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CHRONIC POLYPOID RHINOSINUSITIS: ETIOPATHOGENESIS, CLINIC AND TREATMENT

(Methodical recommendations)

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INTRODUCTION

To date, chronic rhinosinusitis in many countries is one of the most common ailments among all chronic human diseases. Chronic inflammatory diseases of the nose and paranasal sinuses frequency propagation in second place in the structure of ENT diseases, accounting for 30% of all diseases.

One of the most difficult forms of chronic rhinosinusitis, both in terms of clinical course, and in terms of treatment, is a chronic polypoid rhinosinusitis (CPRS).

CPRS is one of the most pressing problems of Otorhinolaryngology, not only because of its prevalence, recurrent nature of the flow, but also significant impairment of quality of life of patients suffering from this disease. Given the prevalence of CPRS, this pathology occurs in zaimosvyazannosti with comorbid pathologies such as allergic rhinitis, asthma, aspirin intolerance, chronic sinusitis, allergic fungal sinusitis syndrome Charzh-Strauss, cystic fibrosis, primary ciliary dyskinesia, Kartagener syndrome, syndrome Yang, sarcoidosis.

EPIDEMIOLOGY OF CHRONIC POLYPOID RHINOSINUSITIS

CPRS is a serious problem in modern medicine, as reduces the quality of life of patients due to deterioration or complete blockade of nasal breathing, disturbances of smell, headache and chronic hypoxia.

Frequency CPRS has a clear upward trend, the proportion of this disease in the structure of ENT diseases is 5 - 20%, and in the general population - 1 - 4%. Despite improvements in surgical techniques and a wide arsenal of drugs used, the frequency of recurrence of polyps ranges from 5 to 60%.

Studies in the population, conducted Zabolotnov DI (2005) showed that the prevalence of Czechoslovakia CPRS population is 1.1%. Observations based on medical examinations 50,000 residents of Moscow with the front and rear rhinoscopy, gave approximately the same result. Polyps in the nasal cavity were found in 1.02% of the examined patients, in Russia there are about 1 million. 400tys. CPRS patients. Frequency CPRS in Denmark is 0.627 per thousand per year in France was 2.11% in the US are diagnosed 185,000 new cases of chronic polypoid rhinosinusitis in the UK - about 37,000, in Skovde (Sweden), the prevalence of nasal polyps was 2.7% of the total population, in a Caucasian population ranges from 1% to 4.3%.

In a study conducted with the use of modern technology, nasal polyps were more common in males (2.2: 1), the elderly (5% at 60 years and older), and patients with bronchial asthma. Therefore, nasal polyps found in all studies and age are becoming more common.

ETIOPATHOGENESIS OF CHRONIC POLYPOID RHINOSINUSITIS.

CPRS - a chronic inflammatory disease of the mucous membrane of the nasal cavity and paranasal sinuses characterized by the formation and growth of recurrent polyps, consisting mainly of edematous tissue, infiltrated cellular elements, such as eosinophils and neutrophils.

However, many etiological factors, their relationship and role in the pathogenesis of nasal polyps are not yet clear, there is no clearly accepted theory of the origin and development of polyposis. This is compounded by the lack of a common classification that includes clinical history and histology, which allows to differentiate various forms of nasal polyposis.

Theory, showing the development of CPRS:

One of the hypotheses consistent development stages of nasal polyposis is a picture of chronic inflammation of the nasal mucosa. CPRS problem is quite unique and this uniqueness lies in the fact that the local formation of polyps, easily assessed visually and, it would seem, are a reflection of the phenomenon locus morbi, actually absorbs quite substantial, pathogenetically significant changes in the immune, nervous, endocrine , respiratory et al. systems. These changes and their interpretation are presented in many papers devoted to the problem of CPRS. In other words the local formation of nasal polyps is a reflection of systemic changes in the body and these facts should certainly be taken into account in the preparation of the tactics of treatment and management of patients CPRS.

Some authors CPRS considered as a disease with impaired immune homeostasis and the development of persistent immune inflammation, leading to remodeling of the mucous membrane and the formation of a productive process.

Some authors consider a violation of the aerodynamics of the nose as one of the causes of CPRS. It was found that the deformation of the nasal septum on the border of the bone and cartilaginous part of the air flow is reflected in ostiomeatal complex, which leads to a slowly developing chronic inflammatory process of the mucosa, manifested polyp formation in the anterior end of the middle turbinate, along the edge of hooklike process, in the frontal pocket in the absence of pathological changes in the paranasal sinuses.

Significant place among the probable causes of fungal infections is given CPRS mucosa in response to an immune response that develops in the form of eosinophilic inflammation. Among the causes of eosinophilic inflammation of the

mucous membranes of the nose and sinuses to the formation of polyps, called bacterial infection and, in particular mucosal lesion Staphylococcus aureus.

Thus, one of the main mechanisms in the pathogenesis of CPRS is the development of chronic inflammation of the mucous membrane, which in most cases (80%) is allergic (eosinophilic) the nature and only 20% of non-allergic (neutrophil) character.

