



DIAGNOSIS AND TREATMENT OF CHRONIC RHINOSINUSITIS ACHAMY OF THE NASAL CAVITY MICROBIOME

Madaminova N.E.

Faculty of Advanced Training and Retraining of Doctors
Assistant of the Department of Otorhinolaryngology
Andijan State Medical Institute
Andijan, Uzbekistan

Article history:

Received: October 4th 2023
Accepted: November 4th 2023
Published: December 6th 2023

Abstract:

Since the mucous membrane of the nasal and nasal lateral cavities constitutes a single system, naturally, their protective function is determined by the state of colonization resistance and consists in the ability of microflora and macroorganism to jointly protect against pathogenic microorganisms. The previously existing opinion about the sterility of the nasal sacs is now recognized as dubious, after all, the nasal sacs are in constant direct contact with other parts of the upper respiratory tract, where a permanent microflora is located. It follows from this that microbiocenosis of the mucous membrane of the nasal and nasal lateral cavities and muconasal (local) immunity can be considered an integral structural-functional system of the body.

Keywords: visual analog scale, multispiral computed tomography, polymer chain reaction, glucocorticosteroids, mucosiliary transport, nasal barrier bias, vasomotor rhinitis.

RELEVANCE OF THE TOPIC. It is most acceptable to use the term "rhinosinusitis" to identify inflammatory pathologies of the nasal lateral spaces, zero almost always pathological changes in the mucous membrane of the sinuses are accompanied by similar signs in the nasal cavity.

Rhinosinusitis as a nosological form combines infectious (viral, bacterial, fungal) and non-infectious (traumatic, autoimmune, allergic) etiological diseases of various nasal cavities and nasal flare-ups. Rhinosinocytes occupy one of the leading positions in the structure of inflammatory pathology, regardless of the patient's age, climatic conditions in which they live and the standard of living.

Infectious rhinosinocytes are among the most common diseases, acute catarrhal sinusitis develops the most and is characterized by one of the signs of acute respiratory viral infection. Bacterial invasion in cavities is a complication of the viral process, with acute bacterial rhinosinusitis, up to 15% of adults and 5% of children get sick every year, however, in some cases, patients do not seek medical attention and, as a result of independent treatment, cause an increase in accurate indicators of the disease.

Chronic rhinosinusitis (SRS) remains the most common and painful clinical syndrome that characterizes persistent inflammation of the nasal cavity and nasal flare-ups, leading to nasal obstruction, rhinorrhea, pain in the face socket, and anosmia. SRS is usually classified according to the latest AAO-HNS recommendations, according to the presence or

absence of nasal polyps in endoscopy or visualization [1; C.65]. SRS accounts for 4.5-12% of the overall morbidity with respect to prevalence of the most common disease, and 0.5-4.3% of the small group of patients with nasal polyposis found in studies of axoli. In this, it is most common among men in Western countries, in old age and asthmatics.

According to the ePOS 2020 estimates (the European Position Paper on Rhinosinusitis and Nasal Polyps is the European positional cell for rhinosinusitis and nasal polyps), the prevalence of SRS averages 15.5% [5; C.64]. The wide range of data can be related to the design of the study, the age of the patients, the place of study. SRS is a serious problem for human health and has a negative impact on the quality of living of patients due to the deterioration of their overall morbidity and the restriction of their daily activity. Due to the large socio-economic losses, this problem is relevant for the health system of many countries

Currently, SRS is characterized by a multifactorial disease, changes in the microbiota, dysbalance of the immune system, allergens, toxins, hereditary predisposition may be the cause. Thanks to the improvement of diagnostic methods (in particular, sequencing technologies), in the last decade it became clear that microorganisms occupy a key place in the occurrence and distribution of licking at SRS, so they became one of the pressing problems in Otorhinolaryngology (Ryazantsev S.V., 2003; yu.K. Janov, 2002, 2007).



Diseases of the nasal passages (BYOB) are the most common pathology in Otorhinolaryngology, the development of which is massively added by the modern environmental situation, the prevalence of allergic and viral diseases, a decrease in local and general immunity. Many researchers are thinking that in recent years there has been a tendency to increase the incidence of chronic rhinosinusitis (SRS) worldwide, including chronic polyposis rhinosinusitis (SPRS). SPRS occurs mainly in patients over 30 years of age. A number of scientists suggest that men are more likely to be infected than women. Among those who seek a LOR doctor, patients with SPRS make up 5%.

