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MANAGEMENT FEATURES OF PATIENT WITH BRONCHIAL ASTHMA AND ACUTE EXACERBATION OF CHRONIC SINUSITIS BY VACUUM DRAINAGE AND WEBER'S DOUCHE

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Abstract

Pathologies of the upper and lower airways are inextricably connected. Good results cannot be achieved in the treatment of bronchial asthma on the background of aggravation of chronic process in the paranasal sinuses. Pathological secretion flowing down the rear wall has a negative effect on lower respiratory tract, that is a factor in the risk of attacks of breathlessness. What should we do in such cases? In case of the development of uncontrolled asthma, the patients are hospitalized in the therapeutic department. Consultation of the otolaryngologist is required, who has a specific task to sanitize the nose and paranasal sinuses. Vacuum drainage method (IaMIK sinus catheter) is ideal for this task. Weber's douche with the help of the nasal irrigator by "Endomedium⁺" can effectively wash the nose and nasal passages, even in severe deformation of intranasal structures. Using two methods, one can create a more peaceful conditions of bronchial asthma.

Keywords: Bronchial asthma, sinusitis, sinus, IaMIK catheter, Weber's douche.

Introduction:

Staff responsible for the pathology of the respiratory system is a pulmonologist and otolaryngologist [1]. Anatomically, lower respiratory tract is directly connected with the upper one. Ideally, when both specialists manage the patients with asthma and nasal pathology. Doses of drugs for the treatment of asthma directly depend on the situation in the nose and paranasal sinuses. Significant changes in otorhinolaryngology occurred after the practical implementation of endoscopic diagnostic methods in combination with irrigation therapy. A new equipment has been designed to carry out diagnostic and treatment activities at a higher level, but unfortunately, there is a shortage of doctors, especially "narrow" specialists [4]. Otolaryngologist admits a large number of patients, performs surgeries

and has in addition to find the time for endoscopy and irrigation therapy. The operation of ENT dressing room was organized so that the patients of therapeutic department could have all necessary procedures performed in full, including on Sundays and holidays [5].

Materials and Methods: During 2010-2016, 147 patients diagnosed with bronchial asthma were treated in the therapeutic department. Sixty-two of them were men, and 85 - women aged from 16 to 69 years. ENT examination was carried out in the outpatient department No.2 of GAHCI DCH No.2, treatment procedures were carried out in the ENT hospital office. Clinical examination included assessment of therapeutic status and ENT-examination. Additional research methods: X-ray examination of the lungs and, if necessary, the paranasal sinuses, spirometry, peak flow meters, rhinocytogram, and microscopy of bronchial sputum.

Patients admitted through the emergency room were examined by therapist and ENT specialist. All patients had partly managed or unmanaged asthma. Surgical treatment included inhalation nebulized bronchodilator (Salbutamol 7.5-15 mg/day and/or ipratropium bromide 1-1.5 mg/day), the indicated inhalation glucocorticosteroid (Budesonide 500-1500 mg/day, depending on the severity of the disease), also through a nebulizer, or systemic corticosteroids (Prednisone 90-120 mg/day, parenterally short courses), and oxygen therapy [3,7]. ENT tactics depended on the findings in the nasal cavity, and the patients were divided into three groups.

1. No bronchial asthma and/or ENT diseases - 80 patients.
2. Bronchial asthma, chronic polypoid process without exacerbation - 57 patients.
3. Bronchial asthma, exacerbation of chronic purulent sinusitis and polypous-purulent sinusitis - 10 patients.

A nurse was responsible for the preparation of the patient for examination. Prior to the process of Weber's douche the nasal mucosa should be treated with nasal decongestant, preferably spray. After 5-7 minutes, the patient is ready to undergo the Weber's douche. The unit is charged with 200.0 ml bottle of NaCl, the solution temperature - 36⁰C. It is important that the Weber's douche would not cause discomfort. The volume of fluid supplied to an adult patient is 200 - 300 ml per minute. The patients themselves control the operation of the machine using a pneumopedal and, in case of any discomfort, can simply turn off the device. A nurse can change the volume of the liquid medium, making it more comfortable. The unit delivers minimum 10 ml, maximum - 750 ml per minute. Thus, the device provides for effective rinsing of the nose both in the child and in the adult. Once the patient is prepared for endoscopy, it is necessary to ask him/her to breath intensively for 2-3 minutes with a nose, which will reduce the amount of moisture in the nose, and the endoscope lens will be fogged less. For nasal and nasopharyngeal endoscopy, the front and 30⁰