From the histological point of view, consists of a nasal polyp is damaged, often metaplazirovannogo epithelium located on a thickened basement membrane and stromal edema, containing a small amount of iron and practically devoid of blood vessels and nerve endings. The stroma contains typical polyp fibroblasts forming a support frame, pseudocysts and cellular elements of which are the main eosinophils, located around blood vessels, glands, and directly below the surface epithelium. The main cells are eosinophils, lymphocytes (neutrophils), plasma cells. When the nature of eosinophilic inflammation in the cellular structure of the polyp is dominated by eosinophils, with non-allergic inflammation - neutrophils. One of the popular theories of pathogenesis CPRS suggests that at an early stage of formation of a polyp as a result of repeated infections develop chronic swelling own layer of mucous membrane caused by the violation of intracellular transport of liquid. At a certain stage, this leads to a rupture of the basal membrane of the epithelium layer and prolapse own formation of granulation tissue.

Currently, almost all development schemes inflammatory hyperplastic process in the nasal mucosa with CPRS great importance given to the role of activated eosinophils in situ and in the systemic circulation, as well as related functional activity of these cells changes in systemic and local adaptive immunity. Taking into account the data on the role of eosinophils in the pathology of the respiratory tract, gastrointestinal tract, helminth-parasitic infestation, asthma, atopic dermatitis and other eosinophilic diseases and neoplastic processes, this approach seems quite reasonable. Well grounded and attempts to develop therapeutic agents aimed at suppression of functional activity of these cells in the tissue of nasal polyps and in the blood.

It can be assumed that the inflammatory cells to migrate into the mucosa to phagocytose pathogenic bacteria. However, the key cells in the pathogenesis of CPRS - eosinophils - typically involved in protecting the body from the larger human nefagotsitiruemyh microorganisms and parasites. In this regard, looks logical and grounded theory looks fungal pathogenesis CPRS. Studies conducted in the clinic Mayo (USA) and later repeated in Graz (Austria), showed that the elements of the mycelium of fungi detected in the vast majority of patients with chronic rhinosinusitis and practically all healthy persons in the control group. In 96% of patients with chronic rhinosinusitis contents SNPs were identified eosinophils migrating here from the mucous membrane and form clusters around the fungal elements. Immunological studies have confirmed that T-lymphocytes from patients with chronic rhinosinusitis in case fungal allergen presentation may single out certain cytokines which can recruit (IL-13) and activate (IL-5) eosinophils.

Fungal pathogenesis CPRS theory that emerged from these studies is as follows. In contrast to the T lymphocytes of healthy individuals T lymphocytes of patients CPRS activated eosinophils and cause them to migrate into the mucus contained the ED, where normally always present in mushrooms falling within the sinus during normal ventilation. Groups eosinophils surround and destroy fungal elements by allocating contained in their cytoplasm of toxic proteins, the most important of which is more basic protein, eosinophil cationic protein, eosinophil peroxidase and eosinophil neurotoxin. As a result, a lumen is formed very dense SNP mucin containing large amounts of these toxic proteins, which has a damaging effect on the mucous membrane, causing it to chronic inflammation and growth of polyps.

At this stage in the process can participate and bacteria that are able to penetrate the damaged, lost its protective mechanisms mucosa and contribute to the development of recurrence of inflammation. The fact that bacteria can also participate in the development of the inflammatory process in CPRS, confirmed, in particular, the results of research and V.F.Filatova S.V.Filatova (1999) found a

positive skin test to one bacterial allergens in 27.3% and several - in 54.2% of patients CPRS. Most often observed sensitization to staphylococcal and streptococcal antigens. Recent studies C.Bachert et al. (2001) found an increased content of specific IgE to Staphylococcus aureus in nasal polyp tissue. It is believed that Staphylococcus enterotoxin may play a role superantigen, which causes a rapid growth of polyps and, as an option, the development of the concomitant asthma.

Released from the granules of eosinophils large basal protein can act on the electrolyte metabolism of epithelial cells by blocking the sodium pump and increasing the yield of chloride ions from the cell. As a result, interstitial edema develops, also promotes growth of polyps.

Another pathogenetic mechanism CPRS intensively studied in recent years - a violation of arachidonic acid metabolism. The classical clinical picture of "aspirin" implies the presence of the triad of asthma in combination with eosinophilic rhinitis or CPRS, the manifestations of which increases sharply after taking non-steroidal anti-inflammatory drugs (GMP). It is known that GMP can interfere with the metabolism of eicosanoids, inhibiting cyclooxygenase which catalyzes the cleavage of arachidonic acid to prostaglandins and thromboxanes. The inhibition of cyclooxygenase leads to the activation of the alternative pathway of arachidonic acid is converted into leukotrienes which is under the influence of 5-lipoxygenase. Lipoxygenase products of arachidonic acid degradation pathways are leukotrienes LTC-4, LTD-4, LTE-4 and others. - Powerful pro-inflammatory mediators, hundreds and thousands of times more active than histamine and prostaglandins. Leukotrienes can stimulate the migration of eosinophils in the mucosa of the respiratory tract, cause bronchoconstriction and enhance mucus secretion.

