaw, can be avoided.

If this happens, the laryngeal cavity and the lower alveolar nerve may be damaged.

According to the information provided, the bone has a higher functional adaptation and supports the physiological state of the bone. According to S. Misch (1990), the stages of implantation treatment lead to bone adaptation. If the pressure is distributed correctly, the expected result can always be achieved. Trauma, osteotomy and implantation, primary stabilization in the 2nd surgical stage is supplemented by a clinical assessment of the alveolar process of the jaw in the upper jaw. Computer scanning implantation, implant design will allow you to choose the type of implant and develop a surgical intervention plan, an orthopedic treatment plan. The type and number of implants depends on the condition of the oral cavity and the future base of the prosthesis. Given the large number of implant designs, it is important to pay attention to the results of treatment in different clinical settings, and not to the manufacturer's recommendations.

Assessment of the functional state of the body and preparation for dental implantation.

Dental implantation is performed by surgical intervention. This requires consideration of the functional state of each patient. However, since implantation is not based on life expectancy, surgery can have a negative impact on the entire body. This prevents sudden death during surgery.

US practice has shown that 80% of patients who need to be implanted suffer from chronic diseases. 50% of them over 65 years of age tried underlying diseases, 39% increased blood pressure, cardiovascular and other diseases of the system by 27%. In Russia, the number of patients with pathology of the immune response to diabetes and osteoporosis is growing, which limits dental implantation, reduces the overall effectiveness and prolongs the rehabilitation time.

Surgery is a top priority for the dental surgeon during patient screening, comorbidity, and assessment of overall physiological status. It is important to pay attention to medical

information that may indicate implantation and that may affect implantation. The physical condition of the patient is assessed by the symptom that he has. Then, the results of laboratory tests, clinical blood analysis and features of the coagulogram will be taken into account. Then, comparing the dental status with the laboratory study and the functional state of the body, the presence of somatic pathology, the indications for dental implantation are determined.

Before implantation, the evaluation of the patient is important for surgical injections, prosthetics and hygiene of the oral cavity. The demand for dental implants increases with age, which means that most applicants are older.

An assessment of the functional state of the organ can be found in an interview with the dentist and the patient's complete medical history. Along with this, it identifies a risk factor. During the interview, it was determined that the complication was based on complaints. Distinguishes between major and minor ones and evaluates them professionally. Patients may complain of pain in the mouth, other disorders of the oral cavity, diseases of the maxillofacial and other organs and systems. Therefore, the patient's oral cavity should be sanctioned during the general examination. This ensures that you do not experience tooth and periodontal pain during the general examination. The patient may complain of oral pain, sore throat, and a peripheral nerve with three horns to the CHPJB. Diseases related to the vascular, endocrine, nervous system, and gastrointestinal tract should be identified. If certain symptoms are detected, a more in-depth analysis and treatment of the neuropsychiatric condition should be established and the consequences for implantation surgery and orthopedic treatment should be established.

The patient is asked to determine his or her growth and development. Parents should be informed about their health, working conditions, lifestyle, patient rest and physical activity. In addition, you should take care of smoking, alcohol, consumption, drugs, drugs. GENERAL INFORMATION Provides accurate information about the patient's overall physical health. Smoking can lead to partial implantation. Vane and Maud learned how to treat implants in smokers. They analyzed the results of treatment of 540 patients. In the observed group, 5.92 cases did not end, 11.28% of non-smokers and 4.7% of non-smokers. This means that the risk of smoking in implants is 2.4 times higher. It should be noted that many drug and alcohol users are not implanted. Anamnesis is collected due to hereditary diseases and genetic factors. If the offspring have allergic, autoimmune, immunoproliferative, malignant neoplasms and mental illnesses, several generations of patients should be examined. The doctor should be careful with the patient's hereditary diseases and syndromes, some of which have immune defects. Sometimes it may require dental implants or special training of patients with promotability factors. In other cases, heredity is denied after a thorough investigation.

During the collection of the medical history, the candidate for implantation can identify any other systemic disease or other disease according to the questionnaire. It serves to systematize information about the disease. In 1987, we developed practical guidelines and recommendations for dental implantation in the detection of common diseases in the pathology of the polyclinic. The questionnaire developed by us corresponds to the international standards of assessment of the functional state of the patient for the presence of dental implants. A comprehensive classification of dental implantation operations has been developed. It is designed to adequately account for the functional state of the patient.

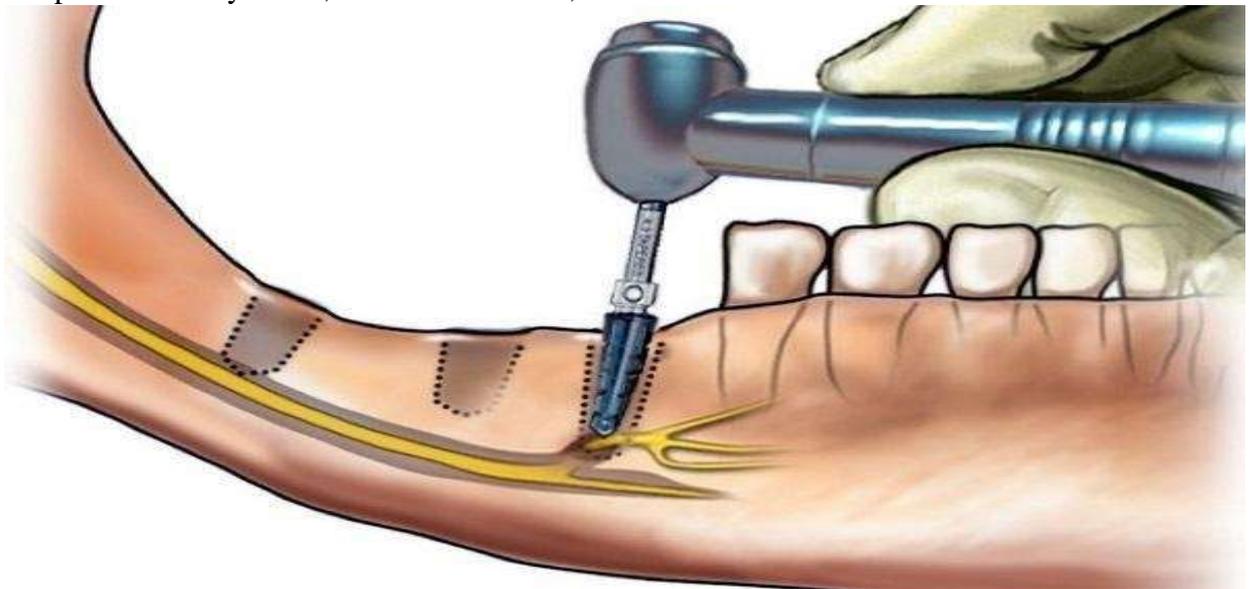
The complexity of teeth is the anatomical features of dental implants and, above all, the quality of bone. Anatomical changes or other factors related to age play an important role. The complexity of implantation varies by 4 levels depending on the accumulated skills and anamnesis:

Surgical manipulation of level I implantation of one flat or 1-2 root forms is less risky, but complications are more difficult. Bone damage can be caused by bleeding, nerve damage in the three horns, perforation of the upper jaw, and a fracture of the wall of the implanted lobe.

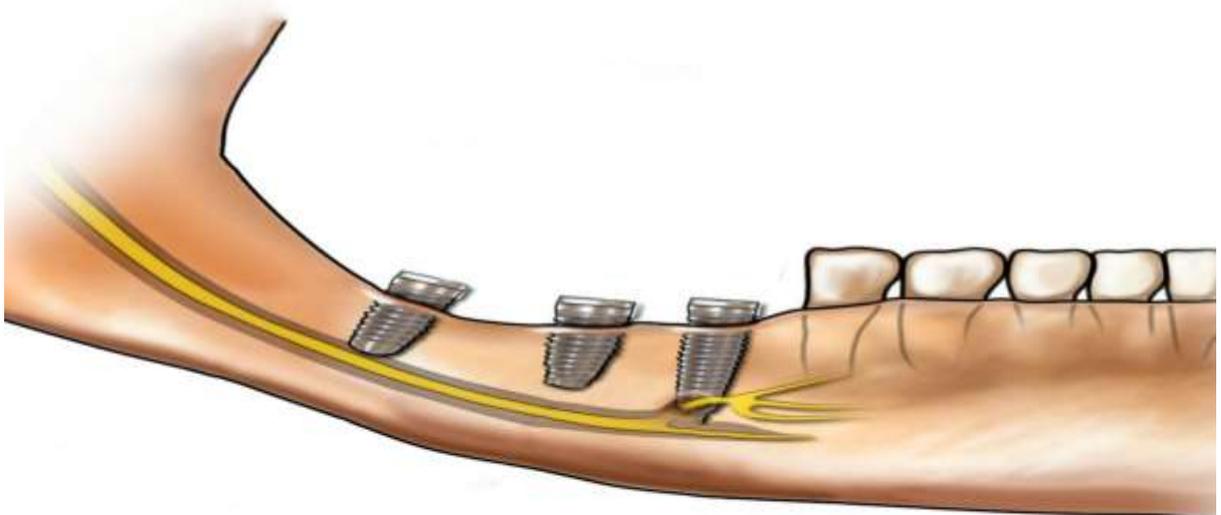
Complication level II is calculated using 2-3 flat implants or 3-4 root implants. At the same time, there is a similar degree of complication. Operation from 40 to 2 hours.

The level III complication was more difficult to establish in the implant than in 4 implants, or in the reconstruction of the alveolar process using soft tissue plastic, automatic or allotransplantation, the upper jaw in the lower alveolar nerve is repositioned.

Level I is also complex, depending on the surgical intervention and volume. In this case, complications may occur, as in the first case, from 2 to 3 hours.



During the inflammatory phase, the first cellular function is replaced by specific reactions in which lymphocytes and monocytes play a key role. Their effect begins 6-7 days after implantation. At first, specific immunological reactions are accompanied by non-specific reactions. This manifests itself in the proliferation of T cells and B cells, T cells and T cells, and macrophages. All cell populations are sensitive to specific antigenic substances and to the microflora found at the source of inflammation during surgery during bacterial dental plaques. Immunocompatible cells and macrophages interact with microbial agents to perform controlling, inflammatory, and cytotoxic functions. Implants play an important role in implantation, in cellular inflammatory responses of tissues. Infections occur within 5-6 days after surgery with the formation of monocytes in the blood. In some areas of the implant surface, a small number of macrophages are present, especially in areas where there is no contact with the bone. Sometimes a large number of giant cells are stored there. It retains the same amount of foreign cells in the body. Preservation of cells, such as foreign body cells, is a sign of a negative result and suggests.



Coronavirus disease 2019 (COVID-19) is a contagious disease caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). The first case was identified in Wuhan, China, in December 2019. It has since spread worldwide, leading to an ongoing pandemic.

Symptoms of COVID-19 are variable, but often include fever, cough, fatigue, breathing difficulties, and loss of smell and taste. Symptoms begin one to fourteen days after exposure to the virus. Around one in five infected individuals do not develop any symptoms. While most people have mild symptoms, some people develop acute respiratory distress syndrome (ARDS). ARDS can be precipitated by cytokine storms, multi-organ failure, septic shock, and blood clots. Longer-term damage to organs (in particular, the lungs and heart) has been observed. There is concern about a significant number of patients who have recovered from the acute phase of the disease but continue to experience a range of effects—known as long COVID—for months afterwards. These effects include severe fatigue, memory loss and other cognitive issues, low-grade fever, muscle weakness, and breathlessness.

The virus that causes COVID-19 spreads mainly when an infected person is in close contact with another person. Small droplets and aerosols containing the virus can spread from an infected person's nose and mouth as they breathe, cough, sneeze, sing, or speak. Other people are infected if the virus gets into their mouth, nose or eyes. The virus may also spread via contaminated surfaces, although this is not thought to be the main route of transmission. The exact route of transmission is rarely proven conclusively, but infection mainly happens when people are near each other for long enough. It can spread as early as two days before infected persons show symptoms, and from individuals who never experience symptoms. People remain infectious for up to ten days in moderate cases, and two weeks in severe cases. Various testing methods have been developed to diagnose the disease. The standard diagnosis method is by real-time reverse transcription polymerase chain reaction (rRT-PCR) from a nasopharyngeal swab.