Symptoms of the disease in SRS are maintained for up to 3 months, and X-ray changes are maintained for up to 4 months after treatment, when no signs of acute inflammation are observed in the ham.

Inflammatory diseases of the nasal cavity and nasal lateral cavities (BYOBs) occupy a place in the structure of chronic pathology of the LOR-organs. According to some scientists, there are several theories that underlie the transfection of the nasal cavity and BYOB mucosa into polyposis tissue. These are neurovegetative, allergic, viral, fungal, inflammatory and bshqa theories, however, they do not mention the etiopathogenesis of the formation and growth of polyps in the nasal cavity and BYOB. The leading role in the morphogenesis of polyps is played by recurrent serous inflammation, which often occurs against the background of allergic reactions. The microscopic structure of polyps will be similar to the swelling of the mucous membrane, which are signs of diffuse chronic productive inflammation: hyperplasia of the epithelial glands, retentive cysts, angiomas, signs of fibrosis, lymphoid infiltration. Depending on the weight of the Muay Thai component, adenomatous, glandular-cystic, epidermisable, angiomas and intermediate cell polyps are distinguished.

In the development of chronic purulent rhinosinusitis (SYRS), an important place is paid to the condition of the natural hole of the sinus, which provides aeration and drainage. The inflammatory process occurs in pathological changes in the socket of the orifice associated with the anatomical features of the intra-nasal structures, a chronic inflammatory process of the sinus mucosa occurs, which is accompanied by its structural changes. In the pathogenesis of SRS, pathological changes in the soxa – osteomeatal complex of the middle nasal passage occupy a leading place. The brevity and complexity of this soxa Anatomy is one of the most important risk factors in the development of SRS. Under such

conditions, the pathogen will be able to create a favorable mucosa for longer contact of microorganisms with the mucous membrane, as well as for its survival.

Chronic rhinosinusitis is defined as inflammation of the mucous membrane of the BYOB and nasal cavity, which lasts more than 3 months, it is during this period that, according to most scientists, irreversible pathomorphological changes develop in the mucous membrane and deep structures of the paranasal sinuses (EPOS 2012. 2020). As a rule, under the conditions of chronic inflammation of the lining of the BYOB, focussed or diffuse metaplasia of the multi-row cylindrical epithelium free of lashes occurs, damage to the epithelial floor to the descvamasia is observed, as a result of thickening of the basal membrane, swelling of the mucous membrane, hyperplasia of the goblet cells develops in the ham, the effectiveness of their mucosiliary transport is significantly reduced. The pathological process can be spread through the Gavers ' ducts to the top of the bone, which often leads to local osteitis.

The role of various predisposing factors and pathogenetic mechanisms in the development of SRS has not been clearly studied until the Hanus. It is considered that chronic inflammation of BYOB develops against the background of a violation of their ventilation as a result of blockade of the excretory pathways. In this regard, various variants and anomalies of the internal structures of the nose and the structure of the BYOB, in particular, the tilt of the nasal barrier, the bullez-altered middle nasal cell, the Galler cell and other variants of the development of the porous labyrinth, have a great advantage. The listed anatomical features can be determined using BYOB computed tomography, which is primarily used to determine the prevalence and nature of the pathological process.

THE PURPOSE OF THE STUDY. It consists in the development of an algorithm for the diagnosis and complex treatment of chronic rhinosinusitis, taking into account the condition of the nasal cavity microbiome.

MATERIAL AND METHODS OF RESEARCH. Based on the above goals and objectives, the scientific research work was carried out in the Otorhinolaryngology Department of the clinic of the Andijan State Medical Institute and in the Otorhinolaryngology Department of the multidisciplinary clinic of the Tashkent Medical Academy. Under our observation, there were 161 patients with chronic rhinosinusitis aged 18 to 70 years. Of the 161 patients, 140 were without chronic



rhinosinusitis allergy (SRS), while 21 patients had chronic rhinosinusitis allergy background (SRS+ar).

