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Improving Conservative Treatment for Adhesive Tubohepatitis

Qosimov Mirkamol Erkinboy o'g'li
Samarkand State Medical University, Department of Otorhinolaryngology No. 2, 1st year clinical resident

Khayitov A. A.
Associate Professor, Department of Otorhinolaryngology No. 2, Samarkand State Medical University

Abstract: Eustachitis is an inflammation of the mucous membrane of the auditory tube. It can be acute and chronic, unilateral and bilateral. Some researchers believe that damage to the auditory tube alone is almost impossible: the middle ear, that is, the auditory tube, the tympanic cavity and the mastoid process are usually involved in the inflammatory process in one way or another. Due to this combination, eustachitis is also called secretory (exudative) otitis media. Other synonyms: tubo-otitis, salpingo-otitis, otosalpingitis, catarrh of the eustachian tube and tubotympanitis [11]. Eustachitis occurs in people of any age, but is more common in children, since their auditory tube is shorter and wider.

Key points: Eustachian tube in adults and children, Causes of Eustachitis.

Typically, disturbances in the functioning of the auditory tube occur due to acute and chronic diseases of the nose (sinusitis, pharyngitis, tonsillitis and laryngitis), as well as allergic and vasomotor rhinitis. This inflammatory process is ascending.

Respiratory viruses play a major role in the development of acute rhinosinusitis: rhinovirus, influenza virus, and parainfluenza virus. They are found in more than 50% of patients with acute rhinosinusitis [1].

Bacterial rhinosinusitis is often a complication of viral infection. Common pathogens include pneumococcus, Haemophilus influenzae, and Moraxella catarrhalis. Furthermore, the first two agents account for approximately 75% of acute bacterial rhinosinusitis [2].

A descending path of damage is also possible, for example with otitis media. In this case, the infection enters through an opening in the middle ear.

The cause of the development of Eustachitis can be neuromotor and vegetative-vascular diseases, injuries, benign and malignant tumors (for example, polyps or nasal carcinomas), foreign bodies in the auditory tubes and border structures, diseases of the temporomandibular joint, enlarged adenoids, chronic infectious granulomas, hereditary diseases, deviation of the nasal septum and gastroesophageal reflux (this is especially characteristic of people with low pharyngeal openings of the auditory tubes). Also, tubo-otitis can develop with specific inflammatory diseases (tuberculosis , syphilis , diphtheria , scleroma and leprosy) [3] .

Symptoms of Eustachitis

Inflammation of the mucous membrane is accompanied by swelling and accumulation of fluid (transudate), which closes the lumen of the tube. This can also lead to impaired barofunction, that

is, the pressure in the middle ear cavity decreases, leading to the appearance of congestion - the main complaint when eustachitis is suspected.

Other symptoms include:

a. hearing loss;

b. autophony (increased hearing of one's own voice in the affected ear);

c. feeling of fullness in the ear;

d. a feeling of fluid pouring down the affected side;

e. tinnitus.

If the cause of Eustachitis is rhinitis or other inflammation of the upper respiratory tract, symptoms may develop within a few hours or a few days after the onset of the underlying disease. It all depends on the severity of the initial inflammation.

Pathogenesis of Eustachitis

The auditory tube, or Eustachian tube, is a cavity made partly of bone and partly of fibrocartilage that connects the middle ear with the nasopharynx. Its main function is ventilation. When atmospheric pressure changes, the auditory tube opens, which equalizes the pressure in the middle ear. For example, when an airplane takes off and reaches a higher altitude, the atmospheric pressure decreases. This decrease puts pressure on the eardrum, increasing the volume of the middle ear. Air is drawn in through the auditory tube to equalize the pressure in the middle ear. When the airplane descends, the atmospheric pressure increases, again displacing the eardrum, thereby compressing the air in the middle ear.

The same phenomenon occurs with divers: when they dive into the ocean, the hydrostatic pressure that occurs in a descending aircraft increases [4] .

The auditory tube also performs other functions:

drainage - ensures the outflow of secretions from the middle ear into the nasopharynx;

protective - protects the middle ear from infection, pressure changes, and noise exposure;

acoustic - maintaining the necessary pressure in the middle ear, preventing sound conduction disorders and hearing loss.

If malfunctions occur in the functioning of the auditory tube, various pathological processes occur that cause discomfort and worsen the quality of life.

When an infection or allergen enters the auditory tube, it damages the ciliary epithelial cells, thereby disrupting its protective and drainage functions. Inflammation or mechanical obstruction (for example, adenoiditis, nasal polyps, etc.) leads to a decrease in the patency of the pharyngeal opening of the auditory tube and a decrease in air pressure in the middle ear. In this case, the eardrum is pulled back, reducing its mobility and the mobility of the entire chain of auditory ossicles.