Preventive measures include physical or social distancing, quarantining, ventilation of indoor spaces, covering coughs and sneezes, hand washing, and keeping unwashed hands away from the face. The use of face masks or coverings has been recommended in public settings to minimise the risk of transmissions. Several vaccines have been developed and various countries have initiated mass vaccination campaigns.

Although work is underway to develop drugs that inhibit the virus, the primary treatment is currently symptomatic. Management involves the treatment of symptoms, supportive care, isolation, and experimental measures.

Symptoms of COVID-19 are variable, ranging from mild symptoms to severe illness. Common symptoms include headache, loss of smell and taste, nasal congestion and rhinorrhea, cough, muscle pain, sore throat, fever and breathing difficulties. People with the same infection may have different symptoms, and their symptoms may change over time. In people without prior ears, nose, and throat disorders, loss of taste combined with loss of smell is associated with COVID-19 with a specificity of 95%.

Most people (81%) develop mild to moderate symptoms (up to mild pneumonia), while 14% develop severe symptoms (dyspnea, hypoxia, or more than 50% lung involvement on imaging) and 5% of patients suffer critical symptoms (respiratory failure, shock, or multiorgan dysfunction). Around one in five people are infected with the virus but do not develop noticeable symptoms at any point in time. These asymptomatic carriers tend not to get tested, and they can spread the disease. Other infected people will develop symptoms later (called *pre-symptomatic*) or have very mild symptoms, and can also spread the virus.

As is common with infections, there is a delay, known as the incubation period, between the moment a person first becomes infected and the appearance of the first symptoms.

The median incubation period for COVID-19 is four to five days. Most symptomatic people experience symptoms within two to seven days after exposure, and almost all symptomatic people will experience one or more symptoms before day twelve.

COVID-19 spreads from person to person mainly through the respiratory route after an infected person coughs, sneezes, sings, talks or breathes. A new infection occurs when virus-containing particles exhaled by an infected person, either respiratory droplets or aerosols, get into the mouth, nose, or eyes of other people who are in close contact with the infected person. During human-to-human transmission, an average 1000 infectious SARS-CoV-2 virions are thought to initiate a new infection.

The closer people interact, and the longer they interact, the more likely they are to transmit COVID-19. Closer distances can involve larger droplets (which fall to the ground) and aerosols, whereas longer distances only involve aerosols. The larger droplets may also evaporate into the aerosols (known as droplet nuclei). The relative importance of the larger droplets and the aerosols is not clear as of November 2020, however the virus is not known to transmit between rooms over long distances such as through air ducts. Airborne transmission is able to particularly occur indoors, in high risk locations, such as in restaurants, choirs, gyms, nightclubs, offices, and religious venues, often when they are crowded or less ventilated. It also occurs in healthcare settings, often when aerosol-generating medical procedures are performed on COVID-19 patients.

Social distancing and the wearing of cloth face masks, surgical masks, respirators, or other face coverings are controls for droplet transmission. Transmission may be decreased indoors with well maintained heating and ventilation systems to maintain good air circulation and increase the use of outdoor air.

The number of people generally infected by one infected person varies; as of September 2020 it was estimated that one infected person will, on average, infect between two and three other people. This is more infectious than influenza, but less so than measles. It often spreads in clusters, where infections can be traced back to an index case or geographical location. There is a major role of "super-spreading events", where many people are infected by one person.

Virology

Severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) is a novel severe acute respiratory syndrome coronavirus. It was first isolated from three people with pneumonia connected to the cluster of acute respiratory illness cases in Wuhan. All features of the novel SARS-CoV-2 virus occur in related coronaviruses in nature.

Outside the human body, the virus is destroyed by household soap, which bursts its protective bubble.

SARS-CoV-2 is closely related to the original SARS-CoV. It is thought to have an animal (zoonotic) origin. Genetic analysis has revealed that the coronavirus genetically clusters with the genus *Betacoronavirus*, in subgenus *Sarbecovirus* (lineage B) together with two bat-derived strains. It is 96% identical at the whole genome level to other bat coronavirus samples (BatCov RaTG13). The structural proteins of SARS-CoV-2 include membrane glycoprotein (M), envelope protein (E), nucleocapsid protein (N), and the spike protein (S). The M protein of SARS-CoV-2 is 98.6% similar to the M protein of bat SARS-CoV, maintains 98.2% homology with pangolin SARS-CoV, and has 90% homology with the M protein of SARS-CoV; whereas, the similarity is only 38% with the M protein of MERS-CoV. In silico analyses showed that the M protein of SARS-CoV-2 has a triple helix bundle, forms a single 3-transmembrane domain, and is homologous to the prokaryotic sugar transport protein SemiSWEET.

The many thousands SARS-CoV-2 variants are grouped into clades. Several different clade nomenclatures have been proposed. Nextstrain divides the variants into five clades (19A, 19B, 20A, 20B, and 20C), while GISAID divides them into seven (L, O, V, S, G, GH, and GR).

Several notable variants of SARS-CoV-2 emerged in the fall of 2020. Cluster 5 emerged among minks and mink farmers in Denmark. After strict quarantines and a mink euthanasia campaign, it is believed to have been eradicated. The Variant of Concern 202012/01 (VOC 202012/01) is believed to have emerged in the United Kingdom in September. The 501Y.V2 Variant, which has the same N501Y mutation, arose independently in South Africa.

Pathophysiology

COVID-19 can affect the upper respiratory tract (sinuses, nose, and throat) and the lower respiratory tract (windpipe and lungs). The lungs are the organs most affected by COVID-19 because the virus accesses host cells via the enzyme angiotensin-converting enzyme 2 (ACE2), which is most abundant in type II alveolar cells of the lungs. The virus uses a special surface glycoprotein called a "spike" (peplomer) to connect to ACE2 and enter the host cell. The density of ACE2 in each tissue correlates with the severity of the disease in that tissue and some have suggested decreasing ACE2 activity might be protective, though another view is that increasing ACE2 using angiotensin II receptor blocker medications could be protective. As the alveolar disease progresses, respiratory failure might develop and death may follow.

Whether SARS-CoV-2 is able to invade the nervous system remains unknown. The virus is not detected in the CNS of the majority of COVID-19 patients with neurological issues. However, SARS-CoV-2 has been detected at low levels in the brains of patients who died from COVID-19, but these results need to be confirmed. SARS-CoV-2 may cause respiratory failure through affecting the brain stem as other coronaviruses have been found to invade the CNS. While virus has been detected in cerebrospinal fluid of autopsies, the exact mechanism by which it invades the CNS remains unclear and may first involve invasion of peripheral nerves given the low levels of ACE2 in the brain. The virus may also enter the bloodstream from the lungs and cross the blood-brain barrier to gain access to the CNS, possibly within an infected white blood cell by a "Trojan horse" mechanism.

The virus also affects gastrointestinal organs as ACE2 is abundantly expressed in the glandular cells of gastric, duodenal and rectal epithelium as well as endothelial cells and enterocytes of the small intestine.

The virus can cause acute myocardial injury and chronic damage to the cardiovascular system. An acute cardiac injury was found in 12% of infected people admitted to the hospital in Wuhan, China, and is more frequent in severe disease. Rates of cardiovascular symptoms are high, owing to the systemic inflammatory response and immune system disorders during disease progression, but acute myocardial injuries may also be related to ACE2 receptors in the heart. ACE2 receptors are highly expressed in the heart and are involved in heart function. A high incidence of thrombosis and venous thromboembolism have been found in intensive care unit (ICU)-transferred patients with COVID-19 infections, and may be related to poor prognosis. Blood vessel dysfunction and clot formation (as suggested by high D-dimer levels) are thought to play a significant role in mortality, incidences of clots leading to pulmonary embolisms, and ischaemic events within the brain have been noted as complications leading to death in patients infected with SARS-CoV-2. Infection appears to set off a chain of vasoconstrictive responses within the body, constriction of blood vessels within the pulmonary circulation has also been posited as a mechanism in which oxygenation decreases alongside the presentation of viral pneumonia.

Another common cause of death is complications related to the kidneys. Early reports show that up to 30% of hospitalized patients both in China and in New York have experienced some injury to their kidneys, including some persons with no previous kidney problems.

Autopsies of people who died of COVID-19 have found diffuse alveolar damage (DAD), and lymphocyte-containing inflammatory infiltrates within the lung.

Immunopathology

Although SARS-CoV-2 has a tropism for ACE2-expressing epithelial cells of the respiratory tract, patients with severe COVID-19 have symptoms of systemic hyperinflammation. Clinical laboratory findings of elevated IL-2, IL-7, IL-6, granulocyte-macrophage colony-stimulating factor (GM-CSF), interferon- γ inducible protein 10 (IP-10), monocyte chemoattractant protein 1 (MCP-1), Macrophage inflammatory protein 1- α (MIP-1 α), and tumour necrosis factor- α (TNF- α) indicative of cytokine release syndrome (CRS) suggest an underlying immunopathology.

Additionally, people with COVID-19 and acute respiratory distress syndrome (ARDS) have classical serum biomarkers of CRS, including elevated C-reactive protein (CRP), lactate dehydrogenase (LDH), D-dimer, and ferritin.

Systemic inflammation results in vasodilation, allowing inflammatory lymphocytic and monocytic infiltration of the lung and the heart. In particular, pathogenic GM-CSF-secreting T-cells were shown to correlate with the recruitment of inflammatory IL-6-secreting monocytes and severe lung pathology in COVID-19 patients. Lymphocytic infiltrates have also been reported at autopsy.

Recommended literature

- basic

1. . Робустова Т.Г. Руководство По Хирургической Стоматологии Челустно-Лицей Хирургии. volume 2, 2000
2. Робустова Т.Г. Имплантация хирургических аспектов имплантации - М., 2003.
3. В.Л. Параскевич Зубная имплантология: теория практики и практики: Scientific and practical manual /.-М., 2002.-386 p

Additional

1. Безрукова В.М Рук.-во по ксир.-ай стом.-ии чел.-лиц. хirurgii. W 2 tomax. (ed.) - 2000
2. ТМ Lur'e. «Здравоохранение и стоматология» . М. Medgiz, 1963, p. 288.
3. «Стоматология сегодня»: Archive no. 3, p. 1-6.
4. Dental firm-Olga-Volgogradskaya, pp. 1-2.

web site:

www.eastman.ucl.ac.uk

www.budovsky.ru

www.tc.by/rus/medica

https://en.wikipedia.org/wiki/Coronavirus_disease_2019

Task:

1. Use the Internet to get news on the topic of the lesson and write practical notes-notebooks in independent workbooks.
2. Preparation of slides and multimedia on the topic.
3. We go to the library, make a dictionary and write a summary using foreign literature.

PRACTICAL TRAINING TOPIC 5
ADDITIONAL OPERATIONS FOR DENTAL IMPLANTATION IN THE
UPPER JAW (SINUS LIFTING AND AUGMENTATION).

The technological model of experiential learning.

Stages and duration of work	Activity	Students
	Teacher	
Stage 1 Introduction to the training session 10-minutes 10-minutes 15-minutes 5-minutes	1.1. Explain the title of the topic, goals and expected results. Explain the main definitions on the topic. Familiarize yourself with the lesson plan. 1.2. Give a list of references (Appendix No. 1) 1.3. Ask questions to engage students in brainstorming. Description of the procedure for organizing the educational process based on the plan and structure of the lesson. 1.4. Announce the criteria for evaluating the activity of students in the classroom. (appendix No. 2)	Listen and record Listen and record Answer the questions Listening
Stage 2 The main part 25-minutes 15-minutes 15-minutes 5-minutes 10-minutes 50-minutes 40-minutes 20-minutes Stage 3 Final 40-minutes 10-minutes 10-minutes	2.1. Conducting an express survey on the main definitions of the topic in order to activate students' knowledge.(appendix No. 2). A conclusion is given for each section of the topic and attention is drawn to the most basic ones, it is required to register these information in a notebook. 2.2. Organization of discussion of materials of the game "Black Horse", pay attention to the expression of problems of analysis of situations of the rules of work (Appendix No. 3) 2.3. Independent analysis of the conceptual table of organizers and the "Fish skeleton", give the task of expressing the problem and determining ways to solve it, then solve it. 2.4. Presentation of the concept table of the "Fish Skeleton" organizer. 2.5. Everyone solves tests and situational tasks by himself (Appendix No. 3.2) 2.6. Implementation of practical skills and supervision of patients in the department (clinical lesson). Change 2.7. Demonstration and explanation of visual aids (slides, presentations, videos) 3.1. Conclusion. A conclusion is made on the topic. 3.2. Active students are evaluated. The assessment criteria for the group are announced (Appendix 5) 3.3. Questions and tasks for independent training are asked(Appendix No. 7)	Answer questions and discuss them They ask explanatory questions They discuss the materials of the game Ask questions They fill out the analysis sheet themselves and solve the problem. Listening Solve tests. They supervise patients Listening They ask questions Listening Listen and evaluate yourself They record tasks.
Total		6 hours

Interdisciplinary and interdisciplinary relations.

