

# How Safe is Safe Ear?: A Hospital Based Study

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## Abstract

**Introduction:** Chronic suppurative otitis media is one of the commonest ear cases encountered in our outpatient department on day to day basis. Around half of the cases visiting outpatient department are ear problem cases, out of which 52% cases are of ear discharge. Hence this study was undertaken to know the various pathology encountered in chronic suppurative otitis media-tubotympanic type active so called safe ear type and to ensure whether safe ear discharge is really safe or not.

**Materials and Methods:** This study has been conducted in the Department of ENT, JSS Medical College and Hospital, Mysore, Karnataka, India. Study group includes 100 cases of chronic suppurative otitis media-tub tympanic type. Thorough history taking, otoscopic examination, audiometric evaluation, radiological investigation and blood investigations were done. Type of discharge, perforation, associated ear symptom, degree of deafness and otoscopic findings were recorded and patients were subjected to surgery (Cortical mastoidectomy/Tympanoplasty). Intra-operative finding on opening mastoid was taken into account, Otoscopic finding and findings at mastoid exploration compared and analyzed.

**Results:** Safe variety of Chronic Suppurative Otitis Media was common in age group between 21-30 yrs and was more in male population (57%) compared to females. Intraoperative finding showed around 66% cases with granulation in attic, aditus & antrum. Surprisingly 2% cases had cholesteatoma sac and histopathological finding of the specimens taken showed cholesteatoma in 8% of cases.

**Conclusion:** This study suggests that no perforation in Chronic Suppurative Otitis Media is a safe type of perforation. Hence the practice of calling disease as safe or unsafe depending on the site of the disease (tubotympanic or atticoantral) is questionable.

**Keywords:** Central perforation, Cholesteatoma, Chronic Suppurative Otitis Media, Mastoidectomy, Safe ear

## INTRODUCTION

Chronic suppurative otitis media (CSOM) is a long standing infection of a part or whole of the middle ear cleft characterized by ear discharge and a permanent perforation.<sup>1</sup> World health organization defines CSOM as otorrhoea through a perforated tympanic membrane for atleast 2 weeks while others define “chronic” as symptoms persisting for more than 6 weeks.<sup>2</sup>

CSOM is classified into the safe (tubotympanic) and unsafe (atticoantral) variety depending on the likelihood of coexisting cholesteatoma.

Tubotympanic type which is considered as safe ear as it is less prone to intracranial complications and atticoantral

type, considered as unsafe ear or dangerous type as it is associated with cholesteatoma and frequently gives rise to intracranial complications.

The safe variety of CSOM i.e. CSOM without cholesteatoma can be further classified into active or inactive depending on whether there is infection or not.<sup>3</sup>

The present study was undertaken to know the various pathology encountered in tubotympanic type of CSOM i.e. “Safe ear” and to assess how safe is the safe ear?

## MATERIALS AND METHODS

This study has been conducted over a period of 2 years in the Department of ENT JSS Medical College and

Hospital, Mysore, Karnataka, India. Total patients studied during the period were 100. Cases of tubotympanic type of CSOM, active ear (discharging ear) were considered. These cases were subjected to detailed otoscopic examination, audiometric and radiological examination, routine blood investigations, pus culture and sensitivity. Consent of patients was taken for conducting surgery. Cortical or simple mastoidectomy was carried out under general anaesthesia and intraoperative findings were noted. Specimens collected during the procedure was sent for histopathological examination.

**Inclusion Criteria**

- Tubotympanic type of CSOM, active discharging ear

**Exclusion Criteria**

- Atticoantral type of CSOM.
- Previously operated cases.
- Dry ear (Tympanic plexus seen & middle ear mucosa normal).

**RESULTS**

The age of patients was ranging between 10 and 70 years with majority (36%) being between 21-30 years as revealed in Table 1. There was male pre- dominance making up of 57% of total patient population. Most of them had moderate amount of mucopurulent discharge. There was more laterality to right ear. Otoscopic finding is depicted in Table 2. These cases were associated with other otological symptoms such as earache in 43% of the cases, giddiness and tinnitus in 18% of the cases and 39% of the cases showed deafness. Audiometric evaluation showed moderate degree of conductive hearing loss in most of the cases as shown in Table 3.