Ciliated epithelial cells

An effusion (fluid) forms in the middle ear, the outflow of which is difficult due to impaired drainage function.

Classification and stages of development of eustachitis

According to the International Classification of Diseases, 10th edition (ICD-10), there are:

H 68. Inflammation and blockage of the auditory (Eustachian) tube.

H 69.9 Disorder of auditory (Eustachian) tube, unspecified.

Depending on the course of the pathological process, eustachitis can be:

acute - characterized by sudden onset and pronounced symptoms, often associated with infections;

chronic - develops over a long period of time and is often the result of untreated acute inflammation or prolonged exposure to adverse factors.

Taking into account the characteristics of pathological changes, doctors distinguish the following:

vasomotor eustachitis (neurovegetative, allergic form) - develops as a result of a disorder of the autonomic nervous system, in some cases under the influence of allergic factors, sometimes the disease occurs as a combination of both phenomena [3] ;

adhesive eustachitis - inflammatory changes lead to the formation of adhesions that disrupt the patency of the auditory tube and the mobility of the auditory ossicles;

hypertrophic eustachitis - associated with an increase in mucous membrane;

Atrophic eustachitis - develops as a result of thinning of the mucous membrane.

Stages of Eustachitis:

a. catarrhal - the auditory tube cannot perform its ventilation function, so negative pressure is created in the middle ear;
b. exudative (secretory) - fluid begins to accumulate;
c. mucous membrane - the fluid becomes thick and viscous (turns into a transudate);
d. fibrinosis - scars and adhesions are formed, which is an unfavorable moment for the further condition of the ear and hearing.

Complications of Eustachitis

Neglected, untreated eustachitis can lead to the following unpleasant consequences:

Acute catarrhal otitis media is an inflammation of the mucous membrane of the middle ear, which causes severe pain in the ear. It usually develops when viruses enter. In this case, eustachitis is the initial stage of otitis media.

Acute exudative otitis media is a collection of mucus in the middle ear. Due to poor ventilation and decreased pressure in the middle ear, the mucous membrane produces more mucus. At the same time, the drainage function is also impaired. In this case, the fluid can remain in the middle ear for a very long time (sometimes up to several months).

Acute purulent otitis media - the course and symptoms are similar to catarrhal otitis, but the causative agent is usually bacteria.

Chronic adhesive otitis media - prolonged and chronic eustachitis can lead to the development of adhesions in the middle ear. Adhesions lead to permanent impairment of the mobility of the auditory ossicles and hearing loss. Also, in some areas of the eardrum, due to adhesions, thinning and excessive stretching are formed - retractile pockets that can develop into perforation of the eardrum at any time.

a. Irreversible hearing loss.
b. Continuous subjective tinnitus.
c. Eardrum perforation
d. Eardrum perforation

Also, patients with chronic eustachitis experience severe discomfort during flights.

Diagnosis of Eustachitis

First of all, the otolaryngologist will clarify all the patient's complaints and collect anamnesis (medical history). He will be interested in how long ago and against what background the symptoms

appeared, whether there were flights, deep dives, inflammation of the upper respiratory tract, etc. If the patient took any medications before going to the hospital, he must inform the doctor about this.

The main diagnostic method is a complete examination of the ENT organs. All other examinations are individual, but they are often performed and prescribed.

Otoscopy (examination of the ears) with eustachitis shows a retracted eardrum, a blurred (flattened) light contour, and visible dilation of blood vessels on its surface.

Otoscopy

However, to accurately diagnose the pathology of the auditory tube, sometimes a comprehensive examination of the ENT organs is required. For example, the doctor may prescribe an endoscopic examination of the nasopharynx, which will show in more detail the condition of the mucous membrane and the accompanying changes, which will allow you to exclude neoplasms in hard-to-reach areas.

Subjective diagnostic methods:

Measuring spoken and whispered speech. Typically, a person can hear whispered speech at a distance of 6 meters, and spoken speech at a distance of more than 6 meters. With eustachitis, the whispering speed is usually reduced.

Valsalva maneuver and Toynbee maneuver. In the first case, the patient takes a deep breath, pinches his nostrils, closes his mouth and tries to breathe through his nose. In the second, the person first pinches his nose, then takes a sip. At this time, the doctor uses an otoscope or endoscope to observe the mobility of the eardrum. If everything is normal, the patient will hear an invisible crackling sound in the ears. If the auditory tubes are blocked, congestion, buzzing, wheezing, noise and noise occur.