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Interactive method: a teaching method based on the principle of " paper»

According to this method, students are divided into groups of 2, 4, 8 and give feedback. The good thing about this method is that it creates tension between groups without much effort. The teacher offers students an independent solution. After the discussion, the subgroups are divided into 4 groups, and after the discussion, the groups are grouped into two groups, and the discussion is organized into one group. As a result, a well-thought-out general opinion is formed. In this method, each student tries to give their own feedback while working.

The essence of style:

- Each student solves a problem
- During the discussions in the focus groups each sub-group tries to justify your answer
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Aquarium style

In this case, 3 people will be selected from the group, and the rest of the students will be observers. It's like the TV series "What, Where, When". If students can't find the answers within one minute, they will be replaced by three more.

- * The topic is discussed in the middle
- * reveals the topic
- * Explains students' knowledge
- enhances the skills of discussion
- Method of play
- Every student participates

Security questions

1. Surgical methods of surgical preparation of patients for dental implantation and its sequence.
2. What types of implants are there?
3. Types of screw implants.
4. Upper jaw types of the upper jaw.
5. Types of platelets in the lower jaw.
6. Osteoplastic materials used in implantation
7. What are the different types of maxillary lift operations (sinus lifting)?
8. Osteoplastic materials used in sinus lifting
9. Methods of lateralization of the nerve of the lower extremities

Subject of the proposed independent work.

Treatment of malignant neoplasms with chemotherapy and light therapy.

TEST:

1. What method of sinus lifting is used when the subantral bone is 5-8 mm?
 - A. method of lateral opening of the window
 - B. localization of the bottom cavity (osteotomy)
 - V. lymphatic sinus lifting using an autoclave
 - G. by painting the front wall of the cavity
 - D. Instructions against sinus lifting
2. According to Mish D. What quality of bone is found in the anterior part of the upper jaw:
 - A. D1
 - B. D4
 - V. D2; D3
 - G. D3; D4
 - D. D1; D4
3. What method of sinus lifting is used when the subantral bone is 9-10 mm?
 - A. method of lateral opening of the window
 - B. The cavity is raised locally (osteotomy).
 - V. Lateral sinus with bone application
 - G. by painting the anterior wall of the cavity
 - D. all answers are correct
4. The optimal distance between the upper jaw and the maxillary cavity:
 - A. 11 mm
 - B. 12 mm or more
 - B. 1 mm
 - 1.5 mm
 - D. 7 mm
5. At what thickness is the subantral bone used for autoimmune sinus lift:
 - A. 6 mm
 - B. 6-7 mm
 - V. If less than 5 mm
 - 5 mm

Autoinducers not be used to lift sinus D.
6. What are the types of upper jaw lift?
 - A. method of lateral opening of the window
 - B. The cavity is raised locally (osteotomy).
 - V. endoscopic lifting through the medial wall
 - G. all answers are correct
 - D. painting the anterior wall of the cavity
7. What is the diameter of the bone layer after removal of the localized mucosa?
 - A. less than 1 mm less than the diameter of the implant
 - 0.5 mm smaller than the implant diameter
 - V. 0.5 mm larger than the implant diameter
 - Just like G. implant
 - D. less than 2 mm smaller than the diameter of the implant
8. When the quality of the upper jaw of the microscope is D3, when performing the second stage of implantation
 - A. 3 months
 - B. 9 months
 - V. 6 months
 - G. 4 months
 - D. 1 month
9. How long after biosynthetic sinus lift implantation:
 - A. 3 months

- B. 9 months
- V. 6 months
- G. 4 months
- D. 2 months

Situational questions:

1. The patient is 45 years old. On the upper jaws defects of the left 5-6-7 teeth. Examples of molars in the upper jaw and options for preparing dental implants.

Answer: Radiographs (dental and panoramic radiographs or CT scans). The analysis of the size and quality of the alveolar ulcer and occlusion, obtaining the al-diameter of the alveolar mass (thickness, height relative to the bottom of the gamma cavity), measuring the thickness of the mucous membrane was carried out.

Plan for bone growth and sinus lifting as needed.

2. The patient is 54 years old. The lower jaw is defective on the left 5-6-7 teeth. Examples of molars in the lower body and options for preparing dental implants. Answer: Radiographs (dental and panoramic radiographs or CT scans). Analysis of the size and quality of alveolar growth and occlusion, measurement of the size of the alveolar process of the larynx (thickness, height relative to the nerve of the lower limb), measurement of the thickness of the mucous membrane.

If necessary, plan for lateralization of the bone marrow and lower extremities.

Advertising materials:

1. Control questions to check the level of knowledge of the student.
2. Situational issues.
3. Tests of the first degree of complexity.

Secondary tests of difficulty

The theoretical part.

Additional procedures for dental implantation are performed if the osteotomy and soft tissue implantation are sufficient to ensure that the bone or soft tissue is sufficient for implantation. If the texture is not enough, you can eliminate it with additional operational methods. In other cases, the soft tissues of the upper and lower jaw of the upper jaw and additional operations are necessary on the bone marrow. This occurs when there is enough tissue in the implant or not enough tissue to close it. Additional dental implants are divided into two groups: bone interventions and soft tissue interventions. Examples of oral soft tissue interventions include vestibuloplasty and mucosal free displacement. Dental implants use auto-and allografts, artificial bone acid phosphate, hydroxylapatite and other biomaterials in the absence of bone tissue, as well as non-absorbent and permeable membranes. Membranes are used for implantation of bone defects, rupture of implanted walls, poor quality of bone in the implant, removal of sutures and implantation immediately after tooth extraction and peri-implant development.

Plastic surgery with autogenic bone grafts. It is used in cases of bone atrophy during implantation, mainly in the distal parts of the bone, near the lower jaw, alveolar larynx and in the oral cavity. The graft material is used as the ilium, cavity, retromolar region of the lower jaw, or upper jaw area. The main condition for the plasticity of an autogenous graft in combination with implantation at the same time is the soft tissues available for closing the implant and the implant. In addition, a combination of canned allogeneic bone graft and alloying alloy is used for bone plastic. The latter can be used in combination with plastic materials based on hydroxyapatite and collagen.

One example of pre-implantation is a change in the position of the nerve of the lower limb and the pelvic nerve. At the same time, removable membranes, cryogenic bones, etc. can be used. In cases of severe atherosclerosis, plastic surgery of the upper jaw, alveolar process of the larynx,

nasal cavity and gamma cavity are common. As a result of surgical intervention it is possible to raise the nose or upper jaw, to change their position and enlarge the upper jaw. The results of such operations can reach 94.4% -100%. In the upper jaw, autosuplication, demineralized bone, combined bone grafts (osteogenon, osteogenon and collagen, osteogenon and blood, autosuuk and hydroxylapatite) are used.

Since the material is often inadequate, the auto-switch is used in combination with hydroxylapatite, ceramics, and plastic materials.

Reconstruction of the upper jaw requires removal of the following requirements: All surgical procedures should be most appropriate. Implantation of the transplanted material should form a bone that can be absorbed and tightly bound to it. Resorption of fresh bone should not exceed 1.49 mm in the first year after surgery and 0.1 mm in each subsequent year. All surgical interventions should not cause inflammation of the upper jaw.

In the upper jaw, the implants were implanted under the gamma cavity.

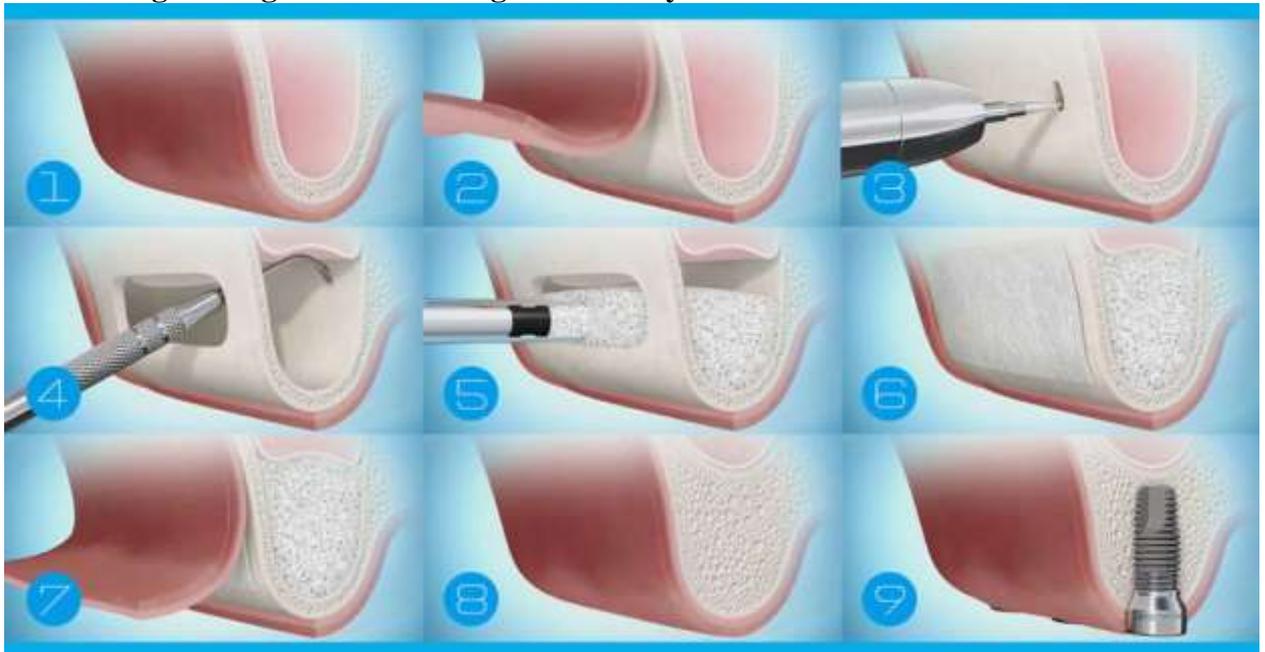
The distance between the implant and the cavity should be at least 1-2 mm, but when the teeth are removed and the bone is surrounded, it is closer to the alveolar jaw of the jaw and is separated only by a thin bone plate. This complicates implantation and requires surgical abortions or sinus biomaterials. Implantation of the distal part of the upper jaw has a number of features. First of all, it is important to take into account the proximity of the inner jaw and its injury to implantation. Secondly, it is important to keep in mind that there is a canonical venous opposition in the upper jaw. Although there is a distance between the arterial and venous clots, this distance is significantly reduced when peripheral bone is implanted. The individual characteristics of these cases should be taken into account during implantation. First of all, the maxillary alveolar zone can flow both in the vestibular and in the middle. Usually, the teeth are not located in the distal part of the lower jaw. In this area, the bones may differ in shape and quality; internal contraction of the canal muscles is of great importance. If the lower jaw is distal and narrow, the implant may be perforated or the tongue wall may be broken. In addition, in this case, there is a risk of damage to the lingual nerve. The location of the lower jaw and vascular nerve during implantation in the area of the molars and the second premolar area of the lower jaw is important. On the periphery of the lower jaw, the lower jaw is displaced to the tongue. Significant bone atrophy leads to the opening of the nerve and perforation of the inner hole, and they remain on the surface of the alveolar arch. When they are injured, they can have complications such as bleeding or nerve damage. In addition, the perforation of the nerve of the lower limb can affect the implantation and function of the prosthesis with orthopedic structures. In other cases, it may require implantation after initial elastomeric plasticity, a change in nerve position, and other operations. Atrophy of the lower jaw is caused by a porous fashion. After tooth extraction, the lingual part of the elbow is first rotated. In this case, the hand-shaped edge is often shaped like a knife blade. Later it is flattened in height. In the area of the symphysis, a flat arm is formed with a sharply elongated coastline.