In addition, 20 healthy individuals aged 22-55 years, similar in sex and age, were examined, with no symptoms of acute respiratory diseases of the nose for 6 months in the ham without allergic and chronic conditions in their Anamnesis.

The analysis of lubricants from the nasal cavity was carried out in the bacterial Laboratory of the Andijan region railway workers ' clinic, as well as in the bacteriological Laboratory of the Tashkent Dental Institute.

In recent years, one-stop methods of determining the sensitivity of microbes to drugs have been developed by scientists (serial dilution method, disk method and x.k.). Among these methods, in many cases a special emphasis is placed on the disc-diffusion method, zero is convenient in the application of this method, is economically cumbersome and the results are accurate.

RESULTS OF THE STUDY. X-ray of the nasal lateral cavities was carried out in the forehead-nose and nose-jaw projections in patients with chronic damage to the nasal lateral, gaimor cavities (figure 3.8).

In the study of obzor X-ray in patients with a catarrhal form of chronic gaimoritis, in 75 cases a uniform decrease in the transparency of gaimor spaces was detected, in 36 cases – intensively, and in 24 cases – sharp shading,

X - rays of 56 patients with chronic purulent gaimoritis showed an uneven, 24 – even, 5 –intensively, 7 – a coastal decrease in the transparency of gaimor spaces.

Conical-beam computed tomography (KNKT) of the nasal and nasal lateral spaces allows color X-ray imaging of the nasal barrier structure in the frontal and axial planes (figure 3.8).

The study was conducted on a conical-beam computed tomograph of Galileo, Sirona (Germany) with the patient standing upright. No special preliminary screening was required. According to the results of the study, we were lucky with the maximum degree of deviation of the nasal barrier from the midline (in mm) in frontal and axial projections.

A distinctive feature of KNKT's work is that an X-ray tube that travels around the circumference of the patient's head makes cone-shaped radiation characteristic. It is such a form of radiation smoke that allows the object under study to occupy a large volume at the same time.

The radiation passing through the object is recorded during the examination, with a highly sensitive Matrix sensor located along the trajectory of the rotation. The beam energy is then converted to electronic signals, numbered, processed on a computer, and a virtual three-dimensional model of the scanned Sox is created. The three-dimensional reformat is then "cut" in layers in the form of axial incisions of a certain size, and stored in the memory of a single incision computer in the form of a file in DICOM format (which is the universal General Medical format where CT-viewers receive).

The most important advantage of conical-beam tomography is that it has much lower radiation than ordinary CT scanning. The sensitivity of this examination method is equivalent to computed tomography.

In our study, we used Ham to diagnose hamstring diseases of the nasal cavity and nasal lateral cavities, which are difficult to detect in a physical examination from KNKT.

The results of the detection of mucosiliary clierens of the nasal cavity in patients with SRS. The determination of mucosilliar transport function was carried out in all patients through the standard saccharin test. To compare the resulting indicators, healthy 20 kungilli without diseases of the nasal and nasal lateral cavities were obtained.

In patients with SRS, the transport function of the nasal cavity mucosa was 38.56 ± 0.04 minutes on average and 31.65 ± 0.61 minutes in patients with SRS+ar. In the control group, the rate was 11.54 ± 1.46 minutes. It cannot be denied that the indicators of the results obtained are also influenced by pathological changes in the anatomical structures of the nasal cavity.

We determined the change in the concentration of hydrogen ions (nasal separation rn) using a special indicator paper. The RN value detected in the nasal cavity is more reliably predicted than the RN value determined after removing the nasal mucosa from the nasal cavity. The nasal separation separated from the nasal cavity quickly loses is gas, which leads to a significant shift of the active reaction to the acidic direction.

In patients with SRS, the concentration of hydrogen ions in the nasal mucosa averaged 6.41 ± 0.02 , in patients with SRS+ar 6.73 ± 0.02 , and in the control group 7.01 ± 0.03 . The data obtained indicates a change in the concentration of RN hydrogen ions of the nasal cavity mucosa in patients with chronic rhinosinusitis. In addition, RN acid shift is characteristic.