endoscopes with diameter of 2.7 mm were used. Previously, these endoscopes were considered applicable for children and were not used for adults. The principal difference of using the 2.7 mm endoscope is that its small diameter allows for inspection even in severely deformed intranasal structures, and the angular optics of 30° allows for the view of areas lying away from the line of the endoscope movement. The endoscopy helps solving the question of the possibility of IaMIK procedure [2]. IaMIK principle of operation is to create negative pressure in the nasal cavity, resulting in the release of pathological secretion from the paranasal sinuses into the nasal cavity. Fig. 1. Following our experience, the correctly performed procedure of IaMIK sinus catheterization requires no additional analgesia in the nose, therefore, 10% lidocaine spray was not used. Pressure load that occurs during catheter operation did not allow for its daily use, so the next day the nose and paranasal sinuses were washed using a Weber's douche device [6]. Inspection of the pharynx and ears was conducted according to the established procedure. Endoscopic examination provided for thorough examination of the key areas and identification of the presence of polypoid and inflammation processes in the paranasal sinuses.

Results.

The patients of group 1: were basically treated for bronchial asthma, by usual method.

The patients of group 2: received basic therapy, additional daily Weber's douche 200.0 mL NaCl 0.9% t-36.0, the volume of fluid flow varied from 250 to 310 ml per minute. Subjectively, the patients reported a reduction in viscosity and quantity of mucus flowing down on the back wall. After discharge, recommendations for surgery at the ENT specialist routinely.

Patients of group 3, in addition to basic therapy, were prescribed the antibacterial drug cephalosporin, III generation ceftriaxone, at a dose of 2 g/day. In parallel with the main treatment, the conservative treatment at ENT specialist was conducted. Procedures of IaMIK sinus catheter and Weber's douche were alternated. The effect of topical treatment was observed in 2-3 day. Endoscopic control was carried out in a day. Reduction in swelling of the nasal mucosa has been observed, and, as a result, nasal breathing has improved. Discharge amount also decreased and, which is very importantly, pathological secretion became less viscous. Sanitation of the paranasal sinuses has significantly increased the efficiency of the treatment of the underlying disease. Purulent secret and thick mucus entering the nasal passages and flowing down the back wall of the bronchi irritate the trigger zones and cause coughing. We can say that the less pathological secretion in the sinuses is, the fewer patients complain of coughing and the symptoms of asthma.

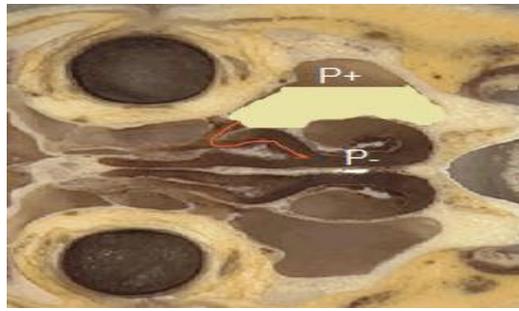


Fig. 1. Changes in pressure in the nasal cavity lead to the sinus sanitation



Fig. 2. Nasal cavity irrigator (Endomedium⁺).

Conclusion

A specialized treatment according to the profile of the hospitalization department, is not always effective. The pulmonologist cannot succeed without the help of ENT specialist operating the modern methods. IaMIK procedures should be conducted by trained otorhinolaryngologist. The apparent ease of carrying out the procedure has led to the fact that many have doctors prescribed and performed IaMIK treatments in patients with sinusitis without getting the expected results. More than 13 years of own experience in conducting IaMIK treatments showed that this method is effective in the right hands. The only thing that should be noted is that the procedure must be performed by a doctor and takes time of about 20-30 minutes per patient. Weber's douche is more simple in execution, and is carried out by a trained nurse and lasts for 2-4 minutes. The sinus sanitation allowed us to achieve control over bronchial asthma in a shorter time.

Summary

1. The respiratory system is a uniform one, therefore, patients with asthma should be examined by professionals such as a therapist (lung specialist) and otolaryngologist.
2. ENT examination will be more informative if the nose and nasal endoscopy is preceded by Weber's douche procedure. Endoscopic examination in this case will be more effective, as the slimy secret hampers seriously the inspection.
3. An effective treatment of asthma is possible only after sanitation of the upper respiratory tract.

4. Daily nasal douche, conducted in the patients of group 2, allowed us to reduce the amount of mucus in the nasal cavity.

5. IaMIK sinus catheter is an effective non-invasive method of treatment that allows for sanitation of all the paranasal sinuses.

6. The patients with acute exacerbation of purulent sinusitis had milder progress of asthma on the background of the IaMIK procedures (a reduced number of "day and night" symptoms, which allowed us to reduce the dose of basic therapy preparations and leave "a step below").

7. The Weber's douche of the nasal cavity via an irrigator is a simple and effective procedure that should be performed in all patients with an excessive amount of abnormal nasal secretions, including on weekends and holidays.

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