There are several classifications for the evaluation of a toothless jaw-Kennedy (1928), A. Atwood (1971-1977) and W. Linholm, G. Zarb (1985) - for dental implants, K. Mish and K. Judy (1987). Use of maxillofacial anatomical criteria based on X-ray images. When diagnosing and planning dental implantation, mathematical modeling of RCT and YMR should be performed, taking into account the anthropometric parameters of the jaw bone and clinical radiological data. Osteotomy and implantation are selected on the basis of different classifications and characteristics of bone. For example, sharpening a bone from a compact material is carried out with cooling, but at a constant speed. If plaque is rare, it is usually found on the upper jaw, where bone stiffness is performed without the use of cushioning or high-pressure implantation. Otherwise, it can lead to perforation of the gamma cavity and damage to the alveolar nerve. The same features are described in the classification of C. Misch (1990).

Comprehensive evaluation of diagnostic tests allows you to identify implants, choose the number and implantation of implants, develop a surgical intervention plan and choose temporary or permanent orthopedic treatment. The choice of implants and their number depends on the

condition of the oral cavity and on the function of the dentures. Taking into account the implications of implant design, it is necessary to rely on the results of treatment in various clinical situations, and not on the recommendations of the advertiser.

Sinus-lifting - lifting the base of the gamma cavity.



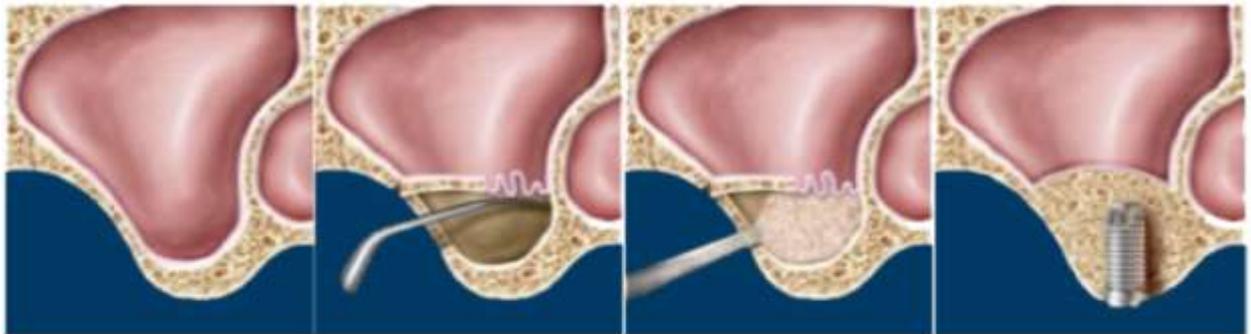
There is a gap in the upper jaw that can be privatized, sclerotized, and combined. The bottom of the Gamer's cavity can have different proportions with the roots of the upper jaw: they are either close to the cavity, or have penetrated it, or have not been reached before.

As a result of A. S. Ivanov's anthropometric measurements, the distance between the bottom of the middle cavity and the root of the tooth averaged 7.4 mm. The first tooth is closest to the cavity. The average thickness of the bone in the root area is 2.05-2.02 mm, and at the root of the palate-2.02 mm.

The upper jaw is implanted under the cavity. The distance between the cavity and the implant should be at least 1-2 mm. However, when the teeth are removed or in the surrounding area of the alveoli, the implant and cavity remain close together, leaving only a thin plate. This complicates dental implantation. In this case, the bottom of the cavity is raised by biomaterials. Autosus, demineralized bone, combined bone grafts (osteogenon, osteogenon and collagen, osteogenon and blood, autosus and hydroxylapatite) are used to raise the bottom of the blood cavity or expand the upper jaw. They are used in combination due to lack of material. The bone has high functionality, including the ability to adapt to various injuries and loads. They require bone regeneration and remodeling, but in the absence of overload, the bone remains physiologically present. The assessment of the upper and lower jaws of the upper jaw is



Internal Approach Sinus Lift (Subantral Graft)



External Approach Sinus Lift (Subantral Graft)

supplemented by the size of the mucous membrane.

Flat implants are often single or combined. The implant consists of an intra-abdominal segment of the body, neck, and upper parts of the head or heads (stamp). The body has a different structure and is rectangular in cross-section. The height varies from 8 mm to 15 mm and the length from 15 mm to 30 mm. The body consists of several cuts, and the lower one is wavy.

Advantages of plate implants (plate):

- 1) The implant can be inserted into a thin hand ball;
- 2) the implant does not penetrate deep into the bone, so it is unlikely that the gamma cavity, nasal cavity and lower extremities are damaged;
- 3) minor bleeding avoids perforation and damage to the alveolar process;
- 4) wide effect of the implant surface with bone ensures good fixation;
- 5) Most of the pores in the body are comfortable to penetrate the bones and provide stability;
- 6) Implants are easily tied and take the necessary shape.

In addition, flat implants can be used in combination with natural teeth as a support for dentures. The prosthesis can be performed within 3-4 weeks after surgery.

However, many researchers believe that flat implants stabilize bone fibrosis by integrating them. According to T / Albrechtson, fibrointegration is a phase of the host's response to the implant and does not preclude its separation in the future. Nevertheless, L. Linkov, P. Schnitmann, S. Weiss, and S. Misch achieved the integration of flat implants into bone and fibrosis and observed their strength in 90-96% of cases for 5-10 years. Orthopedic implants are most effective when the width of the alveolar ridge is between 3 mm and 5 mm. The distance to the upper border of the lower jaw can be at least 1 mm.

Implantation of implants is performed after patient preparation, premedication and local anesthesia of the peripheral branches of the tertiary nerve.

Sterility should be maintained during implantation (surgical methods, sterilization of instruments, materials, gloves).

The incision is made along the alveolar surface, where the mucosa and bone marrow are dissected and separated. Once the bone is exposed, its position, color, and cortical layer are checked. Irregularities on the surface of the bone should be leveled during the scan. Smoothing is performed by milling or using an existing machine with simultaneous cooling. If you need to install several implants, the distance between them should be at least 3 mm, and the distance to the base of the denture-at least 2 mm. According to the implant body, the hole in the cortical

substance merges with the fissure, forming a furrow. The accuracy of the exhaust is controlled by an analog implant or measuring device, as well as computer-assisted osteotomy imaging to measure each block and bone tissue, as well as internal organ imaging.

Bone flaps are removed from the canal using a special device. The cavity is washed with saline. Bone slices and bone marrow are injected into a saline solution or sterile cloth. Once the implant is formed, the implant is inserted into the cavity and the "implantation" is broken up until the implant is complete. If the implant is difficult to insert, the implant will be removed and the cavity enlarged, and the bone marrow will be removed. Then the implant is returned to its place. At the same time, the correct axis is assigned to the base of the axis corresponding to the occlusion. The shoulders and base of the implant should be 2-3 mm deeper than the bone marrow. If the implant is measured in the bone position, it should be administered with an isotonic solution after each measurement. When implanting with a hydroxylapatite coating, all preliminary measurements are carried out by analogy. Such implants cannot be inserted into the bone by softening and sinking them. If necessary, attach bone slices, bone slices, hydroxylapatite crystals around the base of the implant and the mucous membrane that corresponds to the base of the implant is hermetically sealed. After 3 weeks and 1 month, prosthetics begins. If the flat implant is collectible, it is inserted in the first surgical phase and soft tissue is stitched, and in the second phase it opens after 6 months in the upper jaw and after 3-4 months in the lower jaw. When the implant is removed, the screw is replaced with the base head and the corresponding mucosa is inserted. 3 weeks after the opening, orthopedic treatment is performed.

In all countries, toothpaste is widely used. Both screw and cylindrical implants are used.

Dental implants differ between the submerged and unobtrusive types, as well as single-stage or two-stage ones.

Single-stage implants are positioned so that the upper part of the arm is in the mouth. Submersible implants are often used with screws and cylinders. The most common implants used for two-stage surgical treatment include the Branemark system, Core Vent, Zi, Steri-Oss, Astra, Galsitek, IMZ and others, as well as contrast and plasma surgery. Single-stage implants are inserted into the bone so that the upper part of their arm reaches the mouth. The most common are ITI, Ledermann and Komet.

At the first stage, the implant is inserted into the bone, which is sutured to the mucous membrane and the surface of the bone marrow. In the second stage, the suture will open and the implant will be exposed to various structures.

Screw implants have the following advantages:

- 1) the osteotomy technique is simple and relatively surgically atraumatic during implantation;
- 2) implant length and thickness options allow you to choose the thickness, width and quality of the bone;
- 3) create a good place for implantation and ensure good bone healing;
- 4) Different shapes of the implant surface make it difficult for bones to adhere;
- 5) The structure consists of many elements that provide good epithelial soft tissue.

Two-step operations are often used with screwdrivers and cylindrical structures. In the second stage, the implants are opened and various hand-held components are placed on them.

Patient preparation, premedication and anesthesia are performed according to the same general principles as flat implants.

Bone formation depends on the shape and structure of the implant. Bone formation is of great importance for round bone implants. The variety of design and shape of implants requires original tools to connect them.

There are 4 main groups of tools for cortical and porous bone processes. With the help of sharpening, the bones are formed in accordance with the length and diameter of the implants.

Drilling depth is controlled. The implant can be replaced manually or manually. Bone sharpening and implantation are performed in a special accessory mode with external and internal cooling systems. In the quieting phase, the cylindrical impedance can be deepened with a hammer. The depth of implant placement depends on its structure and its relation to soft tissues. In unilateral

implantable single-stage operations, the wound is sewn around the shoulder. The main focus of transmucosa is the location of the expansion base or controls the country. Steps will be taken to prevent the fabric from rotating inside and creating pockets.

Two-stage implants open after 4 months in the lower jaw and after 6 months in the upper jaw. This can be done by making a short cut on each field or by making a long cut on all of them. After opening, the excess bone tissue is removed and the surrounding area of the implant is thoroughly cleaned. Then remove the latter and clean the inside of the implant. The soft tissues around the implant are treated, and the thick mucosa is thinned if necessary. The mucous membrane and bone marrow are sutured, which prevents them from twisting. To regenerate the mucous membrane, a regenerative screw is inserted for 1.5-3 weeks. During recovery, the problem of temporary prostheses will be solved by a separate orthopedic surgeon.

Recommended literature

- basic

1. . Робустова Т.Г. Руководство По Хирургической Стоматологии Челустно-Лицей Хирургии. volume 2, 2000
2. Робустова Т.Г. Имплантация хирургических аспектов имплантации - М., 2003.
3. В.Л. Параскевич Зубная имплантология: теория практики и практики: Scientific and practical manual /.-М., 2002.-386 p

Additional

1. Безрукова В.М Рук.-во по ксир.-ай стом.-ии чел.-лиц. хirurgii. W 2 tomax. (ed.) - 2000
2. ТМ Лур'е. «Здравоохранение и стоматология» . М. Medgiz, 1963, p. 288.
3. «Стоматология сегодня»: Archive no. 3, p. 1-6.
4. Dental firm-Olga-Volgogradskaya, pp. 1-2.

web site:

www.eastman.ucl.ac.uk

www.budovsky.ru

www.tc.by/rus/medica

Task:

1. Use the Internet to get news on the topic of the lesson and write practical notes-notebooks in independent workbooks.
- 2.Preparation of slides and multimedia on the topic.
3. We go to the library, make a dictionary and write a summary using foreign literature.

PRACTICAL TRAINING TOPIC 6

ADDITIONAL OPERATIONS FOR DENTAL IMPLANTATION IN THE LOWER JAW (LATERALIZATION OF THE INFERIOR ALVEOLAR NERVE AND AUGMENTATION).