Thus, the ratio of laboratory research content of prostaglandin E2 and peptidoleykotrienov in venous blood (called PGE2 / pLT-index) revealed a violation of the metabolism of arachidonic acid in approximately 80% of the initial 90% with recurrent CPRS. Based on these studies, the hypothesis states that the

majority of patients CPRS has hidden intolerance NPP, although it is not manifest in a detailed clinical picture, for example, due to the fact that these patients avoid taking aspirin. However, to exclude completely reception NPP is impossible, since they are found in many fruits and vegetables (oranges, grapes, strawberries, raspberries, cucumbers, tomatoes, currants, apples, etc.), Certain food dyes and preservatives. Permanent entering the body of the patient different doses with food SPE causes recurrent eosinophilic inflammation in the mucosa of the upper respiratory tract and causes growth "aspirinindutsirovannyh" polyps.

Undoubtedly, CPRS is a very serious unsolved problem of modern medicine. This disease is often a manifestation of systemic diseases of the respiratory tract, and its pathogenesis is closely associated with the pathogenesis of bronchial asthma, impaired metabolism of arachidonic acid and water and salt exchange in the organism, in particular CF.

CLASSIFICATION OF CHRONIC POLYPOID RHINOSINUSITIS

G.Z. Piskunov proposes to distinguish the following forms of CPRS:

1) polyposis of the breach of aerodynamics in the nasal cavity and paranasal sinuses,

2) polyposis due to chronic suppurative inflammation of the mucous membranes of the nose and paranasal sinuses,

3) polyposis due to fungal infections,

4) polyposis of the breach of arachidonic acid metabolism,

5) polyps in cystic fibrosis and Kartagener syndrome.

Typically, nasal polyps are divided into allergic and infectious, that is expressed by chronic suppurative inflammation. The basis of this division on data cytological, morphological and microbiological studies. So, for polyps infectious pripody characterized by neutrophilia nasal secretions, purulent discharge from the nasal passages and the absence of pronounced effect of steroid therapy. For polyps allergic etiology characterized by - eosinophilia nasal secretions, mucous and watery discharge from the nasal passages, a good therapeutic effect of steroids.

Based on the above classification of symptoms of nasal polyps divides them into neutrophilic and eosinophilic.

Among patients with neutrophil polypoid rhinosinusitis observed in 10-15% of cases. They are usually associated with chronic purulent rhinosinusitis. Eosinophil polyps usually found in patients with asthma and allergic rhinitis. According A.I. Muminov et al. (1987) was detected in nasal polyposis 22.8% of patients with atypical form of bronchial asthma, from 8.7% of the infectious-allergic and 14% in patients predastmy.

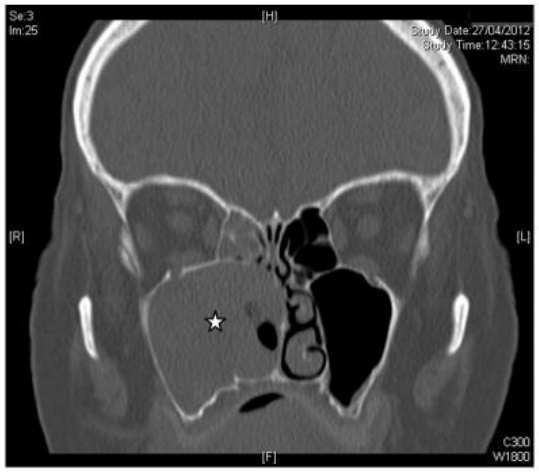
However, the relationship between eosinophilic polyps and allergies remains understudied and understandable.

DIAGNOSIS OF CHRONIC POLYPOID RHINOSINUSITIS

The absence of pathognomonic symptoms determines the need for accurate diagnosis CPRS. Anterior rhinoscopy is the primary method for determining the pathologies of the nasal cavity. During the inspection, special attention is paid to possible mucosal edema and / or congestion, polyps or polypoid swelling, crusting and nasal discharge. Rinoskopii only provides better visibility to the middle turbinate and therefore has limited, but, nevertheless, remains a first step in the study of patients with this disease. When rinoskopii poorly visualized average nostril and the rear part of the nasal cavity, there is therefore a need nasal endoscopy.

Computed tomography (CT) and magnetic resonance imaging helps a specialist to evaluate rasprostrannënost polypoid process in the paranasal sinuses and the peculiarities of the surrounding structures. Before the operation, in about the nasal cavity is necessary to have information about their anatomical structure, since the structure of populations are quite different. Computed tomography (CT) is required to assess the state of the paranasal sinuses. Figure 1.2 shows the projection of a coronary CT scans of normal osteomeatalnogo complex and nasal polyps.