A detailed account of Intraoperative findings is mentioned in Figure 1. Surprisingly, 2% cases had cholesteatoma sac. Histopathological analysis of the specimens taken, showed cholesteatoma in 8% of cases and Tuberculous granuloma in 2% of the cases as shown in Figure 2. Figures 3 and 4 shows microscopic picture of cholesteatoma sac and tuberculous granuloma respectively.

**DISCUSSION**

Chronic suppurative otitis media is a disease of young adults and about 36% of the patients were between the ages of 21-30 years, which is comparable to the study done by group of workers on 50 cases of tubotympanic type of CSOM (4). The ratio of male to female patients was

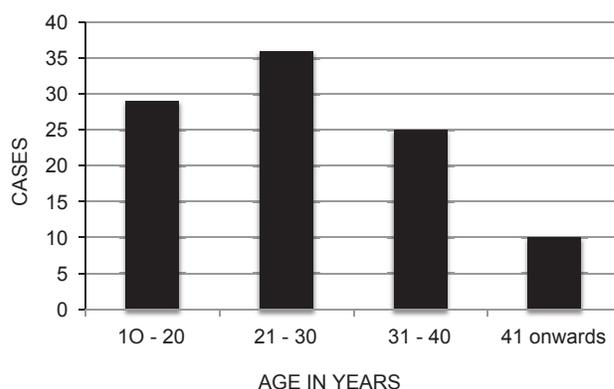
1.33:1, showing male predominance; similar findings have been reported by several other authors.<sup>5-7</sup>

Otological examination showed 28 small central perforations whereas large central and subtotal perforations were 36 each.

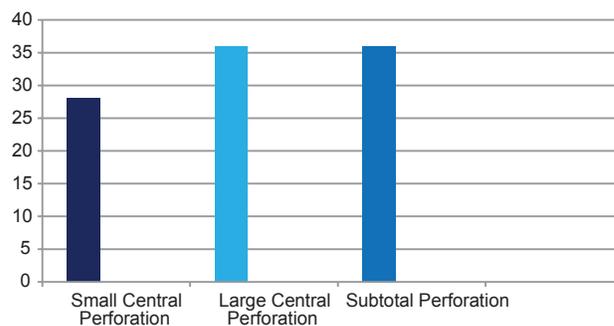
Among the pattern of hearing loss, this series showed that 84% patients had conductive type of hearing loss, 12% had mixed type. Conductive type of hearing loss was the most common type and this was consistent with other study.<sup>8</sup>

Intraoperative finding showed around 66% cases with granulation in attic, aditus & antrum. Surprisingly 2% cases had cholesteatoma sac and histopathological finding of the specimens taken showed cholesteatoma in 8% of cases.