The technological model of experiential learning.

Stages and duration of work	Activity	Students
	Teacher	
Stage 1 Introduction to the training session 10-minutes 10-minutes 15-minutes 5-minutes	1.1. Explain the title of the topic, goals and expected results. Explain the main definitions on the topic. Familiarize yourself with the lesson plan. 1.2. Give a list of references (Appendix No. 1) 1.3. Ask questions to engage students in brainstorming. Description of the procedure for organizing the educational process based on the plan and structure of the lesson. 1.4. Announce the criteria for evaluating the activity of students in the classroom. (appendix No. 2)	Listen and record Listen and record Answer the questions Listening
Stage 2 The main part 25-minutes 15-minutes 15-minutes 5-minutes 10-minutes 50-minutes 40-minutes 20-minutes Stage 3 Final 40-minutes 10-minutes 10-minutes	2.1. Conducting an express survey on the main definitions of the topic in order to activate students' knowledge.(appendix No. 2). A conclusion is given for each section of the topic and attention is drawn to the most basic ones, it is required to register these information in a notebook. 2.2. Organization of discussion of materials of the game "Black Horse", pay attention to the expression of problems of analysis of situations of the rules of work (Appendix No. 3) 2.3. Independent analysis of the conceptual table of organizers and the "Fish skeleton", give the task of expressing the problem and determining ways to solve it, then solve it. 2.4. Presentation of the concept table of the "Fish Skeleton" organizer. 2.5. Everyone solves tests and situational tasks by himself (Appendix No. 3.2) 2.6. Implementation of practical skills and supervision of patients in the department (clinical lesson). Change 2.7. Demonstration and explanation of visual aids (slides, presentations, videos) 3.1. Conclusion. A conclusion is made on the topic. 3.2. Active students are evaluated. The assessment criteria for the group are announced (Appendix 5) 3.3. Questions and tasks for independent training are asked(Appendix No. 7)	Answer questions and discuss them They ask explanatory questions They discuss the materials of the game Ask questions They fill out the analysis sheet themselves and solve the problem. Listening Solve tests. They supervise patients Listening They ask questions Listening Listen and evaluate yourself They record tasks.
Total		6 hours

Interdisciplinary and interdisciplinary relations.

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Aquarium style

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- * The topic is discussed in the middle
- * reveals the topic
- * Explains students ' knowledge
- enhances the skills of discussion
- Method of play
- Every student participates

Security questions.

1. Operating instructions before implantation for alveolar growth.
2. Classification of the alveolar process of the upper and lower jaw.
3. Methods of removing exosomes of the upper and lower jaw.
4. Plastic surgery of the alveolar tumor of the upper jaw
5. Plastic surgery of the alveolar tumor of the posterior jaw
6. Application of osteoplastic materials in the alveolar growth of plastic.
7. Indications for plastic surgery of an alveolar tumor

Subject of the proposed independent work.

Scheme of ankylosis operations.

1 The following rules must be observed during bone plate surgery

- A) sufficiency of soft texture
- B) facilitating removal of the bone
- C) preservation of facial hormone
- D) all of the right answers *

2 The following recommendations should be followed in oral oral texture:

- A) Good oral hygiene
- B) The artery and vein are dissected
- B) The mucous membrane is separated by the bone marrow

- D) The location of the facial muscles is taken into account
 D) all of the right answers *
- 3 Osteoplasty Oral cavity technique is part of the prosthetics procedure
 A) taking ectstasy *
 B) sanitation of the oral cavity
 C) removal of subcutaneous and gums
 D) teach the patient the rules of hygiene
 D) Frenulotomy
- 4 Oral plastic soft tissue prosthesis is a pre-prosthetics method
 A) Removal of exostoses
 B) rehabilitation of the oral cavity
 C) removal of subcutaneous and gums
 D) teach the patient the rules of hygiene
 D) frenulotomy *
- 1 Osteoplasty technique The oral cavity is part of the prosthetics procedure
 A) Lift your upper jaw
 B) Subcutaneous nerve intervention
 C) lengthening of the lower jaw
 D) Frenulotomy
 D) language extension

- 1) ABV * 2) VGD 3) AGD 4) BVG
- 2 The oral cavity is a method of soft tissue prosthetics
 A) grow the upper jaw
 B) Subcutaneous nerve intervention
 C) lengthening of the lower jaw
 D) Frenulotomy
 D) language extension

- 1) GD * 2) AB 3) AV 4) VG

Situational issues:

1) The patient is 48 years old. Upper left jaw 123 teeth after injury to the secondary adrenal mucosa

What are the research tactics and methods for dental implantology?

A radiographs, thickness of the upper jaw of the alveolar part o'lchash. Tortilgan mucosal layer, and if necessary remove loose o'sikni and bone implants for the bone tissue inside the o'sirish

2) The patient is 46 years old. Full adrenal gland. Degree of adhesion of alpha-polar growth III. Surgical methods of preoperative preparation of small dentures

Answer-vestibuloplasty, alveoloplasty, sinus lifting if necessary

Advertising materials:

1. Control questions to check the level of knowledge of the student.
2. Tests of the first degree of complexity
3. Secondary tests of difficulty.

Situational issues

The theoretical part.

The need for prosthetic surgery is due to several factors, including atrophy of the alveolar process of the upper jaw and the alveolar part of the lower jaw with the loss of natural teeth. In some patients, the processes of bone atrophy may be associated with concomitant diseases and changes in organs - systemic diseases, bone osteoporosis (including menopausal and post-

climatic periods). Bone atrophy is also affected by local factors. First of all, this is an injury when removing a tooth and removing one of the walls of the alveoli. Bone loss can also be caused by poorly designed prostheses. In addition to the general and local factors that cause bone atrophy during prosthetics, anatomical features of the jaw structure can present difficulties.

They can be caused by atrophic processes, as well as the type and development of the facial skeleton. During prosthetics, bone tissue can also have a number of disadvantages. After tooth extraction, the alveolar mucosa may become excessive. In addition, when teeth are removed, the bone often becomes uneven due to the displacement of the vestibular walls of the alveoli. Poor prosthetic conditions also often cause atrophic processes in the vertical and anterior and posterior bones of the bone, dislocation of the jaws, an increase in the distance between the alveolar arches and a decrease in their width. The prosthesis is further complicated by periodontitis, periodontal disease, which exacerbates atrophic processes in the jaws. Even teeth that remain in the bone and do not grow cause certain problems. The upper jaw is clearly visible at the junction of the two plates forming the hard palate. Removal of the central teeth can lead to a rupture of the occlusal connection between the upper jaw and the alveolar process of the lower jaw. In the absence of maxillary molars, an incorrect ratio between teeth and antagonists in occlusion can lead to a decrease, increase or correction of the alveolar process. In the lower jaw, the alveolar region narrows, its atrophy and, consequently, the lower jaw, the curved line, the lower jaw and sharp edges prevent prosthetics.

In addition to the processes of bone atrophy, p. Popkins (1985) believes that microstomies caused by chronic dental disorders also interfere with prosthetics. Smooth texture-changes in the mucous membrane and bone surface also complicate prosthetics. After tooth extraction, the formation of scars on the mucous membranes of the alveolar region is possible. In some cases, these changes also occur in the subcortical region. Chronic injuries, including those caused by poorly designed prostheses, play an important role in hyperplastic changes. The latter can often be the cause of papillomatosis, which can damage the hard palate, oral cavity and alveolar scallop. Such changes in the mucous membrane can be aggravated by inflammatory processes in the damaged tissue. Bone atrophy can lead to the destruction of the oral cavity, and the labial and lingual joints, mucous and muscle joints become obvious and approach the alveolar arch. The muscles of the jaw, subcutaneous tongue, and lungs can add to the difficulty of the denture. Preoperative procedures in the oral cavity are aimed at removing the following areas: 1) bone tissue of the jaw; 2) soft tissues - mucous membrane, surface layer, muscle fibers; 3) Peripheral branches of the tricorner nerve. Orthopedic prostheses should be used for the surgical treatment of patients with pathological changes that cannot be fully developed. In addition to evaluating prosthetic conditions, there are also psychological factors: the adequacy of the patient's complaints, his / her understanding of the need for surgery, and the functional and aesthetic outcome that he or she expects from orthopedic and surgical treatment. Patient motivation is also very important when it comes to temporary and permanent dental correction. Before deciding on a preliminary surgical intervention, the surgeon should examine the patient's medical history in accordance with the rules of surgical dentistry and determine the likelihood of changes in soft tissues and bone tissue in general pathology.

Changes in the soft tissues that cover the alveolar processes of the upper jaw and the alveolar parts of the lower jaw should be evaluated from the point of view of oncology, as well as infectious, viral or other etiology. When examining the oral cavity, upper and lower lips, the position of the tongue, scars, the mucous membrane of the bottom of the mouth changes, as well as the state of muscle connections. In particular, attention is paid to inflammatory processes at the bottom of the oral cavity, which can be caused by damage to the edges of the prosthesis. In these cases, there may be a diagnosis of fibroma with a significant misdiagnosis, but there may be mucosal hypertrophy and scarring. Atrophy of the jaw often leads to the formation of excess mucous membranes in the alveolar artery, which prevents prosthetics. In addition to assessing the condition of soft tissues, the alveolar process of the jaw and the bones of the alveolar process of the lower jaw are used. Measure the width and height of the bone, evaluate its shape,

irregularities, the presence of irregularities, sharp edges, exostoses. In both jaws, mimicry, chewing, and other areas where muscles begin or attach are palpated. The upper jaw and the wing of the nose and the muscles of the upper jaw; in the lower jaw - the heartbeat of the jaw, lungs, chest and subcutaneous muscles. The alveolar arch and alveolar mucosa in the alveolar region of the lower jaw are palpated to determine pain.

Operations on the soft tissues of the jaw. (alveolectomy and alveoplasty). Alveolar plastic. If after removal of the tooth detected deformation alveolarnae of the tumor is the alveolar plastic. At the same time, the muco-bone clot is removed only to identify the affected area of the bone. Deformation on the outer and inner surfaces of the alveolar arch is eliminated by bone clamps, bone saws, rods or cutters. When working with a boron machine, the workplace must be cooled by irrigation with an isotonic solution of sodium chloride. After the sharp edges are removed and smoothed, the mucous membrane is inserted into place. Care should be taken to ensure that the edges of the wound are aligned and the edges are removed, and the texture is removed if necessary.

Internal obstruction of alveoplasty. After removal of one or more teeth, resection of the interalveolar obstruction may be required. Removal of outgoing or inadequate alveolar obstruction and change of position of the lateral plate of the upper jaw or the alveolar part of the lower jaw. These actions ensure the integrity of the surface of the bone mucosa, which allows you to remove pores on the vestibular surface of the bone without changing the height of the bone. In addition, bone atrophy is less pronounced in this type of alveoplasty [Tucker M., 1994].

Reduction and correction of the uneven surface of the alveolar process of the upper jaw and the alveolar process of the upper jaw This is done on the surface of the bones, which prevents adequate prostheses. This may be due to bone marrow and hypertrophy of the tissues that cover them. With intravenous alveoplasty, the mucosal bone is removed to create a normal alveolar arch, and a bilateral alveolar esophagus or jaw is opened. Spikes, dislocations, and other deformities are eliminated with bone clamps, holes, and cutters. Excess soft tissue is cut off, and knotted stitches are inserted into the wound. The work of the upper jaw must be taken into account to prevent damage to the upper jaw. It is important to pay attention to the location of the pelvic opening in the lower jaw and nerve vessels.

Resection of the alveolar process of the upper jaw and the alveolar process of the lower jaw. For teeth, including antagonist dentists, there is a lot of bone texture and deformation when there is no room in the prosthesis. Depending on the function of the prostheses, the models determine the required volume of bone resection. An X-ray is the location of the nasal cavity and upper jaw. To prevent their damage during surgery, the alveolar arch is cut linearly and the muco-bone clot is isolated. Occasionally, one or more vertical incisions are made and the trapezoidal clots are arranged at an angle. The excess alveolar part is removed using bone clamps, frames, rods and mills, which allow you to smooth the surface of the bone. The area had to work in accordance with the planes of occlusion of the alveolar arches. Excess texture should be removed so that the edges of the wound fit without stretching. It is best to use a continuous line of synthetic yarn. Alveolectomy is performed in the presence of a disproportion of the anterior part of the upper jaw due to adenia. Methods of bone correction proposed by O. Dean (1941), K. Kallenberger (1953) and Z. Obwegeser (1968), are basic, and some authors have developed modifications of them.