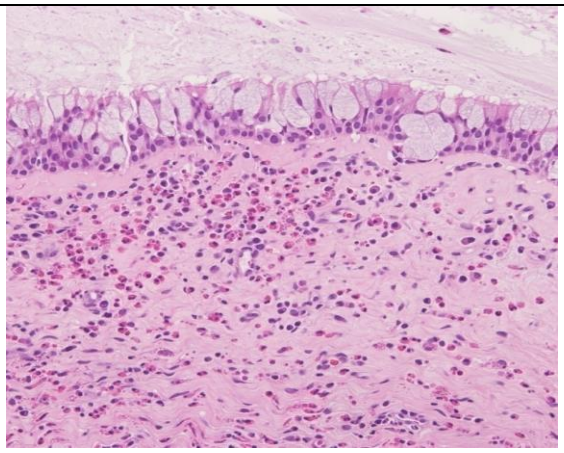
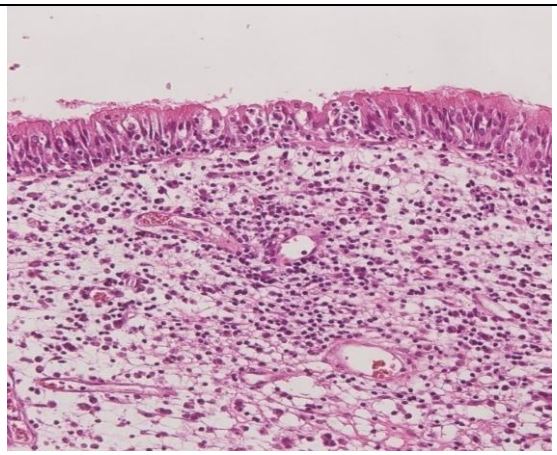
Plain radiography okoonosovyh sinuses, despite the low cost and availability is limited opportunity for the diagnosis of rhinosinusitis due to the underestimation of the pathologies of bone and soft tissue in comparison with computed tomography (CT) and magnetic resonance imaging (MRI).

	
On the X-ray determined circular formation in the right maxillary sinus	On CT scan determined multiple polypous education in both ethmoidal, frontal, maxillary and nasal cavity

CT is the method of choice for the study of the paranasal sinuses due to optimal mapping of bone and soft tissue. However, it should not be seen as the main research method in the diagnosis of pathologies of the nose, except in cases of unilateral processes and other symptoms or signs neblogopriyatnyh in which it helps confirm the diagnosis and endoscopic examination after failure of conservative therapy. Much attention has recently been focused irradiation associated with CT, the use of which in the last 30 years has increased 20 times. Thus, we have developed several methods to reduce exposure to a comparable or better resolution. Cone beam technology is becoming more and more accessible and it is connected with a lower radiation exposure than conventional studies.

Cytological examination is the most essential method in the diagnosis of rhinosinusitis to exclude malignancy and more severe cases, such as neoplasia, and vasculitis. These methods include washing the nasal cavity of 0.9% saline mikrovsasyvanie, nasal brushes, scrapers with disposable cup-shaped ends or small

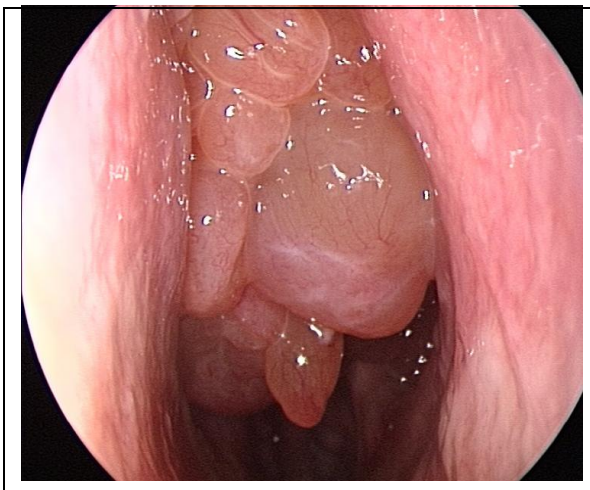
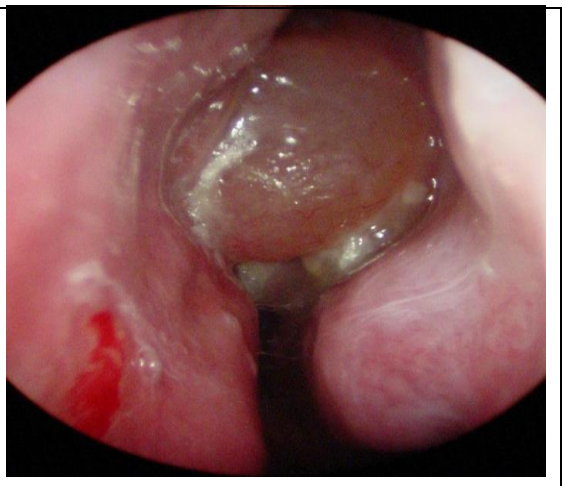
mucous samples taken using forceps Hartmann. They are widely used in clinical studies.

	
Colored gematoksillin-eosin. Increased x200. In the stroma of nasal polyps is determined by the prevalence of eosinophilic infiltration.	Colored gematoksillin-eosin. Increased x200. In the stroma of nasal polyps is determined by the predominance of neutrophil infiltration.

