RELEVANCE OF DIAGNOSING INFLAMMATORY DISEASES OF THE PHARYNGEAL TONSILS

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Abstract: *Chronic inflammation of the middle ear is a common condition. Dangerous consequences of chronic suppurative otitis media (CSOM) include hearing loss and the development of complications associated with the spread of the pathological process to the inner ear and, in severe cases, even into the cranial cavity.*

Keywords: *chronic suppurative otitis media, children, review, diagnosis.*

Due to the increasing number of CSOM complications caused by disease exacerbations, objective diagnostics of the middle ear structures affected by chronic inflammation have become extremely important. Initially, a thorough collection of patient history and complaints is required. Children with CSOM often have a history of frequent episodes of acute respiratory infections, complicated by acute and recurrent otitis media, as well as various pathologies of the nasal cavity and nasopharynx. In most cases, patients with chronic middle ear pathology visit an otorhinolaryngologist due to otalgia, intermittent or persistent ear discharge, and hearing loss, usually during disease exacerbations.

If a patient has mucositis, the disease course is often accompanied by continuous, scanty mucous discharge, which changes in character during

exacerbations. In mesotympanitis and epimesotympanitis, exacerbations are characterized by abundant purulent discharge, while in epitympanitis, symptoms are more subtle. The presence of cholesteatoma is associated with purulent discharge that has a foul ichorous odor. Children may experience pain or a feeling of heaviness behind the ear, tinnitus, ear pulsations, headaches, and sometimes dizziness. Meningeal or focal neurological symptoms indicate the onset of intracranial complications of CSOM exacerbation and require immediate hospitalization.

However, due to children's behavioral characteristics, which are more pronounced in younger ages, and parental inattention, obtaining a complete history and understanding of the disease is challenging during examination. Therefore, more effective and easily implemented diagnostic methods are currently needed.

Most authors consider otoscopy to be the screening method for diagnosing CSOM. Historically, otolaryngologists relied only on reflexes and ear funnels, which did not allow a full assessment of the otoscopic picture. With advances in medical technology, otoscopes with magnification and otomicroscopes have entered daily practice, allowing detailed visualization of the tympanic membrane. High-tech equipment enables precise determination of the location and size of tympanic membrane perforations or retraction pockets, evaluation of defect edges (inversion, epidermization), and, in cases of large perforations, assessment of the middle ear mucosa, detection of mucositis, granulations or polyps, visualization of the ossicles, labyrinth windows, and diagnosis of cholesteatoma or destructive processes. The nature of middle ear discharge—mucous, purulent, or signs of fungal infection—can also be determined.

A.A. Mironov (2011) and Dementieva N.F., Shilenkov A.A., Kozlov V.S. (2010) describe detailed examination of the external auditory canal, tympanic membrane, and middle ear structures using rigid endoscopes with 0°,

30°, and 45° viewing angles. Endoscopic examination of the nasal cavity and nasopharynx is also performed to detect nasal septum deviation, assess adenoid tissue, evaluate the nasopharyngeal lymphoid tissue and the pharyngeal opening of the Eustachian tube, and identify other pathologies.

Analysis of the literature shows that much of the research on CSOM diagnosis focuses on determining the type of lesion and predicting disease progression. Historically, X-rays of the temporal bones in Schüller and Mayer projections were used. However, A.Yu. Ivoilov (2011) notes that classical radiographic methods still used in clinical practice are insufficiently informative regarding the nature and extent of pathological processes and do not meet modern otology requirements. Since the 1990s, the capabilities of radiodiagnosis have expanded significantly with the introduction of computed tomography (CT), allowing highly detailed imaging of the temporal bone comparable to anatomical sections.

According to E.I. Zelikovich (2005), CT of the temporal bones allows evaluation of structures inaccessible to visual inspection and is a non-invasive, morphologically, topographically, and clinically accurate diagnostic tool, especially in children. CT enables assessment of anatomical variations (sigmoid sinus prominence, low middle cranial fossa floor, high jugular bulb), facial nerve canal condition, inner and middle ear structures (pathological substrates, ossicular chain integrity), and detection of destructive changes in the tympanic cavity and mastoid antrum. M.M. Polunin (2012) refined the topographical and anatomical relationships of temporal bone structures in children of different age groups by comparing dissection results with CT scans, improving the safety and effectiveness of ear surgeries.

V.V. Vishnyakov et al. (2014) describe using cone-beam CT in CSOM diagnostics, highlighting its speed and low radiation exposure. However, E.V. Garov et al. (2012) argue that direct densitometry alone cannot definitively determine the nature of pathological substrates (cholesteatoma, fibrosis,

granulations, exudate, pus, cholesterol granuloma) but can only suggest it based on secondary tomographic signs. Magnetic resonance imaging (MRI) allows examination of soft tissue structures. O.V. Karneeva et al. (2011) emphasize that MRI is preferable in pediatric practice due to the absence of ionizing radiation compared to CT. MRI in different modes (DWT1, T2, EPI DWI, non-EPI DWI) can detect cholesteatoma and its recurrences. Brain CT or MRI is valuable in suspected intracranial complications, particularly vascular imaging to detect sigmoid sinus thrombosis.

Audiological assessment is also essential in CSOM patients. A.L. Guseva (2007) found mixed hearing loss in 92.7% of patients with epitympanitis and 80% of patients with epimesotympanitis, and conductive hearing loss in 72% of patients with mesotympanitis.

An interesting diagnostic method was proposed by V.P. Shpotin (2013) to evaluate inflammatory and destructive processes in CSOM. In 70 patients, ferritin levels were measured in middle ear exudate, serum, and tissues removed during surgery. Higher ferritin levels were associated with prolonged disease and with spread of inflammation beyond the mucosa and destruction of the temporal bone, allowing for diagnosis and prognosis of complications.

Additionally, V.I. Sambulov (2003) developed a non-invasive method for diagnosing cholesteatoma based on crystallographic analysis of saliva in children with CSOM. R.G. Anyutin et al. (2001) proposed a method for evaluating treatment effectiveness in exacerbations of CSOM using temperature differences measured with tympanic and axillary thermometers, with reductions in temperature differences indicating effective treatment.

Despite the availability of numerous modern high-precision diagnostic methods for CSOM, the literature lacks a clearly formulated algorithm for diagnosing exacerbations in children.

Therefore, there is a current need to expand knowledge about CSOM in children, as well as modern diagnostic and treatment methods.

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