**Table 1: Age distribution**



**Table 2: Otoscopic findings**



**Table 3 : Audiometric evaluation**

Conductive			Mixed	
Minimal	Mild	Moderate	Severe	Profound
25	29	30	7	8

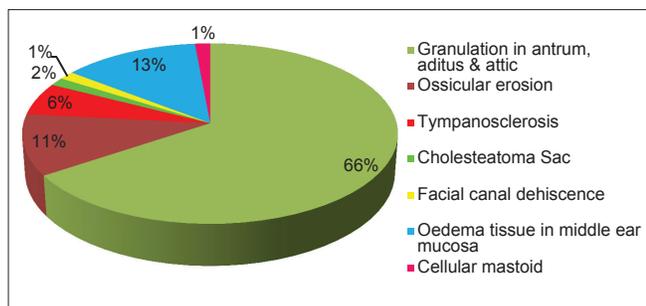


Figure 1: Intraoperative findings

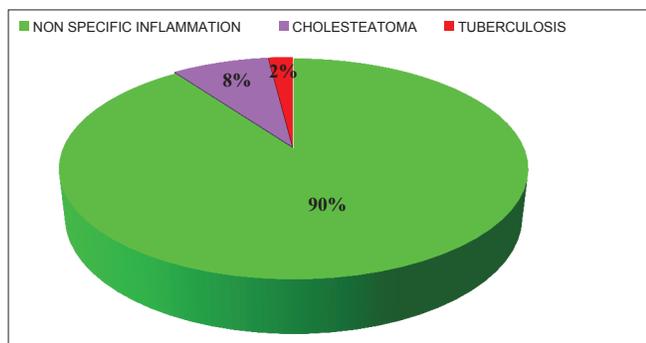


Figure 2: Histopathological findings

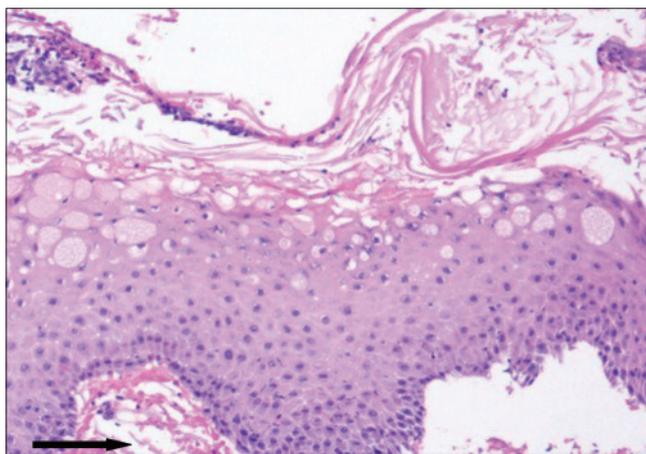


Figure 3: Picture showing cholesteatoma sac

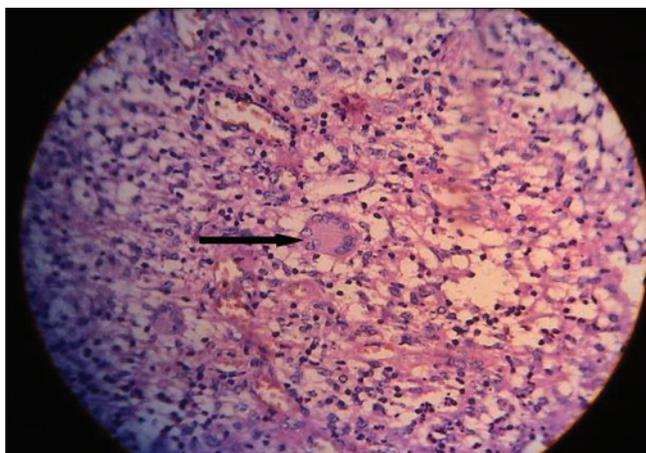


Figure 4: Picture showing tuberculous granuloma

In a study done to know the prevalence of cholesteatoma in chronic suppurative otitis media with central perforation, it was shown that although cholesteatoma is commonly found in CSOM with attic and marginal perforations, it is also found in case of central perforations. Although the involvement is rare, it was found in 3.4% of the study sample.<sup>9</sup>

In a Japanese study, 28 of 2948 ears with central perforation of the Tympanic membrane had cholesteatoma. Author was of the opinion that although a central perforation of the tympanic membrane is the typical finding of chronic otitis media without cholesteatoma, a keratinizing squamous epithelium on the tympanic side of the Tympanic membrane or in the tympanic cavity is occasionally found during surgery, although rarely.<sup>10</sup>

This study shows that although cholesteatoma is commonly found in CSOM with attic and marginal perforations, it is also found in tubotympanic type. Hence the study further affirms the suggestions of Rout MR et al.<sup>9</sup>, to call CSOM as safe type of CSOM when there is no associated cholesteatoma and unsafe type when it is associated with cholesteatoma.

## CONCLUSION

The results of this study, makes one ponder whether labeling a disease safe or unsafe merely on the site of disease is right? The question to contemplate is whether safe (tubotympanic) type of CSOM is really safe as there was incidence of cholesteatoma intraoperatively in 2% cases and histopathologically in 8% cases in the present study. We conclude that in all Tubotympanic (discharging) cases of CSOM it is advisable to open the mastoid antrum and to do complete eradication of disease. This ensures prevention of further complication and helps to provide a safe ear and better hearing.

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