Attention was also paid to the study of the absorption and separation functions of the nasal mucosa, the results of which are presented in the table.

In patients with SRS, the blackout response time averaged 80.31 ± 4.02 minutes, in patients with SRS+ar 76.39 ± 4.05 minutes, and in the control group 68.29 ± 0.63 minutes. The results obtained indicate a violation of the absorption function of the nasal cavity mucosa in patients with chronic sinusitis.

We also paid great attention to the examination of the separation function of the nose. After examination of patients with SRS, the sharik weight was 55.74 ± 0.81 mg on average, 61.64 ± 0.89 mg in patients with SRS+ar, and 41.25 ± 0.77 mg in the control group. The study shows that in patients with SRS, the transport function of the nasal cavity in the mucous membrane is impaired, RN changes, the absorption function is stretched, the secretory activity increases due to the increased separation function. In patients with chronic sinusitis, the indicator of the separation function of the nasal cavity mucosa or secretory activity increases. This means that there is a role in the hyperproduction of mucous and goblet cells, as a result of which the xylpylating affects the function of the epithelium and lysozyme activity, which significantly ensures the content of nasal mucosa chymoya.

The analysis of the literature and the results of our study showed that in the presence of a pathology accompanied by a violation of the respiratory capacity of the nasal cavity during a significant period of the disease, the transport function of the mucous membrane of the nasal cavity decreases.

It is known that the climate of our republic negatively affects the functional state of the mucous membrane of the upper and lower respiratory tract. Taking this into account, we had to choose the least traumatic, optimal method of surgical treatment. In this, we were helped by the examination of mucosiliary transport.

Thus, a functional examination of the nose carried out showed that at SRS, the transport function is impaired, RN changes, the time of the absorption function is stretched, the secretory activity increases due to the increased separation function, which causes the disease to recur.

CONCLUSIONS.

1. In patients with SRS and SRS+ar, increased pathogenicity of staphylococci detected in the nasal cavity, i.e. a sharp increase in plasmacoagulase, fibrinolysin, lecithinase and antilozosim, as well as decreased lysosomal titer from immunological status

indicators, increased neutrophil phagocytar activity, increased IGA.

2. A 16rrna gene assessment of the phylogenetic diversity of microflora in patients with chronic rhinosinusitis found increased levels of pathogenic microflora and decreased commensal microflora in patients with SRS and SRS+ar.

3. The use of pathogenetically based clinical-diagnosis and treatment algorithms in patients depending on the SRS night and the condition of the nasal cavity microflora leads to an increase in the effectiveness of treatment, a decrease in the number of relapses and their rapid recovery.

LITERATURE USED:

1. Abdulazizov F., Vohidov U., Khasanov U. The role of ozone therapy in the complex treatment of chronic purulent frontitis //Stomatologiya. – 2013. – Vol. 1. – №. 3-4 (53-54). – Pp. 99-102.
2. Averbukh V. M., Svistushkin V. M. Therapeutic tactics in chronic rhinosinusitis //Breast cancer. – 2014. – Vol. 22. – No. 9. – pp. 648-649.
3. Artyushkin S. A., Eremina N. V. New active elimination-irrigation intranasal therapy as a pathogenetically justified method of prevention and treatment of recurrent and chronic rhinosinusitis //Russian Bulletin of Perinatology and Pediatrics. – 2020. – vol. 65. – No. 4.
4. Vasilenko I. P. et al. Cycloferon as a means of anti-relapse therapy in patients with chronic hyperplastic sinusitis //Antibiotics and chemotherapy. - 2013. – Vol. 58. – No. 7-8.
5. Vasilyeva N. I. Features of the use of topical antibacterial drugs in the treatment of inflammatory diseases of the nasal cavity, nasopharynx and paranasal sinuses in children //Issues of modern pediatrics. – 2012. – vol. 11. – No. 5. – pp. 142-148.
6. Vishnyakov V. V., Ivanchenko O. A. Chronic rhinosinusitis: pathogenesis, diagnosis and principles of treatment:(clinical recommendations)/[Arefieva ON et al.]; ed. AS Lopatina; Russian Society of Rhinologists.— Moscow: Practical Medicine, 2014.-64 p. ISBN 978-5-98811-288-4. – 2014.
7. Vorobyova A. A. Clinical, anatomical, bacteriological and genetic features of chronic bacterial and polypous ethmoiditis //Moscow. – 2014. – p. 005550348.
8. Voronina O. L. et al. Features of the microbiome of the respiratory tract of patients with cystic