Politzer's ear canal inflation. The doctor inserts an olive from a balloon designed for insufflation into the patient's nose (first from one side, then from the other) and presses the wing on the nasal septum from the other side. The patient pronounces the word "vaporizer" in syllables, and on the syllable "hod" the doctor squeezes the balloon, thereby starting the flow of air through the nose [6]. If there is mucus in the nasal cavity, insufflation is not performed, since under pressure it can enter the ear canal and aggravate the course of the disease.

Tuning fork study:

Weber's experiment - the leg of a bass tuning fork that produces sound is placed in the middle of the crown: with normal hearing, the sound of the belt is detected in the middle of the head or in both ears, with damage to the outer and one-sided middle ear, the diseased ear hears well, with damage to the inner ear, the healthy ear hears well;

Rinne's experiment - the stem of the tuning fork is placed in the mastoid process (behind the ear); when the patient stops perceiving vibrations, it is brought to the external auditory canal: with normal hearing or damage to the inner ear, the tuning fork is still audible for some time, with damage to the outer and middle ear - vice versa;

Schwabach experiment - the leg of a sound-emitting plug is placed in the middle of the crown or mastoid process and the duration of sound reception is checked (the method is intended to diagnose conductive hearing loss, which is characteristic of eustachitis) [7].

Objective diagnostic methods:

Impedanceometry - shows changes in pressure in the tympanic cavity, fluid accumulation, etc. (this is the main method for monitoring diagnostics and treatment in children);

audiometric examination - eustachitis is characterized by conductive hearing loss, that is, it is associated with impaired sound conduction;

X-ray or computed tomography of the paranasal sinuses;

swabs from the nose and throat for flora and sensitivity to antibiotics (for purulent otitis, swabs are also taken from the ears);

general blood test - helps determine the nature of the inflammation (allergen, virus or bacteria).

Eustachitis treatment

Timely treatment of the disease is very important, since chronic eustachitis and its changes in the middle ear gradually form permanent disturbances of sound conduction, which become chronic after 3 months from the onset of the disease, so it is very difficult to completely cure them. It is important to restore the ventilation function of the auditory tube as soon as possible to prevent the development of hearing loss and eliminate the need for more serious interventions [5].

The most important point in the treatment of Eustachitis is the elimination of acute and chronic foci of infection of the ENT organs and the restoration of nasal breathing. If the cause of Eustachitis is enlarged adenoids or other localized formations, they should be removed in a timely manner. In case of deviation of the nasal septum, septum plastic surgery is performed first.

In general, the following methods of treating eustachitis are distinguished:

a. drug treatment;

b. catheterization of the auditory tubes;

c. blowing the auditory tubes;

d. vibration massage of the eardrum (pneumomassage);

e. physiotherapeutic treatment;

f. kinesitherapy (therapeutic gymnastics);

g. surgical treatment [8].

Drug therapy includes vasoconstrictors and mucolytics. According to the indications, antihistamines, anti-inflammatory, antibacterial, immunomodulatory and restorative agents, as well as inhaled glucocorticosteroids and local warming agents for the ear (for example, turunda with boric alcohol) can also be prescribed. Alcohol turundas are an effective tool for complex treatment, but they can be used only as prescribed by a doctor, since their use can be dangerous if there are certain contraindications.

When choosing vasoconstrictors, you should give preference to preparations based on active ingredients such as Oxymetazoline, Xylometazoline and Phenylephrine.

Among mucolytic drugs, preference is given to preparations based on Carbocysteine, Acetylcysteine, and Ambroxol. Herbal preparations with secretolytic, secretomotor, and anti-inflammatory effects are also effective in the treatment of Eustachitis (for example, Sinupret, Respero Myrtol Forte).

Catheterization of the auditory tubes is performed when primary drug therapy is ineffective. The most commonly used are vasoconstrictors (for example, 0.05 or 0.1% solution of Naphthyzinum) and glucocorticosteroids (Dexamethasone, Dexazone, Solu-Cortef). The latter are used in the form of an injection solution, since the powder form (suspension) can negatively affect the functioning of the ciliary epithelium of the auditory tube [9]. Proteolytic enzymes and mucolytics are rarely used.

If there are no contraindications, the doctor often prescribes a course of treatment: Politzer blowing and pneumomassage of the eardrum. On average, 5-10 sessions are required.

Physiotherapy includes endaural electrophoresis of enzyme preparations, magnetic laser and ultra-high frequency therapy (UHF is currently not recommended, but sometimes practitioners resort to this method of therapy).

Therapeutic exercises are a very effective addition to treatment. The complexes include certain movements of the head, lower jaw and tongue. Various options for self-inflation of the auditory tube

(Toynbee and Valsalva maneuvers) are also added to them. Gymnastics, such as Politzer blowing, should be performed only with a clean nose, so as not to throw mucus into the auditory tubes.

