Acta Scientific Orthopaedics (ISSN: 2581-8635)

Volume 5 Issue 6 June 2022

Short Communication

Chronic Suppurative Otitis Media in Children

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DOI: 10.31080/ASOR.2022.05.0487

Received: April 25, 2022

Published: May 27, 2022

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Chronic suppurative otitis media (CSOM) in children is one of the most common chronic infections in childhood, even in children in developed industrial countries. Globally, CSOM occurs in 4.76% of the population (22% in children under 5 years old) with hearing impairment present in 30 children per 10,000 [1].

Chronic suppurative otitis media without cholesteatoma is a condition that occurs after attacks of acute otitis with perforation on the eardrum. According to the research of the authors [2], the development of this infection occurs in two ways. In the first, the eardrum is intact and bacteria enter the middle ear from the nasopharynx, by reflux of nasopharyngeal secretion. This happens especially when there is an infection of the nose, adenoids and paranasal cavities, which spreads through the Eustachian tube into the middle ear. Another way to develop a chronic infection is when bacteria (eg. Pseudomonas) that are in the water, during bathing and swimming, enter through the perforated eardrum and cause contamination of the middle ear space.

The most commonly isolated bacteria are Pseudomonas aeruginosa (18-67%), Staphylococcus aureus (14-33%). Bacteroides spp. are isolated from anaerobic microorganisms. (1-91%) and Fusobacterium spp. (4-15%) [3].

The most common symptoms are occasional leakage of purulent secretions from the ear and hearing loss of varying degrees. There is often the presence of a polyp that protrudes through a perforation on the eardrum. Also, the size of the perforation is not related to the duration of the disease. The appearance of long-term pain in the infected ear, sensitivity of the mastoid process and dizziness, may already be a sign of threatening otogenic complications. Diagnosis of CSOM is complicated by the fact that we receive information about the anamnesis of the disease from the parents, and that the clinical examination depends on the cooperation with the child. Parents often reported that the disease lasted for several months or even several years, manifested by occasional leakage of purulent secretions from the ears, which were treated with more or less success on an outpatient basis. For a long time, children did not complain of ear pain. Also, if only one ear is affected, hearing loss can be minimal. An otomicroscopic examination is necessary to make a safe diagnosis, and children usually do not want to cooperate. Therefore, sometimes such an examination must be reported under general anesthesia.

The most common CSOM sequelae are conductive or sensorineural hearing loss; this can cause slow speech development in children and follow-up at school. CSOM can cause conductive hearing loss of moderate to profound, with air bone GAP between 30 and 50 dB [3,4]. Preoperative deafness according to several studies ranges from approximately 12% to 30% [5].

CSOM can cause the development of serious extracranial and intracranial complications. The frequency of extracranial and intracranial complications varies from 0.7 to 3.2% [6]. The most common extracranial complications are facial paralysis from 13 to 58%, subperiosteal abscess 40 to 68%, mastoiditis 14 to 74%, labyrinthitis occurring in a frequency of 7 to 34%.The most common intracranial complications are meningitis from 21 to

72%, brain abscess 18 to 42%, then lateral sinus thrombosis 2 to 26%, extradural abscess 7 to 16%, otic hydrocephalus and encephalitis occurring in a frequency of 5 to 11%, of all intracranial complications [6,7].

The incidence of complications, in general, is higher in children than in adults.

Treatment of chronic otitis media without cholesteatoma can be conservative and surgical Conservative treatment includes the use of systemic antibiotics and topical application of antiseptic and antibiotic drops. In developed countries, topical treatment with drops of aluminum acetate, boric acid, iodine powder and povidone-iodine are common treatments for CSOM due to their low cost and availability. Ear drops with antimicrobial agents with or without anti-inflammatory components have been introduced into CSOM therapy since 1950s. Fluoroquinolone drops have been used from 1990s [8]. Systemic antibiotic therapy in the treatment of CSOM is acceptable only in case of possible development of otogenic complications. It is agreed that systemic antibiotics should not be used regardless of the duration of CSOM; broad-spectrum antibiotics, according to the antibiogram, are accepted as initial oral therapy [8].

After the purulent infection of the ear has healed, a surgical intervention should be performed, which includes different types of tympanoplasty, and which reconstructs the auditory ossicles and the tympanic membrane [9].

Conclusion

Chronic purulent otitis media without cholesteatoma has a more aggressive character in children than in adults. Further research should focus on the identification of risk factors and the pathogenesis of CSOM. It is assumed that the factors that cause acute middle ear infections are also involved in the development of CSOM, but the evidence for this assumption is not yet sufficient. Despite the existence of studies on drug and surgical treatment of CSOM, the treatment of this disease is still controversial. Quinolone drops could be an excellent option for treating CSOM without cholesteatoma.

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