- fibrosis //Biochemistry. – 2020. – vol. 85. – No. 1. – pp. 3-14.
9. Garayutina O. I., Bravagin I. V., Rafalsky V. V. Cytokine production in patients with chronic rhinosinusitis during therapy with 14- and 16-membered macrolides //Bulletin of the Smolensk State Medical Academy. – 2015. – Vol. 14. – No. 4. – pp. 42-48.
 10. Goncharov A. G. et al. The role of microbiota in the pathophysiological mechanisms of allergic rhinitis formation: an overview //Bulletin of the Baltic Federal University named after I. Kant. Series: Natural and Medical Sciences. – 2020. – No. 3. – pp. 100-121.
 11. Hoffman V. R., Smirnov V. S. The state of the immune system in acute and chronic diseases of the ENT organs //Immunodeficiency conditions. – 2000. – pp. 163-187.
 12. Doroshenko O. V. The main provisions of the Canadian recommendations for the diagnosis and treatment of chronic rhinosinusitis 2011 //Diseases and antibiotics. - 2013. – No. 1. – pp. 72-80.
 13. Zavaliy M. A. The role of the microbial factor in the etiopathogenesis of purulent rhinorhinosinusitis and its diversity //Otorhinolaryngology. Eastern Europe. – 2014. – №. 3. – Pp. 26-40.
 14. Kasimova S. A. Pathogenetic methods of therapy of chronic rhinosinusitis in pregnant women //Re-health journal. – 2020. – №. 2-1 (6). – Pp. 32-35.
 15. Kirichenko I. M., Kozlova N. S. Modern approaches to the diagnosis and treatment of acute rhinosinusitis //RMZH. – 2021. – Vol. 29. – No. 3. – pp. 34-38.
 16. Kosyakov S. Ya., Angotoeva I. B. Acute respiratory infections in the practice of an otorhinolaryngologist //Medical Council. – 2013. – №. 7. – Pp. 26-31.
 17. Kryukov A. I. et al. Complex therapy of chronic maxillary sinusitis //Medical advice. – 2015. – №. 3. – Pp. 18-23.
 18. Kurbacheva O. M., Amanturlieva M. E. The role of the barrier function of mucous membranes in allergic diseases and in sublingual allergen-specific immunotherapy //Bulletin of Siberian medicine.- 2017.- Vol. 16.- No. 2.-pp.32-46.
 19. Lopatin A. S. Treatment of chronic rhinosinusitis: in search of alternative methods //Medical business. – 2018. – №. 3. – Pp. 18-24.
 20. Madaminova N. E. et al. Assessment of the quality of life in patients with chronic rhinosinusitis //A new day in medicine. - 2020. – No. 4. – pp. 438-440.
 21. Malygina L. V., Denisova O. A., Radzig E. Y. Method of taking material for microbiological examination in patients with various forms of sinusitis //Bulletin of the Russian State Medical University. - 2015. – No. 1. – pp. 31-33.
 22. Melnikov V. G., Kombarova S. Yu. The problem of decolonization of nasal carriers of Staphylococcus aureus from the point of view of a microbiologist (literature review) //Clinical laboratory diagnostics. – 2019. – vol. 64. – No. 11.
 23. Morozov A.D., Kumysheva M. M. Determining the tactics of perioperative treatment of diseases of the nasal cavity //Russian otorhinolaryngology. – 2014. – №. 1 (68). – Pp. 153-157.
 24. Nesterova K. I. Low-frequency ultrasound technology of non-functional treatment of purulent rhinosinusitis //Omsk scientific bulletin. – 2014. – №. 2 (134). – Pp. 22-25.
 25. Nesterova K. I. Respiratory fluoroquinolones in the treatment of chronic purulent rhinosinusitis: clinical and economic assessment //Russian otorhinolaryngology. – 2012. – No. 5. – pp. 167-173.