Preparation for urgent prosthetics. Most teeth are removed after the alveolar process of the upper jaw and the alveolar part of the lower jaw are removed for surgery. After tooth extraction, acute interalveolar and intermolecular barriers remain, which are manifested in periodontitis and periodontitis. After anesthesia, the mucous bone is removed, the teeth are removed, and the necessary surgical procedures are performed on the bone. The barriers are removed with clips, and a simple alveolar plastic is made from inside the barrier. Mumps and irregularities are present or smoothed out by milling. With scissors, the tooth blades are removed

and the edges of the mucosa are smoothed, with a soft enough tissue to cover the bone, without excess mucosa, and the edges of the wound should be well closed. The wound is tight.

Removal of exostoses of the upper and lower jaw. exostoses are used extensively and in obvious ways. It is cut vertically along the alveolar arch, and sometimes additionally. By rotating the angular or trapezoidal clot, each branch of the deformed bone opens. Exostoses are removed with clamps, rods and mills. Soft textures are knotted or seamless. When the alveolar upper jaw is removed from the palate and the lower jaw is removed from the tongue, the bone opens with a linear incision along the alveolar arc. There are exostoses that are removed by milling. For better bone formation in the lower jaw, soft tissue is removed with an inclined hook, taking into account the presence of lingual nerves, arteries and pelvic floor. In small exocysts and small alveolar processes, one or more incisions are made on the corresponding surface of the mucosa, forming a pavement under the surface of the bone edge to smooth and even out the thickness of the alveolar tumor. necessary hydroxyapatite, or other biological material. The mucous wound is sutured. It is advisable to attach an alveolar tumor plate or ligament.

Removing ectstasy in the field branches of the tangle. When designing and using commonly retractable dentures, exostoses of the palate can cause problems. In various shapes and sizes, and sometimes to a large extent, they deform the floor of the sky. exostoses create faint incisions along the midline of the palate and are removed at an angle of 30-40° at both the anterior and distant points. The muco-bone clot is removed, removed at the edges of the ligature, and the base of the bone cavity is open. Hops and hammers are removed with a rod or mill. Sections are often divided into different parts using clamps and scaffolding. This should be done very carefully, so as not to pierce the nasal cavity. The surface of the bone is smoothed, with a finger pressing soft tissues to the surface of the bone and placed on the surface of the mucous bone. The remaining tissue is cut off, and knotted stitches are inserted into the wound. To prevent hematoma, gauze or iodine mixture, gauze or oblique oil is applied to the palate area. This should be secured with a silk ribbon. The protective plate should be well fixed, but the texture should not be excessive to avoid necrosis. Postoperative closures are performed to prevent inflammatory processes and hygienic procedures.

Restoration of the lower jaw. Autotransplantation can be done from the crest of the scalp or the ilium. One of the two sections of the machine is placed on the bone up to 15 cm long, giving it the shape of a dental arch, the other is crushed, and its particles are covered on the surface. The graft is attached to the residual bone of the lower jaw, where the alveolar portion is filled in, and the graft is attached to the suture lines surrounding the suture line. This is a tricky method. Bone restoration will take a long time until functional prosthetics are performed. Significant atrophy of the lower jaw causes the risk of fracture and determines the need for plasticity of the bone at its base. The graft, formed from the ridge-like edge of the bone, is attached to the bone using a wire or mini-plate and dies. However, this method helps to prevent fractures of the lower jaw, but does not improve the conditions of prosthetics. Various methods of mandibular plastic surgery are described. In one of them, the lower jaw is located in such a way that its medial part remains with the surrounding subcutaneous tissue, and the vestibular part is lowered down. The remaining cavity of the mucosa is filled with hydroxyapatite, during autogenesis, the edge of the iliac bone is combed. It is possible to enlarge the lower jaw by horizontally cutting the bones upwards and filling the middle space with crushed autosuas, allosuas and hydroxyapatites. The simplest method to repair bone with the help of hydroxyapatite. Symmetrical sections of the mucous membrane are made in the peripheral part of the alveolar part of the lower jaw, corresponding to the bottom pile.

The cornea is formed from the cornea below the retina and is filled with hydroxyapatite in the correct amount, width and shape of the alveolar part and arch. Wounds are sutured with knotted sutures. It is recommended to wear a splint 8-10 days after surgery to maintain the shape of the alveolar part and form the cornea of the oral cavity.

The operation of the upper jaw with hydroxyapatite simple and effective. The method of performing this is similar to the operation on the lower jaw. Only one section is made along the

midline of the alveolar arch. The subcutaneous cornea is made on the anterior surface of the upper jaw. After a sufficient amount of material is inserted and the alveolar tumor of sufficient height and width is closed, the splint is worn out for 7-8 days and attached to the palate with screws. To do this, use an old prosthesis and adapt it to the new shape of the alveolar tumor. With the help of hydroxylapatate, the growth of the alveolar process of the upper jaw can be carried out simultaneously with the increase in the maxillary cavity. Restoration of the upper jaw is not required, unlike the lower jaw. However, with a large bone atrophy and an inadequate shape of the base of the palate, the alveolar process increases. You can use a parotransplant of scab. This procedure is similar to the operation on the lower jaw: the alveolar process is cut off with Le For III (osteotomy), and the descending location of this area with autogenous bone is performed under the surface of the mucous membrane of the mucous membrane. Filled (ridge-like edge or rib of the ilium).

The graft is attached to the body of the jaw and cheekbone with metal wires, screws and mini plates with screws. However, there are cases of postoperative bone resorption after these operations and the need for repeated surgery. In this case, the patient will not be able to use the prosthesis for a long time. On the periphery of the upper jaw, especially in the distal area, there is a plaque of the upper jaw when there is not enough space for a denture. At the distal end of the alveolar cavity to the upper border of the wing-palate, the mucous bone is removed, the upper jaw opens, the excess part of the lateral wing plate is assigned an osteotome, and its back is attached to the wing. The tip of the lump is lowered into the resulting notch. The surface of the wound is wrapped with a solution of iodoform. Yara ends with secondary shots. As a result, this will create the conditions for a good denture.

Operations in the portable segment. In the absence of a row of teeth, there is no room for antagonist teeth. In this case, sigmoid osteotomy is recommended in the right direction. The operational plan is based on clinical and radiological data, as well as models. The models indicate the anatomical and mathematical parameters of the operation. Defines the orthopedic treatment plan for the model and the occultist. After opening the mucous membrane and bone marrow, an osteotomy is removed from the site, the teeth and jaw segment are osteotomized, the necessary position is fixed, and the bones are fixed with screws. The gap between the jaw segment and the jaw is filled with hydroxylapatite or other biomaterial. The muco-bone clot is inserted into place and fixed with suture nodes. Correction of bone deformities of the dental jaws is performed according to the rules of osteotomy. Its method depends on the deformation properties and adequate planning of prosthetics

Recommended literature

- basic

1. . Робустова Т.Г. Руководство По Хирургической Стоматологии Челустно-Лицей Хирургии. volume 2, 2000
2. Робустова Т.Г. Имплантация хирургических аспектов имплантации - М., 2003.
3. В.Л. Параскевич Зубная имплантология: теория практики и практики: Scientific and practical manual /.-М., 2002.-386 p

Additional

1. Безрукова В.М Рук.-во по ксир.-ай стом.-ии чел.-лиц. хirurgii. W 2 tomax. (ed.) - 2000
2. ТМ Lur'e. «Здравоохранение и стоматология» . М. Medgiz, 1963, p. 288.
3. «Стоматология сегодня»: Archive no. 3, p. 1-6.
4. Dental firm-Olga-Volgogradskaya, pp. 1-2.

web site:

www.eastman.ucl.ac.uk

www.budovsky.ru

www.tc.by/rus/medica

Task:

1. Use the Internet to get news on the topic of the lesson and write practical notes-notebooks in independent workbooks.
2. Preparation of slides and multimedia on the topic.
3. We go to the library, make a dictionary and write a summary using foreign literature.

COMPOSITION OF THE CURRICULUM FOR THE SUBJECT:

This program is based on the State Educational Standard of the Republic of Uzbekistan and the training program for general practitioners. The use of this program for the introduction of modern pedagogical technologies in the educational process allows you to independently accept and diagnose patients' diseases by combining the acquired skills with theoretical knowledge in clinical practice using modern medical technologies and provides a basis for adoption. In accordance with the goals and objectives of the program, a clinical dentist will be formed, which will become a mature, competitive, independent clinical dentist, combining the knowledge and practical skills acquired during the processes of horizontal and vertical integration.

Dental implantology is connected with medical sciences, with the aim of studying the history of dental implantology, equipment and raw materials used for dental implantation, for preparing patients for surgery, modern examination methods and creates prerequisites for studying the features of dental implantation on the upper and lower jaw.

This course is based on knowledge gained in the fields of biophysics, medical chemistry, anatomy, physiology, histology, microbiology, therapy, clinical allergology, pharmacology and surgery.

II. Aims and objectives of the subject

The purpose of dental implantology training is to prepare students and practicing dentists who can provide outpatient surgical dental care, restoring dental defects-adenia, with the development of various measures to prevent complications of implantation.

Tasks of the subject:

- * Provide an understanding of the topic of dental implantology;
 - * Teaching students step-by-step knowledge from theoretical to basic practical skills;
 - * Increase the level of clinical thinking and consolidation of knowledge through the introduction of modern pedagogical technologies in the educational process;
 - * Have a good understanding of modern research methods;
 - * Study of the history of dental implantology;
 - * Teach the classification of dental implants, indications and contraindications for dental implantation;
 - * Identification of dental implantation complications and training in their elimination;
- Promotion of a healthy lifestyle.

The requirements for students' knowledge and skills in this subject are as follows.

Student:

- preparation of patients for dental implantation, modern methods of examination and planning of dental implantation;
- features of dental implantation on the upper and lower jaw;
- peculiarities of dental implantation in case of atrophy of the upper and lower jaws, and additional operations;
- patient care after dental implantation;

- complications that may occur during dental implantation;
- have an idea of possible complications after dental implantation;
- materials used for dental implants;
- classification of atrophy of the upper and lower jaw;
- modern methods of examination in dental implantology;
- classification of dental implants;
- features of dental implantation on the upper jaw in full and partial adentia;
- features of dental implantation on the lower jaw in full and partial adentia;
- know and implement a healthy lifestyle;
- palpation of the alveolar processes of the upper jaw;
- palpation of the alveolar processes of the lower jaw;
- determine the width of the mucous membrane before dental implantation on the phantom and in the volunteer;
- have practical skills (including clinical practical skills) for palpatory determination of exostoses of alveolar processes on the phantom and the volunteer.

I. The main theoretical part (Lecture)

№ Theme	1. Introduction to dental implantation, history of implantation. Classification of implants, materials used in the manufacture of implants. Indications and contraindications for dental implantation. Features of dental implantation on the upper and lower jaw. Classification of atrophy of the alveolar processes of the upper jaw, dental implantation and indications and contraindications for bone grafting of the alveolar processes.	Total 2 h
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Topic 1

Introduction to dental implantation, history of implantation. Classification of implants, materials used in the manufacture of implants. Indications and contraindications for dental implantation. Features of dental implantation on the upper and lower jaw. Classification of atrophy of the alveolar processes of the upper jaw, dental implantation and indications and contraindications for bone grafting of the alveolar processes.

References A-1,2,3 H-1,2,3,4,5,6,7,8

The following topics are recommended for practical training:

The subject is taught in the form of 50% theoretical (lectures and practical classes) and 50% practical (educational clinical practice). The theoretical and practical part of the practical training is conducted jointly with each other.