Microbiological studies - a method that reveals miicrobes of nasal cavity and paranasal sinuses. In addition, there are more sophisticated research methods for detection and identification of bacteria, including immunohistochemistry, detection and amplification of microbial DNA and RNA. Fluorescent hybridization (FISH) and confocal microscopy is used to demonstrate bacteria in biofilms.

Endoscopy plays a very important role in the diagnosis of nasal polyps, so this method of research was accepted as the gold standard.

These endoscopic examination are shown in Figure.

	
Chronic relapsing polypoid rhinosinusitis. endoscopic picture	Chronic suppurative polypoid rhinosinusitis. endoscopic picture

During endoscopy polyps appear as translucent education, watery mass protruding into the nasal cavity. They may be unilateral or bilateral. At endoscopy should be examined both nasal cavities.

The differential diagnosis should be done with CPRS antrohoanalnymi polyps; congenital anomalies, such as meningocele and meningoentsefalotsele; benign tumors such as papillomas and meningiomas; malignant tumors. Especially when they should differentiate unilateral polyps. However, it should be borne in mind that, if nasal polyps are found, while in all cases necessary to the morphological study of tissues polyps. Also, when spacers diagnosis CPRS comorbidities must be considered, such as aspirin, induced respiratory disease, cystic fibrosis, primary ciliary dyskinesia, or fungal infections of the nose and the paranasal sinuses.

INTERVENTIONS FOR TREATING CHRONIC POLYPOID RHINOSINUSITIS

Treatment CPRS typically includes surgery, medication or a combination of methods.

Modern surgical techniques have the following objectives: restoration of free nasal breathing, the complete removal of polypoid tissue, maximum preservation

of intact mucosa. Surgical procedures are performed under endoscopic control. To remove polyps, in order to minimize injury to intact mucosa applied mikrodebridernaya technique, laser degradation, etc. polyps.

Conservative treatment CPRS mainly consists in assigning glucocorticosteroid drugs. These drugs have a pronounced and rapid anti-inflammatory and immunosuppressive manifested action. They reduce eosinophil infiltration secretory activity of the glands and mucosa, reduce the degree of vascular permeability, inhibit the synthesis of leukotrienes, interleukins, to control the expression of cell receptors, and cell adhesion molecules. As a result of their use reduces swelling of nasal mucosa, the number of runny, reduces the amount of polyps improves the patency of the nasal passages and sinuses natural anastomoses. Thus, glucocorticoids affect virtually all pathogenesis CPRS and today are the only means to slow the growth of polyps and lengthen periods of remission when CPRS.

A large number of side effects (hypertension, osteoporosis, steroid ulcer, immunosuppression, diabetes, depression of the hypothalamic-pituitary-adrenal system, and others.) Do not allow wide use in the treatment of systemic glyukortikosteroidy polypoid rhinosinusitis.

Modern topical nasal steroids do not cause systemic side effects of drugs due to their low bioavailability, and, at the same time, have a pronounced anti-inflammatory action, which allows them to be advantageously used in the treatment CPRS. Application of local glyukortikosteroidov after surgical removal of polyps can prevent early recurrence of polyposis. Often achieved remission: patients do not complain about the difficulty of nasal breathing on runny from the nasal cavity. Objectively, there is a lack of polypoid tissue in the lumen of the nasal passages. Thus, for quite a long time improves the quality of life of patients and decreases the likelihood of re-operative intervention. The latter is especially important for patients with both asthma and rhinosinusitis polypous as any operation in the nasal cavity in such patients is fraught with the development of an asthma attack or worsening of bronchial asthma.

Comparing surgical and medical treatments, it can be concluded that the use of even the most recent advances rhinosurgery can influence only on the final result of the pathological process without affecting the pathogenesis CPRS, ie surgical treatment is symptomatic. It does not interrupt the chain of CPRS and therefore has little effect on the duration of remission. Treatment CPRS steroids is pathogenic nature, because it is aimed at blocking the effects of biologically active substances and cells that are directly involved in the pathological process.

To date, the best treatment is a combination of CPRS surgical methods of treatment and medication.

International agreement on the diagnosis and treatment of rhinitis (International Consensus Report on the Diagnosis and Management of Rhinitis, 1994) based on the current understanding of the inflammatory nature of the disease recommends treatment of chronic polypoid rhinosinusitis 1-2 stages - course of intranasal corticosteroids, 3 stages - a short course of oral corticosteroids and intranasal corticosteroids. When treatment failure surgical treatment.

Glucocorticosteroids (COP) for a long time and are widely used in the treatment of CPRS. These drugs have a pronounced and rapid anti-inflammatory and immunosuppressive manifested action. Consider the known pharmacological mechanisms of action of the COP in relation to the above theories of pathogenesis CPRS.

