

Unsatisfactory Results after Tympanoplasty Surgery in Patients with Chronic Purulent Otitis Media

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ABSTRACT

The results of 50 cases of unsatisfactory anatomical results after a sanitizing operation with tympanoplasty on the middle ear in patients with chronic purulent otitis media operated in the period from 2021 to 2023 on the basis of the Regional Multidisciplinary Children's Clinical Hospital are given.

KEYWORDS: *tympanoplasty, neotimpanal membrane, adverse outcomes.*

Introduction. Currently, there is no doubt about the need for surgical treatment of patients with chronic purulent otitis media, regardless of the nature and prevalence of the pathological process in the middle ear [1]. The viability of tympanoplasty depends on many factors: the condition of the auditory tube, the mucous membrane of the middle ear, the localization and size of the tympanic membrane defect, the nature of the contents in the tympanic cavity, involvement in the process of retrotympanic departments, the material for defect plastic, the method of surgical intervention, graft placement and fixation, technical errors during surgery and in the postoperative period of patients [2]. Unsatisfactory results of tympanoplasty with tympanic membrane defects range from 10.8% to 28.6% [3]. The success of modern hearing-improving surgery for chronic inflammation of the middle ear has increased significantly, but the implantation of the neotimpanal membrane remains problematic. In most cases, the results of reconstructive sanitizing surgery on the middle ear are unpredictable and account for from 15 to 67% of unsatisfactory outcomes of surgical interventions, which requires further accumulation of both experimental and clinical material [4]. In the early postoperative period, the laid graft often shifts, thickens or necrotizes, which leads to disruption of the engraftment process and the development of such anatomical adverse outcomes of tympanoplasty as lateralization, blunting of the anterior meattimpanal angle, reperforation, cholesteatomas and sinking of the neotimpanal membrane [5]. In their work, Keylie et al., based on the experience of 398 interventions, puts reperforation, residual cholesteatoma, as the frequent causes of unsuccessful tympanoplasty [6]. According to the results of the study, Daikhes N.A., Diab H.M. in 212 patients (233 ears), reperforation, lateralization of the membrane and recurrence of cholesteatoma were the main reasons for the unsatisfactory results [7].

Objective. To provide unsatisfactory anatomical outcomes of tympanoplasty in patients with chronic purulent otitis media.

Materials and methods. The study was conducted in the ENT department on the basis of the Regional Multidisciplinary Children's Clinical Hospital in the period 2021-2023. During the period of our study, 458 patients were operated on. There were 50 patients (50 ears) under observation, including 29 men and 21 women aged 8 to 25 years who underwent a sanitizing operation with

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tympanoplasty on the middle ear with skin removal and the occurrence of unsatisfactory anatomical results in the early (1-3 months) and late (6-12 months) postoperative period operations. All patients underwent a traditional examination of ENT organs. Otoscopy in all cases was supplemented with otomicroscopy, the otoscopic picture was recorded using endovideotechnics. The audiological examination included tonal threshold audiometry in the standard range and tuning fork samples. To determine the prevalence of the carious process and cholesteatoma, patients underwent computed tomography of the temporal bones. The operation was performed under general anesthesia during the period of remission of chronic purulent otitis media (6-12 months). The patients underwent a sanitizing operation with tympanoplasty using the "underlay" method (according to the classification of M.Tos), consisting in an ear access, transcortical 24 (48.96%) and transmeatal 26 (51.04%) removal of cholesteatoma, revision of the tympanic cavity, excision of cicatricial changes of the mucous membrane. In 21 (42%) patients, the chain of the auditory ossicles was mobile and had no destructive processes. When the pathology of the auditory ossicles was detected in the form of an anvil-stirrup joint failure, an incomplete PORP prosthesis was installed on the stirrup head and a thin plate of autochondria under the neotympanic membrane in 16 (32%) patients, and when the superstructure of the stirrup was destroyed in 13 (26%) patients, autochondria was installed on the stirrup plate and reinforced with gelatin sponge Gelfoam impregnated with antibiotic- hormonal mixture. As a plastic material for the membrane, a deep fascia of the temporal bone was used, on top of which a skin flap was placed. All patients were discharged from the hospital on the second and third days with follow-up.

The results of the study. When monitoring the dynamics and results of tympanoplasty in 458 patients, postoperative complications occurred in 50 (10.9%). When observing the dynamics of patients in the early postoperative period, lateralization of the neotympanic membrane was detected in 9 (18%) out of 50 patients, in 21 (42%) cases - blunting of the anterior meattympanic angle, reperforation in 14 (28%), of which 10 - in the early period and 4 cases - reperforation in the late postoperative period (at 9 months). There was also a recurrence of cholesteatoma in 6 (12%) cases. Unsatisfactory anatomical results of the operation in the form of a recurrence of cholesteatoma in all three patients were revealed in the late postoperative period (6-12 months). The types of unsatisfactory results of tympanoplasty are described in the table.

Table № 1

Title	Quantity	%
Lateralization of the neotympanic membrane	9	18
Blunting of the anterior meattympanic angle	21	42
Membrane reperforation	14	28
Recurrence of cholesteatoma	6	12
Total	50	100

Types of unsatisfactory anatomical results after sanitizing surgery with tympanoplasty on the middle ear

In the course of our study of the unsatisfactory results of tympanoplasty, it was found that when the skin flap is removed, its nutrition is impaired and insufficient fixation of the graft in its "natural" position leads to a violation of the processes of engraftment, accompanied by the formation of reperforations, recurrence of cholesteatoma, displacement of the membrane outward relative to the anatomical level of the tympanic membrane. Conclusion The main reason for the unfavorable results of tympanoplasty is insufficient fixation of the graft and a violation of its nutrition. Surgical tactics largely depend on the features of anatomical structures: the width of the external auditory canal, the

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degree of overhang of the anterior wall of the external auditory canal, the size of the short process of the malleus, which determine an important role in the formation of the receiving bed for graft placement. The frequency of postoperative complications, such as lateralization, reperforation, blunting, recurrence of cholesteatoma in patients with chronic purulent otitis media determines the need to develop new ways of fixing the neotimpanal membrane, which will increase the effectiveness of reconstructive operations on the middle ear.

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