	Theme	theor	prac	
1	Classification of implants, materials used in the preparation of implants.	2	2	4
2	Classification and pathogenesis of atrophy of the alveolar processes of the upper and lower jaws.	2	4	6
3	Dental implantation on the upper jaw. Coronavirus is a global problem in the world. Reforms adopted in Uzbekistan against coronavirus infection.	3	3	6
4	Dental implantation on the lower jaw. Determination of coronavirus infection in patients and symptoms of the disease.	3	3	6
5	Additional operations for dental implantation in the upper jaw (sinus lifting and augmentation).	3	3	6
6	Additional operations for dental implantation in the lower jaw (lateralization of the inferior alveolar nerve and augmentation).	3	3	6
	Total	16	18	36

In practical training, students enrich their knowledge and skills acquired on the main topics of lectures through practical issues, cases. It is also recommended to achieve the strengthening of student knowledge on the basis of textbooks and manuals, to increase student knowledge through the use of disseminated materials, presentations on topics, etc. Practical training is conducted by a teacher in an academic group in an auditorium equipped with multimedia devices.

During the practical training, it is mastered by in-depth study of specific topics from a theoretical point of view, in-depth analysis of topics that are methodically relevant, discussion of questions and answers, conversations, docks and refunds in order to scientifically develop on individual problems, obtaining written control works, discussion of situational issues and answers to test questions. At the same time, it is necessary to strengthen theoretical knowledge through interactive methods and the use of computer, innovative technologies during the training.

When conducting practical classes, the following didactic principles are followed:

- Clearly define the purpose of practical training;
- To arouse interest in students in opportunities to deepen knowledge on innovative pedagogical activity of the teacher;
- To provide the student with the opportunity to independently obtain the result;
- Theoretical and methodological training of the student.

During the transition period of clinical training practice in the field of Dental implantology, students are expected to master practical skills.

List of practical skills:

- 1..Palpation of alveolar tumors of the upper jaw;
- 2.Palpation of alveolar tumors of the lower jaw;
- 3.Phantom and determination of the width of the mucous membrane before dental implantation in patients;
- 4.Installation of screw dental Implants;

5. Mastering methods of eliminating alveolar overgrowth exostoses.

Guidelines and recommendations for the organization of clinical training practice

The clinical practice of students in Dental implantology is 50% of the educational process and is conducted in a polyclinic.

In practical training, the process of teaching practical skills is planned in detail and includes several stages:

1. The first stage is the study of the applied skill, which is studied based on the purpose and objectives of the training, the motivational basis is determined, its theoretical aspects are discussed. Students with the necessary equipment inventory processing mechanism, rules of operation for the implementation of practical skills are introduced.

To carry out the first stage, the equipment must be available and in working condition.

2. The second stage is to demonstrate practical skills and practice many times. To implement this step-by-step algorithm of practical skills will be demonstrated by the educator and videographers, special attention will be paid to the step-by-step implementation on the basis of the algorithm. The student's practical skills are independent, but under the supervision of a teacher in the field of mollages, simulators, Phantoms and mannequins, students learn to practice among themselves many times in a row. At the beginning, it is allowed to apply (imitation training) to the patient after completing all the stages individually, then generalized, completely and correctly.

To carry out the second stage, the practical skills developed by kafedra step-by-step algorithm and videography, instructional manual, execution scheme or technique, and so on. the G., evaluation criteria should be developed. It is necessary to have a set of molluscs, simulators, Phantoms and mannequins, imitators, instrument sets and create the necessary conditions (modeled close to the maximum working conditions). At this stage, the educator controls and, if necessary, corrects errors in the work of students. The student's actions in this process can be discussed critically, be demonstrated to himself in videotape. The student gives an understanding of what his mistake is, the teacher and other students, and then repeats the treatment. Interfaithality is manifested in such a way that other students in bunda come out as experts and participate in the assessment of the correct mastering of the practical skill of the student being taught. It is desirable that the practical skill is delivered to the level of automatism.

3. The third stage is the application of the learned knowledge and practical skills in the patient. At this stage, the student is taught to apply the acquired knowledge and practical skills in various clinical situations (including emergency situations), analyze the results obtained and determine the tactics of action based on these data under the supervision of a pedagogue.

To carry out the third stage, the curriculum developed by the curriculum, methodological manuals, photographs, a set of situational tables and tests, keys, clinical protokollar, diagnostic and treatment standards, educational disease histories and outpatient cards, etc. the G. should be used. Interfaithality is manifested in such a way that students come out as experts and evaluate the correct mastering of the practical skills of the student being taught and participate in working in the hamdajamoa.

4. The fourth stage is the conclusion. At this stage, the educator must make sure that the knowledge and skills acquired by the student are correct and complete in patients, in different situations, in the process of activity, and then the practical skills are considered to be mastered.

For the implementation of the fourth stage, the student's independent work with the patient is supervised by a pedagogue, evaluated when writing and protecting medical documents, the history of the disease.

At the end of the training, the teacher confirms that each student has mastered practical skills. In situations where the student is not able to master practical skills, it is recommended to independently master at extra-curricular time and re-pass to the teacher. The student is considered to have mastered science, having mastered all practical skills.

Independent work

	Theme	s
1	History of Dental implantology. Materials used in Dental implantology dental implantations and contraindications to Dental implantations. Types of intra-bone implants classification of atrophy of the upper and lower jaw alveolar ossification	5
2	Methods for eliminating atrophy of the alveolar hangings of the upper and lower jaw. Requirements for Dental Implants. Advantage of the traditional method of treatment of Dental Implants	5
3	Modern methods of examination of patients before Dental implantation. Modern methods of examination in Dental implantation. Contraindications and againts contraindications to the operation Sinuslifting	5
4	Contraindications and againts contraindications to the operation alveolar Ossic augmentation. Types of bone intertwining with Dental implants	5
5	Planning the appointment of dental Implants in patients with concomitant diseases	5
6	Complications during Dental implantation. Early and late complications from dental implantation song. Methods for eliminating complications in Dental implantation.	5
	All	30

Independent work on science is conducted outside the audience and the audience. In the organization of the independent work of the student, the following forms are used:

- In addition to the auditorium classes, the practical skills confirmed in the gyms, workshops and simulation halls are carried out under the supervision of the pedagogue in number and quality and reflected in the books of mastering practical skills;
- Performing the practical skills confirmed in the clinical duty, organized in addition to the auditorium in the clinics and clinical training bases of the Medical University, in the on-duty doctor-pedagogic control and displaying them in the on-duty books;
- Participation in patient supervision with a doctor on duty or in the course of treatment;
- Conduct conversations and lectures on sanitary bleach works among the population;
- Independent mastering of some theoretical topics with the help of educational literature;
- Preparation of information (synopsis) on a given topic;
- Work and make reports on special or scientific literature (monographs, articles) on sections or topics of science;
- Solving situational and clinical problems;
- Keys (case-study based on real clinical situations and clinical situational issues) solution.

Also become an independent work of the student:

- Development and filling of graphic organizers;
- Drawing up and solving crosswords;
- Wide application in the process of preparation of presentations and videos, as well as independent work, etc. the G.

Course work on science (project)

Situational issues:

1. The patient is 40 years old. Secondary adenia in the upper jaw 54/34. External examination, oral examination, instrumental examination and panoramic radiography were performed.

What additional radiographs should be performed?

Answer: In addition, panoramic photos should be taken straight and close to each other, as they can determine the relationship of the alveolar arches of the jaws. This does not apply to the general orthopantomogram.

2. The patient is 47 years old. 321 / 12 Secondary adenia in the field. External examination, examination of the oral cavity radiology.

Who else can help with the selection and installation of the implant?

Answer: A more complete examination can be performed by an orthopedic surgeon. It gives a clearer picture: the interaction of jaws and teeth, as the chewing system and jaw and use the jaw model allows to design the surgical procedure.

3. The patient is 36 years old. Secondary adenia in the lower jaw | 456. It was decided to put a vinyl implant. What basic and additional tests can be done to determine the probability of implantation of this implant?

4. The patient is 46 years old. The left side has 123 adrenal glands after an injury to the upper jaw. Have thick mucous membranes and mucous membranes of the transverse thrust.

1. What are your plans for dental implantation?

2. In this case, I used an autograft

5. The patient is 65 years old. Secondary adrenal gland in the left jaw 567 Vertical atrophy of the alveolar intestine. He went to the doctor for implantation.

1. What methods should be used for implantation?

2. What is the most important element when choosing an implant?

6. The patient is 65 years old. High jaw 21 / Secondary adenia in 12 areas. On examination, the patient had atrophy of the alveolar process of the larynx of the vestibule.

1. What methods should be used for implantation?

2. Is it possible to perform an implantation operation?

3. What operation is planned for implantation?

7. The patient is 33 years old. Adenia is defined in 4 areas of the right jaw. Autumn is over, there is a check. During the operation, the doctor performed: the mucous membrane and bone marrow were cut to the bone, the implant was twisted and the wound was damaged.

1. What stage of implantation was abandoned?

2. Is there a need to apply osteoplastic material?

8. The patient is 40 years old. Secondary adenia in the upper jaw 54/34. External examination, oral examination, instrumental examination and panoramic radiography were performed.

What additional radiographs should be performed?

Answer: In addition, panoramic photos should be taken straight and close to each other, as they can determine the relationship of the alveolar arches of the jaws. This does not apply to the general orthopantomogram.

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10. The patient is 36 years old. Secondary adenia in the lower jaw | 456. It was decided to put a vinyl implant. What basic and additional tests can be done to determine the probability of implantation of this implant?

Complete examination of the oral cavity, palpation, instrumental methods: measurement of the thickness of the alveolar process, radiography, RCT, MRI, etc.

11. The patient is 45 years old. On the upper jaws defects of the left 5-6-7 teeth. Examples of molars in the upper jaw and options for preparing dental implants.

Answer: Radiographs (dental and panoramic radiographs or CT scans). The analysis of the size and quality of the alveolar ulcer and occlusion, obtaining the al-diameter of the alveolar mass (thickness, height relative to the bottom of the gamma cavity), measuring the thickness of the mucous membrane was carried out.

Plan for bone growth and sinus lifting as needed.

12. The patient is 54 years old. The lower jaw is defective on the left 5-6-7 teeth. Examples of molars in the lower body and options for preparing dental implants. Answer: Radiographs (dental and panoramic radiographs or CT scans). Analysis of the size and quality of alveolar growth and occlusion, measurement of the size of the alveolar process of the larynx (thickness, height relative to the nerve of the lower limb), measurement of the thickness of the mucous membrane.

If necessary, plan for lateralization of the bone marrow and lower extremities.

13. The patient is 48 years old. Upper left jaw 123 teeth after injury to the secondary adrenal mucosa

What are the research tactics and methods for dental implantology?