COP decrease the number of mast cells and their mediators allocated and the number of eosinophils, T-lymphocytes and Langerhans cells in the airway mucosa. By inhibiting the synthesis of arachidonic acid products reduce the COP of leukotrienes and prostaglandins, thereby reducing plasma extravasation and tissue swelling. COP reduces the secretion of glands, as well as the sensitivity of receptors of the nasal mucosa to histamine and mechanical stimuli. Thus, the COP impact on virtually all aspects of the pathogenesis of CPRS.

For the treatment and prevention of growth ORS polyps after surgery can be used as systemic and topical therapy COP. A short course of systemic CS therapy, called "drug polipotomiey", is widely used in the treatment of CPRS, and

its effectiveness in many cases not as effective as instrumental polipotomii performed using the loop. For the "drug polipotomii" prednisolone (preferably tablets Sheathed) administered in a dosage of 0.5-1 mg per 1 kg of body weight, typically 10 days. For the prevention of side effects of two-thirds of the daily dose should be taken early in the morning, the remaining dose - during lunch. On the 11th day of prednisone is gradually tapered and discontinued. The whole treatment takes 14-16 days.

Such a course may be appointed if there are contraindications to surgery. If polyps retsidiviriruyut in a very short period of time when both patient and physician disappointed with the results of repeated operations, the alternative may also be courses of systemic CS therapy was administered not more than 2 times a year.

Optimal treatment CPRS, especially associated with bronchial asthma, intolerance NPP, nasal and bronchial hyperresponsiveness, is a combination of the system COP therapy and surgical treatment. In these situations, we will always perform background interference for a short course of systemic treatment of COP, prednisolone 30-40 mg / day in two divided doses (20-30 mg in the morning 8 h + 10 mg in the afternoon) for 3 days prior and 3 days after the surgery. This regimen is used in more than 300 patients. None of them were observed exacerbation of asthma in the postoperative period. Treatment of CS before surgery reduces the size of polyps and reduces swelling and bleeding tissue and allows a surgeon to perform interference with minimal trauma and maintaining the anatomical structure of healthy mucosa.

Another method of systemic CS therapy is the introduction of the deposited corticosteroids. Currently, there are no reliable data concerning the efficacy and safety of this treatment. In comparison with the use of depot preparations and oral administration vnutivennoe seem preferable, as cheaper tablet form and dosage of drugs may be corrected in accordance with the dynamics of the disease. It is believed that drug release from the depot during all days suppress the

hypothalamic-pituitary-adrenal system more than a single dose ingested in the morning.

It should be remembered that the introduction of the deposited COP in nasal turbinates and polyps is not local, but a form of systemic CS therapy. Never conducted studies comparing the effectiveness of intranasal and intramuscular injection, and, most likely, these two methods of administration on the effects on the symptoms of CP and size of nasal polyps are no different. But the injection of depot preparations in the nasal turbinates associated with the risk of embolism and retinal blindness.

Another version of COP-therapy is the introduction tetrakozaktid - synthetic polypeptide having the properties of adrenocorticotropic hormone. This drug stimulates the adrenal glands initial phase synthesis of steroid hormones, such as cortisol and cortisone. Treatment with CPRS usually consists of two injections of 1 mg to 48 hour intervals. In appointing tetrakozaktid must comply with all precautions as during system COP therapy courses should not be repeated 3-4 times a year.

Stimulation of the COP can be intravenous injections of 30% solution of sodium thiosulfate and a 5% solution of ascorbic acid. The mechanism of action is based on the decomposition of sodium thiosulfate to form sulfur, which occurs in acidic medium. Sulfur has a strong desensitizing effect and stimulates the production of endogenous CS. Studies have shown that a course of intravenous infusions of 10, held after the removal of polyps reduces the frequency of relapses polyposis.

Attempts topical application in the treatment of COP CPRS made, starting with the 50-ies of XX century, but almost 20 years, they have been unsuccessful due to lack of drugs with high topical activity. It was found that after spraying the formulation in the nasal cavity very large part of it is rapidly moved to the nasopharynx, swallowed into the stomach and can cause the same unwanted side effects, and systemic administration of the drug. Due to the intense perfusion of the nasal cavity after injection into the mucosa turbinates substantially all the drug

enters the bloodstream. Thus, the application having 100% bioavailability hydrocortisone and betamethasone as nasal drops has practically no advantages over general therapy COP since it leads to the same suppression of the hypothalamic-pituitary-adrenal system.

The ideal COP topical formulation should possess high topical activity and the minimum total bioavailability. The first of these drugs - metered nasal spray beclomethasone dipropionate (BDP) appeared in the early 70s, and already in 1975 have been published very encouraging results of its use in the DRC. BJP used in Rhinology to this day, showing a good efficiency, but in the following years were developed 2 drugs - fluticasone propionate (FP) and mometasone furoate (MF) which has the desired properties of the "ideal" topical COP. Along with the very high local activity of AF has bioavailability of 1-2%, and MF - only 0.1%. A typical daily dosage of the BJP at the PRS - 600 mg (2 doses in each half of the nose 3 times a day), MF and AF - 400 mg (2 doses in each nostril 2 times a day). The effectiveness of the mentioned drugs in CPRS proven in controlled studies.

