



Anatomical Features of Children Ear in Chronic Suppurative Otitis Media

N. O. Khamrakulova ¹, F. R. Oydinova ²

^{1,2} Samarkand State Medical University

Abstract: Temporal bone CT was necessary to determine the pneumatization of the middle ear and auditory tube cavities and the presence of cavity, bone fracture, liquid content. Also, the use of modern CT scanning of the temporal bone in children and adolescents with chronic suppurative otitis media, which allowed obtaining comprehensive information with high accuracy, is now a leading element in the subsequent surgical and social rehabilitation of this contingent of children.

Keywords: otitis media, computed tomography, mesotympanitis and epitympanitis.

Introduction. According to the WHO definition, chronic suppurative otitis media is a chronic infection of the middle ear and perforated tympanic membrane, accompanied by otorrhea for more than 2 weeks. Each year, 31 million new cases of CSF are reported worldwide, 22.6% of which are diagnosed in children under 5 years of age. In 30.82 cases per 10,000 population, the disease is accompanied by hearing loss. The mortality rate from complications in CGSS is 16-30%. One of the causes of middle ear destruction is cholesteatoma, which is detected in 24-63% of CGSS patients in any localization of tympanic membrane perforation [1]. The diagnosis and treatment of CSF has never lost its relevance to otorhinolaryngologists, as it is the main cause of acquired hearing loss and affects mostly people of working age. Most chronic suppurative middle ear diseases originate in early childhood with acute inflammation (AOS) [2]. Neglect of controls for auditory function recovery, middle ear cavity aeration after CCA has resulted in altered clinical outcomes of acute inflammation. In the past decade, there has been an increase in the number of young children with an asymptomatic, prolonged course of exudative otitis media (EOM) and already developed hearing loss [3,4]. This is largely due to an underestimation by paediatricians and otorhinolaryngologists of the role of recurrent otitis media and auditory tube dysfunction in the development of chronic middle ear inflammation. Up to now, retractive forms of ESR have been considered in national otorhinolaryngology as pathology inherent to adults, resulting in an underestimation of their role in the development of CSE. Late diagnosis of chronic middle ear disease is often associated with a limited number of diagnostic techniques, which do not allow for the detection of morphofunctional abnormalities in the middle ear cavities in the early stages of the pathology. A large percentage of patients with CSFD are monitored by their local ENT doctor for many years, visiting them periodically during exacerbations of the process only to prescribe a course of conservative therapy.

However, the 'gold standard' of treatment for patients with CGSS is surgery. According to the International Classification of Diseases (ICD-10) it is accepted to differentiate between: H 66.1 - Chronic tubotympanous purulent media otitis (chronic tubotympanous disease, mesotympanitis) and H 66.2 - chronic epitympanous-antral otitis media (chronic epitympanous-antral disease, epitympanitis). This classification reflects anatomical and morphological peculiarities of middle ear structure, namely the presence of tympanic diaphragm and different character of mucous membrane anatomy in middle ear sections and variety of forms of CPE and its consequences, but in other subsections, allocating them to separate nosologies.

Objective of the study: by CT scan of the temporal bones: To determine the nature, prevalence of the process, anatomical features (low floor of the middle cranial fossa, high floor of the jugular bulb, prevalence of the sigmoid sinus, dehiscence of the facial nerve canal, structure of the mastoid process, presence of Korner's septum, mucosa, narrow spaces of the tympanic cavity (sinuses and pockets), condition of the walls of the tympanic cavity and anthro-mastoid region (presence and size of destruction), auditory ossicles, mucosa, narrow spaces of the tympanic cavity (sinuses and pockets), nature of the pathological substrate in the middle ear cavities.

Material and methods of investigation. In addition to the collection of complaints, medical history, and standard ENT examinations, a number of additional diagnostic methods are necessary, such as otomicroscopy (or otoendoscopy), chamber tunneling, tonal threshold audiometry, high resolution computed tomography (CT), and less frequently magnetic resonance imaging (MRI). A proper interpretation of the findings is also important. Detailed temporal bone CT findings play a major role in determining the surgical approach and extent of surgery in patients with CSF.

It should be remembered that CT scan of temporal bones is an additional method of investigation, its sensitivity depending on pathology reaches 90% (56-89% for cholesteatoma diagnosis, 42-90% for granulation tissue diagnosis), because it is not always possible to determine the nature of pathological substrate (cholesteatoma, fibrosis, granulation, exudate, pus, cholesterol granuloma) using direct densitometric method. Therefore, the clinical picture should be taken into account in the evaluation of the CT scan, including data from otomicroscopy, otoendoscopy, and audiological examinations. For objective verification of the extent of the process, a CT scan of the temporal bones should not be performed earlier than 3-6 months after the exacerbation of the disease. Performing this examination during an exacerbation unreasonably expands the scope of surgical intervention and is justified only in the case of a complicated course of the disease.

Results of the study and their discussion. Mesotympanitis is characterized by changes in the mucosa in the tympanic cavity, scarring around the auditory ossicle chain, a defect of the auditory ossicle chain is possible, more often due to lysis of the long anvil stem, less often due to lysis of the superstructures of the stirrup, anvil body and hammerhead. The antrum in mesotympanitis in remission is usually pneumatised. Cholesteatoma in patients with CGSS most commonly shows CT signs of osteodestruction of various parts of the middle ear, accompanied by caries of the auditory ossicular chain, riddled contours or defects in the roof of the tympanic cavity (attica) or antrum, enlargement of the entrance to the antrum, and enlargement, destruction of the lateral wall of the attic and/or aditus, defect of the posterior wall of the external auditory canal, destruction of the walls of the facial nerve canal throughout, and presence of labyrinth fistulas (more often the horizontal, less often the vertical and posterior semicircular canal). In severe adhesive, cystic-fibrotic process, the tympanic cavity and/or anthromastoid region is filled with a pathological substrate with heterogeneous inclusions of varying density. The substrate may also block the region of the auditory tube orifice, the round and oval window area, and surround the auditory ossicular chain, with the integrity of the latter being difficult to identify. As a rule, the mastoid process in patients with CSF is compact and sclerotic. In patients with tympanosclerosis, a pathological substrate of high (bone) density occupying any part of the tympanic cavity, deforming and displacing the ossicular chain can be visualized.

Conclusions:

1. To avoid otitis media, you must protect your ears from various irritants and take good care of them;
2. Do not reach deep into the ear canal when cleaning the ears. A cotton swab or soft cotton buds should be used;
3. Children under one year of age should not be exposed to drafts and windy conditions without headgear;
4. After bathing you should remove the remaining water from the ears;
5. Treat all ailments of the ENT organs (rhinitis, sore throat, pharyngitis) in a timely manner.

List of References

1. Karneeva O.V. Surgical rehabilitation of children with chronic inflammatory middle ear pathology. D. in medical sciences. M., 2012.
2. Kosyakov S.Y. Selected issues of practical otosurgery. M.:MCSFER, 2012.
3. Khushvakova N.J., Khamrakulova N.O., Akhmedova M.A. Features of the clinical course of endoscopic examination in children with chronic sinusitis. // Journal of Dentistry and Craniofacial Research. 2022. C. 171-173.
4. Rakhmonov Zafar Mamadievich Kamalova Malika Ikhomovna, Khamrakulova Nargiza Orzuevna // Anatomical features of the nose and nasal cavity // Journal of Dentistry and Craniofacial Research. 2022. C. 365-369
5. Qureishi A. et al. Update on otitis media – prevention and treatment. Infect Drug Resist, 2014;