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Original Research Article

Otomycosis causing Tympanic Membrane Perforation: A study in Tertiary Care Hospital in Central India

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Abstract: In this study, we assessed 27 patients, 15 men and 12 women, of otomycosis causing tympanic membrane perforation of age between 18 to 65 years. None of these patients had a previous history of ear disease. All patients underwent meticulous ear canal cleaning followed by application of antifungal ointment. Out of 27 patients, 21 patients had spontaneous closure of perforation of tympanic membrane. Remaining 6 patients underwent closure of perforation by tympanoplasty. This study demonstrates that most patients with otomycosis causing secondary tympanic membrane perforation without previous history of ear disease will heal spontaneously without any surgical intervention.

1. INTRODUCTION

Otomycosis is a common otolaryngology and primary care condition that is characterised by a superficial fungal infection of the external ear canal. While it is a global illness, warm, humid climates are where it is most common[1]. In some cases, it can also affect the tympanic membrane or the middle ear. Otomycosis has become more common in recent years as a result of widespread usage of antibiotic ear drops[2-3]. Additional risk factors for otomycosis development include swimming frequently, immunocompromised hosts (such as those with diabetes or AIDS), pregnancy, post-canal wall-down mastoidectomy, tympanic membrane perforation, wearing hearing aids, and self-inflicted injuries (like cotton swabs)[4].

Predisposing Factors	Number of patients in the study group
Manual cleaning of ear with swab sticks	16
Use of topical antibiotic and steroid ear drops	5
Swimming	6

Aspergillus species and Candida are the most frequent causes of fungal otitis externa[5]. Tympanic membrane perforation is an otomycosis consequence that is rarely observed[6]. The most popular course of treatment for otomycosis is antifungal medication and mechanical ear canal debridement[7].

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2. MATERIAL AND METHODS:

During a period of 1 year, we treated 27 patients of otomycosis that had been complicated by a perforation of tympanic membrane. The diagnosis of otomycosis was made on clinical grounds and using otoendoscopy.
Patients were followed until their signs and symptoms resolved completely. Antifungal ointment was applied once a week until no otomycosis was seen in the deep ear canal. In those patients who did not have spontaneous closure of tympanic membrane perforation, myringoplasty was done with a persistently clean ear canal for 2 months.

3. RESULTS:

Out of all 27 patients, 15 were men and 12 were women. It is significant to note that none of the patients had any history of previous otologic disease prior to this condition. Out of 27 patients, Ear itching was seen in 23 patients, Ear pain was seen in 14 patients, Ear discharge was seen in 20 patients, Impaired hearing and blocked feeling of ear was seen in 6 patients, and tinnitus was seen in 2 patients.

Table 1 - Symptoms seen in study patients

Symptoms seen in Study Patients	Number of patients
Itching in Ear	23
Ear Pain	14
Ear discharge	20
Impaired hearing	6
Blocked ear	6
Tinnitus	2

In the patients involved in study group, history of ear cleaning was present in 16 patients, 5 patients had a history of topical ear drop use and 6 had history of swimming.

Table 2 - Predisposing factors for otomycosis in study patients

Predisposing Factors	Number of patients in the study group
Manual cleaning of ear with swab sticks	16
Use of topical antibiotic and steroid ear drops	5
Swimming	6

Upon physical examination, all patients had edema of ear canal with fungal debris in it. After thorough cleaning of the ear canal, perforation of tympanic membrane was visualised.
Out of 27 patients, 18 patients had small central perforation, 6 had medium sized central perforation and the remaining 3 had large central perforation.

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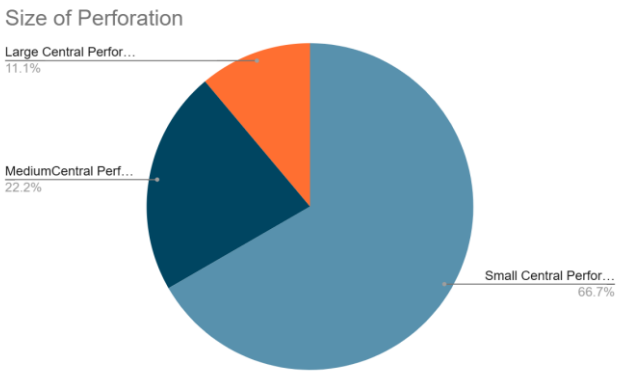

Chart 1 - Size of perforation in Study Patients

Of all the 27 patients, 21 patients had spontaneous closure of perforation after antifungal therapy. Remaining 6 patients who underwent tympanoplasty after treatment of otomycosis, 1 patient had to undergo repeat tympanoplasty because of failure of graft uptake in the first procedure.

4. DISCUSSION:

An external ear canal fungal infection is known as otomycosis.
This infection can be found all around the world, although tropical and subtropical areas are where it is most prevalent[8].
Itching, ear pain, ear discharge, a blocked sensation, hearing loss, and tinnitus were the most prevalent complaints among our patients. Paulose et al., Mohanty et al., and Ho et al. also noted these symptoms[9–11].
In the study by Rama Kumar, the incidence of tympanic membrane perforation in otomycosis was found to be 11%[12]. Mycotic thrombosis of the tympanic membrane blood vessels has been identified as the mechanism of perforation, leading to avascular necrosis of the tympanic membrane[13].
Adequate mechanical debridement and a topical antifungal regimen, either in combination with or without an oral regimen, can be utilised to treat tympanic membrane perforations brought on by fungal otitis externa. This is consistent with the results of Ho et al., who examined 18 patients treated with antifungal drugs for a tympanic membrane perforation brought on by otomycosis; they discovered that only one of these patients needed tympanoplasty to seal a persistent perforation[11]. Similar results were reported by Hurst, who found that 19 out of 22 patients who had an otomycosis-related tympanic membrane perforation recovered without surgery[6].

5. CONCLUSION:

This study demonstrates that most patients with otomycosis causing secondary tympanic membrane perforation without previous history of ear disease will heal spontaneously without any surgical intervention.

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