To date, duration of treatment with topical COP (in the form of a nasal spray or nasal drops) remain the mainstay of treatment and relapse prevention CPRS after removal of polyps. Encouraging results of the application of topical COP as a monotherapy, which in some cases may be an alternative polipotomii. Thus, assigning MF patients who planned surgical treatment, 72% so we got a marked improvement in nasal breathing, that the need for surgery disappeared, at least for the treatment of MF.

All members of the expert group involved in the preparation of an international consensus to believe that treatment should begin with the IRS designation by the COP, and only in the event of lack of efficacy may be considered surgery (Mladina R., 2002).

In connection with the theory of fungal pathogenesis of CP in the last decade of the twentieth century there was a question about the possibility of the use of antifungal drugs in the treatment of this disease. Were conducted pilot

testing the effectiveness of topical application of the solution of amphotericin B, which is administered as a nasal douches. Patients did washing independently using each half of the nose 20 ml amphotericin B or itraconazole 100 mg / ml, twice a day for 4 weeks. Another option is self-sputtering of the same solution in the nasal cavity. In noncomparative study conducted EBKern et al. (2001) managed to improve (ie reduce the size of polyps) in 75% of patients. In another open-label study of the course after instillation of amphotericin B solution was observed complete disappearance of polyps in 40% of non-operated patients and 54% of patients receiving antifungal therapy after endoscopic intranasal intervention. It should be noted that in both studies, on the background of the antifungal treatment continued conventional therapy with topical COP. The first double-blind, placebo-controlled study of the efficacy of topical treatment with a solution of amphotericin B is currently underway in the United States. In the near future planned multicentre trials in Europe.

Attempts to use and systemic antifungals, in particular itraconazole. To treat the most severe cases of CP M.Rains and R.Setliff administered this drug to patients ORS as follows: 400 mg / day for 2-4 weeks, then 200 mg / day another 2-4 weeks, and then another 100 mg / day within a month. For optimal absorption of the drug requires an acidic environment, so it is recommended to wash down pills Coke and not be combined with antacids. Later, however, the author himself admitted that such "short" courses of treatment do not give the desired result and became appoint intakonazol at a dose of 200 to 400 mg / day for a period of one year or more. The results of treatment with itraconazole repeatedly presented at international congresses by demonstrating impressive clinical cases, but no analysis of the long-term results in a group of patients has not yet been carried out. It should be remembered hepatotoxicity of this drug, especially during chronic administration. Month course of treatment with a daily dose of itraconazole 400 mg costs about $ 700.

M.N.Melnikov (2000) applied topically (SNPs lavage solution of amphotericin B on Proettsu) and systemic (fluconazole) antifungal treatment for

the most severe forms of recurrent polyposis common SNPs. He said that the appointment of fluconazole gave short-term effect, and the disease recurred shortly after discontinuation of the drug. Course washes SNPs solution of amphotericin B, consisting of 10 procedures performed on an outpatient basis after surgery, followed by syringing independent of the nasal cavity with the solution for 4 months gave more consistent results and in some cases can achieve "full epithelialization operated sinuses." Concentration of the solution used and the results of treatment in a particular group of patients does not lead author.

Specific immunotherapy (SIT) is clearly indicated in patients ORS with proven results allergic sensitization to aeroallergens survey environment or dwellings.

Even more pressing issue of SIT with ORS becomes in the light of the theory of fungal diseases. R.Marby et al. (1998) for 3 years was conducted SIT subcutaneous fungal allergens CP patients who had specific anti serum IgE. After the cessation of SIT polyps did not recur in up to 18 months. SIT must be combined with surgical revision SNPs, removing polyps and allergic mucin, otherwise it has no effect or even leads to the progression of the disease. Until the industrial production of fungal allergens neobhoodimyh for SIT, in particular the genus Bipolaris, which is considered one of the most important in the etiology of allergic fungal sinusitis and ORS.

SIT bacterial allergens can be theoretically justified in view of the possible role of bacterial superantigens in the pathogenesis of CP. Attempts to apply this method were made mainly in the 70s of the twentieth century. Individually prepared or standard bacterial allergens in increasing concentrations administered subcutaneously, intradermally, or by spraying the nasal cavity and pharynx courses of different duration (1 to 9 months). The effectiveness of this treatment for CP is difficult to judge, as the majority of observations concerns the treatment of "infectious-allergic rhinosinusopathy." In recent years, a method is rarely used. And V.F.Filatov S.V.Filatov (1999) reported that treatment of polio, prepared from the microflora isolated from the nose of the patient, enables longer

