

Research Article

# Treatment of Serous Otitis Media

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## Abstract

Serous otitis media is a serosal inflammation of the mucous membrane of the auditory tube and the tympanic cavity which develops on the background of Eustachian tube dysfunction. It is characterized by the presence of seromucous exudate in the tympanic cavity. The disease occurs more often in children than adults.

**The objective** of the research was to compare the effectiveness of different methods of treating serous otitis media.

**Materials and methods.** The study included 46 patients with serous otitis media at the age of 22-55 years. There were 26 females and 20 males who were treated as inpatients and outpatients in the department of microsurgery of ENT-organs in Ivano-Frankivsk Central City Clinical Hospital during 2012-2016. Disease duration ranged from 10-15 days to 1 month. In all the patients, serous otitis media developed on the background of persistent allergic rhinitis. All the patients underwent comprehensive examination: their complaints as well as anamnestic data were analyzed, ENT examination including the endoscopic examination of the nasal cavity and the nasopharynx, otoscopy, audiometry, impedancemetry and laboratory investigations was performed. All patients were divided into 2 groups: Group I included 21 patients receiving conservative therapy for allergic rhinitis and serous otitis media; Group II comprised 25 patients receiving conservative therapy for allergic rhinitis and treatment of serous otitis media applying myringotomy and bypass surgery of the tympanic cavity.

**Results.** The analysis of the study revealed that in 9 patients of Group I, an improvement in hearing occurred on the third-fourth days after treatment. In 12 patients, treatment was ineffective. 14 patients of Group II who underwent myringotomy with the evacuation of the fluid from the tympanic cavity and subsequent injection of glucocorticoids into the tympanic cavity noted an improvement in hearing immediately after the procedure or the day after. In 11 patients of Group II, a thick mucous exudate was obtained during myringotomy. These patients underwent bypass surgery. The shunt was removed after a thorough cleaning of the tympanic cavity as well as the restoration of the auditory tube function.

**Conclusions.** Myringotomy is more effective and rational method of treating serous otitis media. Myringotomy with subsequent bypass surgery is recommended for patients with a thick mucous exudate in the tympanic cavity in order to prevent chronic adhesive otitis as well as to perform a complete sanitation of the tympanic cavity and to restore the auditory tube function.

## Keywords

serous otitis media, treatment

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## Problem statement and analysis of the recent research

Serous otitis media (SOM) is a serosal inflammation of the mucous membrane of the auditory tube and the tympanic cavity which develops on the background of Eustachian tube dysfunction. It is characterized by the presence of seromucous exudate in the tympanic cavity [2, 3, 4]. The disease occurs more often in children than adults [5, 7].

Despite the advances in studying the etiology and pathogenesis of SOM, the problems associated with its treatment remain relevant.

While treating SOM, the following criteria should be considered:

- an inflammatory process with predominant exudative phase is the basis of a disease;
- tubal dysfunction and immune disorders are the main

principles of its development;

- SOM is characterized by a prolonged clinical course and a tendency to recur [1, 6].

According to literature, depending on the main factor, SOM can be classified into 2 categories: SOM that develops due to long-term tubal dysfunction and SOM that develops due to immune disorders. In both cases, the clinical course is marked by its own peculiarities; however, the final stages (the mucosal and sclerotic stages) are identical [4, 6].

Due to the fact that in SOM the sclerotic process in the tympanic cavity develops quite rapidly, the main goal of treatment, in our opinion, is to eliminate negative pressure in the middle ear as well as to prevent long-term inflammation. The timeliness and adequacy of such measures will allow us to stop the process at the stage of less pronounced morphological changes.

The objective of the research was to compare the effectiveness of different methods of treating SOM.

## 1. Materials and methods

The study included 46 patients with serous otitis media at the age of 22-55 years. There were 26 females and 20 males who were treated as inpatients and outpatients in the department of microsurgery of ENT-organs in Ivano-Frankivsk Central City Clinical Hospital during 2012-2016. Disease duration ranged from 10-15 days to 1 month. In all the patients, SOM developed on the background of persistent allergic rhinitis (AR). All the patients underwent comprehensive examination: their complaints as well as anamnestic data were analyzed, ENT examination including the endoscopic examination of the nasal cavity and the nasopharynx, otoscopy, audiometry, impedancemetry and laboratory investigations was performed. All patients were divided into 2 groups: Group I included 21 patients receiving conservative therapy for AR and SOM; Group II comprised 25 patients receiving conservative therapy for AR and treatment of SOM applying myringotomy and bypass surgery of the tympanic cavity.

## 2. Results and Discussion

The analysis of the study revealed that in 9 patients of Group I, an improvement in hearing occurred on the third-fourth days after treatment. In 12 patients, treatment was ineffective. 14 patients of Group II who underwent myringotomy with the evacuation of the fluid from the tympanic cavity and subsequent injection of glucocorticoids into the tympanic cavity noted an improvement in hearing immediately after the procedure or the day after. In 11 patients of Group II, a thick mucous exudate was obtained during myringotomy. These patients underwent bypass surgery. The shunt was removed after a thorough cleaning of the tympanic cavity as well as the restoration of the auditory tube function.

According to literature, the most common method of treating SOM abroad, in Western Europe in particular, is bypass surgery of the tympanic cavity as well [5]. Some authors prefer more conservative methods of treatment, balloon dilation of the cartilaginous part of the auditory tube in particular [6]. This method has been known in Europe since 2010 and its effectiveness constitutes 70% in stable dysfunction. For this purpose, balloon dilator produced by Spiggle & Theis (Germany) is currently used; it is expanded due to the injection of normal saline and reaching the pressure of 10 atm. The exposure time of inflated balloon is 2 min; then, the pressure is reduced, the balloon is deflated and removed [6].

## 3. Conclusions

Myringotomy is more effective and rational method of treating SOM. Myringotomy with subsequent bypass surgery is recommended for patients with a thick mucous exudate in the tympanic cavity in order to prevent chronic adhesive otitis as

well as to perform a complete sanitation of the tympanic cavity and to restore the auditory tube function.

## 4. Prospects for further research

Further research will be directed to the extension of indications for myringotomy and bypass surgery of the tympanic cavity in order to prevent potential complications.

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