An example of therapeutic exercises:

Move your tongue back and forth, using maximum force as you move forward. Keep your mouth wide open during this time.

Open and close your mouth wide, placing the tip of your tongue on your lower teeth.

You need to tilt your head back slightly, open your mouth slightly, press the tip of your tongue to the lower incisors and move your lower jaw: forward, backward, imitating chewing.

After blowing your nose thoroughly, close your nose with your fingers and try to breathe through it.

"Relieve pressure" in the ears by blowing on your own, doing exercise number 3.

All exercises should be done while sitting, keeping your head in a comfortable position. Gymnastics should be performed once a day for 5 minutes. Self-cleaning is performed 6-8 times a day.

Surgical treatments include tympanopuncture, shunting, myringotomy, tympanotomy, laser intervention, and balloon dilation of the auditory tube. They are performed for specific indications (for example, with persistent exudative or purulent otitis media).

Balloon dilation of the auditory tube is a microsurgical method for the treatment of tubular dysfunction and chronic middle ear pathology. The balloon is filled with saline and inserted into the pharyngeal opening of the auditory tube using a syringe-manometer, after which the balloon is inflated. The injection is maintained for 2 minutes. At this time, the cartilage of the auditory tube becomes pale and its walls thicken. When the catheter and balloon are removed, the mouth of the tube opens.

List of used literature:

1. Mamatkulov Shekhruz Bahadirovich , R. K. A. qizi, (2024) “Modern Views on the Origin and Treatment of Ozena’s Disease ”, EUROPEAN JOURNAL OF MODERN MEDICINE AND PRACTICE, 4(2), pp. 481–485.
2. Abdurashidov Asilbek Abdurashidovich , R. K. A. qizi ,. (2024). MODERN INTERPRETATION OF THE ORIGIN AND TREATMENT OF SYMPTOMS OF LARYNGITIS . International Journal of Integrative and Modern Medicine, 2(3), 49–52.
3. Pirimqulov Jumaniyoz Ravshan o‘g‘li , R. K. A. qizi ,. (2024). Diagnosis of Odontogenic Sinusitis. American Journal of Pediatric Medicine and Health Sciences (2993-2149), 2(4), 152–157.
4. Rasulova, K. (2023). TREATMENT AND PREVENTION OF FUNGAL RHINITIS AND ALLERGIC RHINITIS. Science and innovation, 2(D10), 150-154.
5. Maqsud, M. (2024). Significance of Diagnosis of Nystagmus in Miner's Disease. EUROPEAN JOURNAL OF MODERN MEDICINE AND PRACTICE, 4(2), 214-217.
6. Sayfullayeva Asila Abdulla qizi, R. K. A. qizi ,. (2024). Age-Related Characteristics of Vestibular Neurons. International Journal of Integrative and Modern Medicine, 2(4), 53–56. Retrieved from https://medicaljournals.eu/index.php/IJIMM/article/view/239
7. Расулова, К. А., & Насретдинова, М. Т. (2022). ҲАЛҚУМДАГИ ЗАМБУРУҒЛИ ЗАРАРЛАНИШНИНГ САМАРАЛИ ДАВОЛАНИШИНИ БАҲОЛАШ. Биология ва тиббиѐт муаммолари, (2), 135.
8. Ашуров, З. Ш., & Усербаева, Р. К. (2022). Влияние тревожности и депрессии у матерей на эффективность воспитания подростков, основанного на технике повышения осознанности (mindfulness).

9. Rasulova, K.A. (2023). Treatment and Prevention of Otitis or Ear Inflammation. SCHOLASTIC:Journal of Natural and Medical Education,2(10), 322-325.
10. Alimova, O., Karabaev, A., & Kim, O. (2022). CLINICAL AND IMMUNOLOGICAL FEATURES OF ACUTE DIARRHEA IN CHILDREN WITH HEMOCOLITIS SYNDROME. Theoretical aspects in the formation of pedagogical sciences, 1(5), 285-293.
11. Tadjiev, B., Xudayberdieva, C. H., & Alimova, O. (2022). CLINICAL AND IMMUNOLOGICAL FEATURES OF ACUTE DIARRHEA IN CHILDREN WITH HEMOCOLITIS SYNDROME. Science and Innovation, 1(4), 214-217.
12. Исматова, М., Юлдашева, Ф., & Алимова, О. (2021). Влияние гибискуса и оральных препаратов на уровень глюкозы в крови. Общество и инновации, 2(8/S), 333-338.
13. Bekmurodovna, A. O., O‘G‘Li, N. F. F., & Qizi, R. G. S. (2022). KORONAVIRUS INFEKSIYASINING KLINIK KECHISHIDAGI O’ZGARISHLAR. Science and innovation, 1(D3), 9-12.