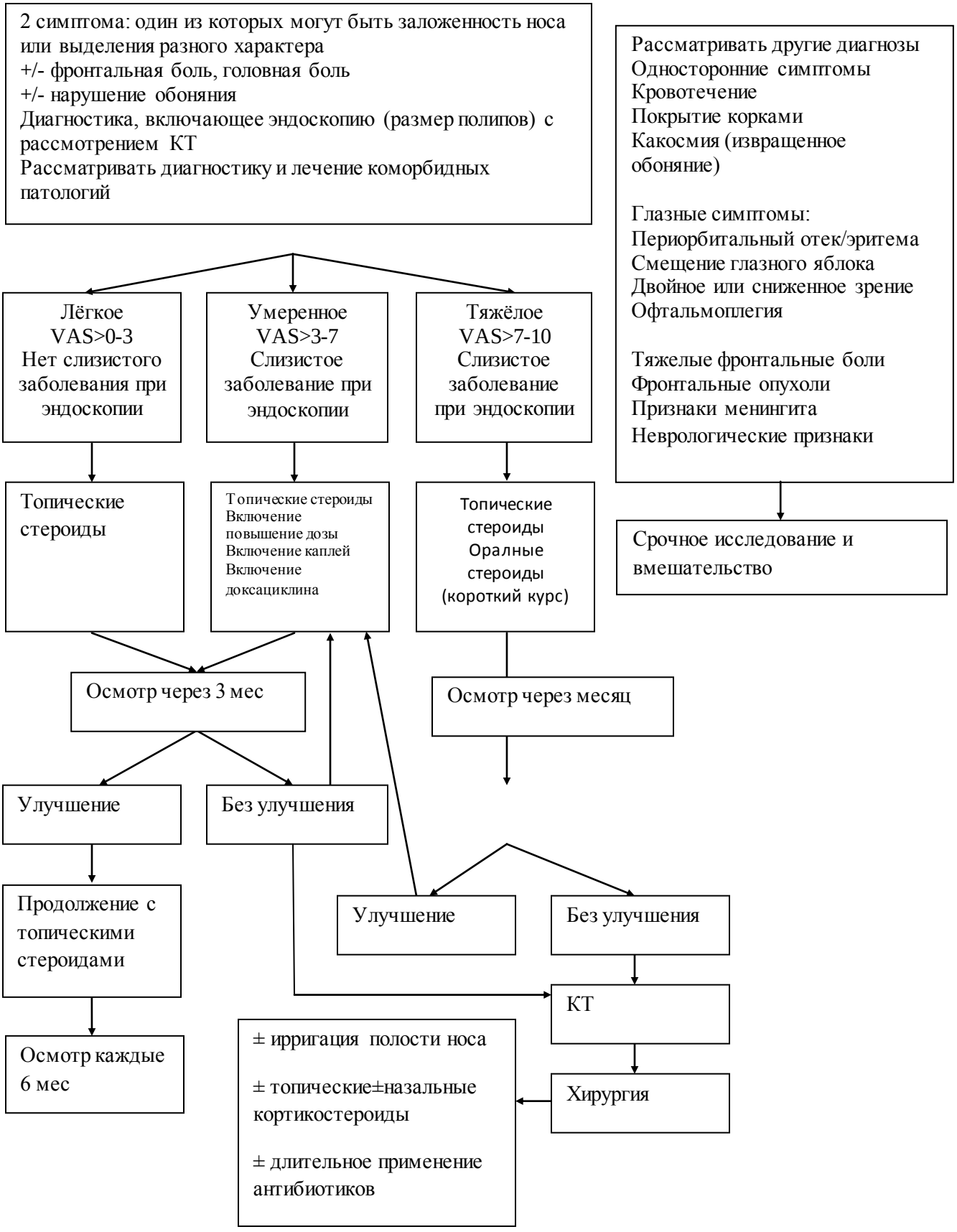
periods of remission in patients with CP repeatedly operated previously. Taking into account the modern principles of SIT permitting use only purified and standardized extracts and requiring strict observance of indications, contraindications and rules of its implementation, the use of the individual and not mass-produced vaccines should be viewed critically..

Conservative treatment and advice for patients CPRS (EPOS 2012)

Терапия	Уровень	Степень рекомендации	Уместность
Топические стероиды	Ia	A	Да
Оральные стероиды	Ia	A	Да
Оральные антибиотики с коротким сроком	Ib и Ib(-)	C	Да, малый эффект
Оральные антибиотики с длинним сроком	III	C	Да, особенно если IgE не повышен, небольшой эффект
Капсаицин	II	C	Нет
Ингибиторы протонного насоса	II	C	Нет
Аспирин десенсибилизация	II	C	Неясна
Фуросемид	III	D	Нет
Иммуносупрессанты	IV	D	Нет
Орошение носа соленым раствором	Ib, нет данных об одноразовом использовании	D	Да, для симптоматического облегчения
Топические антибиотики	нет данных	D	Нет
Анти IL-5	нет данных	D	Неясна
Фитотерапия	нет данных	D	Нет
Топические/оральные деконгестанты	нет данных об одноразовом	D	Нет

	использовании		
Муколитики	нет данных	D	Нет
Оральные антигистамины для аллергических пациентов	нет данных	D	Нет
Топические антимикотики	Ia(-)	A(-)	Нет
Системные антимикотики	Ib(-)	A(-)	Нет
Антилейкотриены	Ib(-)	A(-)	Нет
Анти IgE	Ib(-)	A(-)	Нет

Схема ведения больных ХПРС для ЛОР врачей (EPOS 2012)



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