A radiographs, thickness of the upper jaw of the alveolar part o'lchash. Tortilgan mucosal layer, and if necessary remove loose o'sikni and bone implants for the bone tissue inside o'sirish

14. The patient is 46 years old. Full adrenal gland. Degree of adhesion of alpha-polar growth III. Surgical methods of preoperative preparation of small dentures

Answer-vestibuloplasty, alveoloplasty, sinus lifting if necessary

TEST:

1. What method of sinus lifting is used when the subantral bone is 5-8 mm?
 - A. method of lateral opening of the window
 - B. localization of the bottom cavity (osteotomy)
 - V. lymphatic sinus lifting using an autoclave
 - D. by painting the front wall of the cavity
 - D. Instructions against sinus lifting
2. According to Mish D. What quality of bone is found in the anterior part of the upper jaw:
 - A. D1
 - B. D4
 - V. D2; D3
 - G. D3; D4
 - D. D1; D4
3. What method of sinus lifting is used when the subantral bone is 9-10 mm?
 - A. method of lateral opening of the window
 - B. The cavity is raised locally (osteotomy).
 - V. Lateral sinus with bone application
 - G. by painting the anterior wall of the cavity
 - D. all answers are correct
4. Optimal distance between the upper jaw and the maxillary cavity:
 - A. 11 mm
 - B. 12 mm or more
 - B. 1 mm
 - 1.5 mm
 - D. 7mm
5. At what thickness is the subantral bone used for autoimmune sinus lift:
 - A. 6 mm
 - B. 6-7 mm
 - V. If less than 5 mm
 - 5 mmAutoinducers not be used to lift sinus D.
6. What are the types of upper jaw lift?
 - A. method of lateral opening of the window
 - B. The cavity is raised locally (osteotomy).
 - V. endoscopic lifting through the medial wall
 - G. all answers are correct
 - D. painting the anterior wall of the cavity
7. What is the diameter of the bone layer after removal of the localized mucosa?
 - A. less than 1 mm less than the diameter of the implant
 - 0.5 mm smaller than the implant diameter
 - V. 0.5 mm larger than the implant diameter
 - Just like G. implant
 - D. less than 2 mm smaller than the diameter of the implant
8. When the quality of the upper jaw of the microscope is D3, when the second stage of implantation is performed

- A. 3 months
- B. 9 months
- V. 6 months
- G. 4 months
- D. 1 month

9. How long after biosynthetic sinus lifting is implantation performed:

- A. 3 months
- B. 9 months
- V. 6 months
- G. 4 months
- D. 2 months

10. The following rules must be observed during bone plate surgery

- A) sufficiency of soft texture
- B) facilitating removal of the bone
- C) preservation of facial hormone
- D) all of the right answers *

11. The following recommendations should be followed in oral oral texture:

- A) Good oral hygiene
- B) The artery and vein are dissected
- B) The mucous membrane is separated by the bone marrow
- D) The location of the facial muscles is taken into account
- D) all of the right answers *

12. Osteoplasty Technique of the oral cavity is part of the prosthetics procedure

- A) taking ectstasy *
- B) sanitation of the oral cavity
- C) removal of subcutaneous and gums
- D) teach the patient the rules of hygiene
- D) Frenulotomy

13. Oral plastic soft tissue prosthesis is a method before prosthetics

- A) Removal of exostoses
- B) rehabilitation of the oral cavity
- C) removal of subcutaneous and gums
- D) teach the patient the rules of hygiene
- D) frenulotomy *

14. Osteoplasty technique The oral cavity is part of the prosthetics procedure

- A) Lift your upper jaw
- B) Subcutaneous nerve intervention
- C) lengthening of the lower jaw
- D) Frenulotomy
- D) language extension

15. According to Mish D. What is the quality of bone in the anterior part of the upper jaw:

- A. D1
- B. D4
- V. D2; D3

G. D3; D4

D. D1; D4

16. What method of sinus lifting is used when the subantral bone is 5-8 mm:

- A. method of lateral opening of the window
- B. localization of the bottom cavity (osteotomy)
- V. lymphatic sinus - lifting with an autoclave
- D. by painting the front wall of the cavity
- D. Instructions against sinus lifting

17. What method of sinus lifting is used when the subantral bone is 9-10 mm?

- A. method of lateral opening of the window
- B. The cavity is raised locally (osteotomy).
- V. Lateral sinus with bone application
- G. by painting the anterior wall of the cavity
- D. all answers are correct

18. Optimal distance between the upper jaw and the maxillary cavity:

- A. 11 mm
- B. 12 mm or more
- B. 1 mm
- 1.5 mm
- D. 7mm

19. At what thickness is the subantral bone used for autoimmune sinus lift:

- A. 6 mm
- B. 6-7 mm
- V. If less than 5 mm
- 5 mm

Autoinducers not be used to lift sinus D.

20. What are the types of upper jaw lift?

- A. method of lateral opening of the window
- B. The cavity is raised locally (osteotomy).
- V. endoscopic lifting through the medial wall
- G. all answers are correct
- D. painting the anterior wall of the cavity

21. What is the diameter of the bone layer after removal of the localized mucosa?

- A. less than 1 mm less than the diameter of the implant
- B 0.5 mm smaller than the implant diameter
- C. 0.5 mm larger than the implant diameter
- d. Same as the implant
- D. less than 2 mm smaller than the implant diameter

22. When the quality of the upper jaw of the microscope is D3, when the second stage of implantation is performed

- A. 3 months
- B. 9 months
- V. 6 months
- G. 4 months
- D. 1 month

23. How long after biosynthetic sinus lifting is implantation performed:

- A. 3 months
- B. 9 months
- V. 6 months
- G. 4 months
- D. 2 months

24. Determine the sequence at the first stage of the operation on screw implants:

1. Osteotomy of cortical and caudal sections depending on the implant diameter
2. The wound on the implant is removed
3. The mucous membrane and the surface of the bone are dissected to the bone
4. The implant is inserted into the implant area.

A. 4312; B. 3142; V. 1234; G. 4321; D. 4231

25. Autosynchronization steps from the front of the mandible (choose the wrong answer):

- A. The canal - shaped mandible is cut off from the outer limb, and the mucosal bone clot is isolated.
 - B. Removal of the lower limb of the mandible canal muscle
 - B. Grafts are obtained through spherical and fissure holes
 - G. lateralization of the lower extremities
 - D. the mucous bone is inserted into the surface of the retina and stitched
1. A, D 2. B, G 3. V, G 4. A, G

26. Stages of mandibular transplantation

- A. A trapezoidal incision is made in the free and attached gums in the central teeth.
- B. Expand the cortical layer of bone and a small part of the bone through a wide chisel
- B. Trim the graft to the desired size using spherical or fissure holes
- G. Resection of the root of the central tooth
- D. Mucus is inserted into the surface bone and attached to the suture

1. ABVD 2. AVGD 3. ABGD 4. BVGD

27. What type of implant does not exist:

- A. mucous surface
- B. endoossal
- V. Subperiostal
- G. Bone
- D. endodanto-endoossal

28. Implants for the reception of biomos do not differ:

- A. Bone
- B. Bioinert
- V. Bioactive
- G. Biotolerant
- D. s Zirconium

29. No bone marrow implant:

- A. Round
- B. Screw
- V. Cylindrical
- G. in the form of natural teeth
- D. Plate

30. The implant does not include:

- A. part of the crown
- B.
- V. abutment
- G. implant
- D. no correct answer

31. A dental implant does not include:

- A. Prevention of a pathological degradation of the teeth
- B. Pressure distribution
- V. prevention of jaw atrophy
- G. prevention of partial tooth loss in aden
- D. base

32. Do you know what types of endossal implants?

- A. Cone
- B. Yassi
- V. Button
- G. Tubular
- D. Magnetic

33. Bioinert implant types do not include the following:

- A. Stainless steel
- B. aluminum hydroxide, ceramics
- B. steel
- G. Titanium
- D. zirconium dioxide

34. Which design of the dental implant is not part of the A. Linkov screwdriver

- B. Bonelit
- V. Korea Vent
- G. Astra Tex
- D. Contrast

35. Bone and implant formation:

- A. osteointegration
- B. fibrointegration
- V. fibro-osteointegration
- G. all answers are correct
- D. all answers are incorrect

36. The most perfect connection between bone and implant:

- A. Bone
- B. fibrosis
- B. mixed
- G. Muscle
- D. Scars

37. For severe bone atrophy, the following implants are usually used:

- A. Under the surface of the bone marrow
- B. flat
- B. screw

- G. cylinder
- D. cone-shaped

38. Local recommendations for dental implantation:

- A. bruxism
- B. partial connection
- B. full proximity
- G. lack of fixation of soluble dentures
- D. atrophy of the jaw

39. Provide absolute recommendations for dental implantation:

- A. Allergic reaction to implantation of the material
- B. precancerous compounds
- V. hypersalivation
- G. hepatitis
- D. deformity of the growth axis

40. What testing procedure is not performed during dental implantation surgery?

- A. Anthropometric measurements of the face
- B. tomography
- V. Development of diagnostic models
- G. orthopantomogram
- D. clinical trials

41 The following rules must be observed during bone plate surgery

- A) sufficiency of soft texture
- B) facilitating removal of the bone
- C) preservation of facial hormone
- D) all of the right answers *

42 The following recommendations should be followed in oral oral texture:

- A) Good oral hygiene
- B) The artery and vein are dissected
- B) The mucous membrane is separated by the bone marrow
- D) The location of the facial muscles is taken into account
- D) all of the right answers *

43 Osteoplasty A technique of the oral cavity is part of the prosthetics procedure

- A) taking ectstasy *
- B) sanitation of the oral cavity
- C) removal of subcutaneous and gums
- D) teach the patient the rules of hygiene
- D) Frenulotomy

44 Oral plastic soft tissue prosthesis is a method before prosthetics

- A) Removal of exostoses
- B) rehabilitation of the oral cavity
- C) removal of subcutaneous and gums
- D) teach the patient the rules of hygiene
- D) frenulotomy *

45. The technique of osteoplasty The oral cavity is part of the prosthetics procedure

- A) Lift your upper jaw
- B) Subcutaneous nerve intervention
- C) lengthening of the lower jaw
- D) Frenulotomy
- D) language extension

VI. Main and additional educational literature and information sources

Main literature

1. Kudratov S. S. Basics of dental implantology. Tutorial. - Tashkent. TMA printing house. 2019.
2. Gaffarov S.A., Rizayev Yu.A., Zhilonov A.A., Sadikova G.K. Dentistry. Tutorial. - Tashkent. Lesson Press. 2018.
3. Jilonov A.A., Kudratov S.H., Yarmukhammedov B.H. Dental Implantology. Methodological recommendation. - Tashkent. GF Media group. 2008.

Additional literature:

1. Stewart J. Frun. Complications of a tooth implant. Textbook. Willie Blackwell 2015.
2. Paraskevich V.L. Dental implantology. Textbook. Minsk. Missing 2011.
3. Nilima Anil Malik, Textbook on Oral and Maxillofacial Surgery. JPBMP Printed in Ajanta. 2008.
4. Karl E. Mish. Modern implantology. The third edition. Textbook. 2008.
5. Peterson principles in the field of maxillofacial surgery. Textbook. BC Decker Inc Hamilton London. 2004.
6. Yousev A.I., Remov A.I. Dental implant. A tutorial for practitioners. Dental implantation center. 2004.
7. Robustova T.G. Surgical Dentistry. Textbook. - Moscow Medicine. 2003.
8. Robustova T.G. Dental implantation. The management for doctors. Surgical aspects. - Moscow. Medicine. 2003.
9. Besrukov V.M., Robustova T.G. Manual of Surgical Dentistry and Maxillofacial Surgery. - Moscow. Medicine. 2000. Volume 2
10. Ivanov S.Y., Bizyaev A.F., Lomakin M.V., Panin A.M. Dental Implantology. - Moskva. Medicine. 2000.
11. Mirziyoyev S.M. We are building our great future together with our brave and noble people. Press and Information Agency of Uzbekistan publishing house "Uzbekistan." 2017.
12. Mirziyoyev S.M. Critical analysis, strict discipline and personal responsibility should be the day-to-day rules of each leader. Press and Information Agency of Uzbekistan publishing house "Uzbekistan." 2017.
13. Mirziyoyev Sh.M. Together we will build a free and prosperous, democratic Uzbekistan. Press and Information Agency of Uzbekistan publishing house "Uzbekistan." 2016.

Internet sites:

1. www.e-стоматология
2. www.ziyonet.uz
3. www.edentwold
4. www.histolchuvashia.com
5. Denisfromru.com
6. directorydelovik.com
7. www.dental.ru
8. www.stomatolog.ru
9. www.mediastom.ru
10. www.dentsplycis.com

Criteria for evaluating current control.

	Academic performance in (%) and points	Mark	Student's level of knowledge
	86-100	excellent «5»	<p>Summarizes and makes decisions</p> <p>Creative thinking</p> <p>Independently analyzes</p> <p>Applies in practice</p> <p>Shows high activity, the creative approach at carrying out of interactive games</p> <p>Correctly solves situational problems with full justification of the answer</p> <p>Understands the issue</p> <p>Knows, tells confidently</p> <p>Has an accurate representation of the</p>
	71-85	Good «4»	<p>Applies in practice</p> <p>Shows high activity at carrying out of interactive games</p> <p>Correctly solves situational problems, but the rationale for the answer is not complete enough</p> <p>Understands the issue</p> <p>Knows, tells confidently</p> <p>Has an accurate representation of the</p>
	65-70	Satisfactory «3»	<p>Understands the issue</p> <p>Correctly solves situational problems, but can not justify the answer</p> <p>Knows, tells confidently</p> <p>Has accurate views on individual issues of the topic</p>
	4	Unsatisfactory «2»	<p>Doesn't have an exact representation</p> <p>Doesn't know</p>

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