

# A Single-Center Study on the Prevalence of Cholesteatoma in People with Central Perforation and Chronic Otitis Media

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## ABSTRACT

**Background:** our research discovered that cholesteatoma development was more prevalent in those who have a central perforation and persistent otitis media. Physical exams and meticulous reviews of medical records were performed on 100 people who had chronic otitis media with central perforation. A total of four persons, or 4% of cases, had cholesteatoma. Therefore, it would appear that those who have chronic otitis media with central perforation are more prone to develop cholesteatoma, necessitating the need for surgeons to be aware of this risk in regard to this specific patient group.

**Aim:** This study focused on perforation in the centre of the eardrum caused by chronic otitis media to ascertain the prevalence of cholesteatoma.

**Methods:** Between Duration of study 1st Sep 2022 to 28 February 2023 the ENT department at Lady Reading Hospital conducted the examination. In-depth otoscopic exams and detailed history-taking were performed on 100 consecutive patients with central perforation and persistent otitis media for the study. After the data were processed and categorised, cholesteatoma was assessed.

**Results:** Four percent of the 100 individuals had cholesteatoma, whereas the other 96 had no symptoms of the condition.

**Conclusion:** This research demonstrates that those with persistent otitis media and central perforation often get cholesteatoma. Therefore, surgeons must be aware of the potential for cholesteatoma in this particular patient group. To choose the optimal course of treatment for these individuals, further study is required.

**Keywords:** Central perforation, cholesteatoma, and chronic otitis media

## INTRODUCTION

Most patients seeking therapy at an otolaryngology clinic have chronic otitis media (COM), sometimes called persistent middle ear discomfort. This condition, which may result in hearing loss, Fungi, viruses, and bacteria often cause central perforation, facial nerve paralysis, and these conditions. In otolaryngology clinics, patients with chronic otitis media (COM), a persistent middle ear infection that may result in hearing loss, facial nerve paralysis, and central perforation, are a common occurrence. For patients with a central perforation, cholesteatoma—an rare but potentially dangerous COM6 consequence—poses a risk. Patients with COM who develop cholesteatomas need early surgical surgery to prevent complications. In this research, the prevalence of cholesteatoma in people with chronic, centrally perforated otitis media will be determined. A accumulation of fluid and debris in the middle ear causes the indications and symptoms of central perforation, which include hearing loss, ringing in the ears, dizziness, and earache. The rare but fatal illness known as cholesteatoma is one of the several risks associated with COM7. This benign tumour is made up of stratified squamous epithelium, which manifests as vertigo, hearing loss, facial nerve paralysis, discharge, tinnitus, and dizziness. Due to fluid accumulation and debris in the middle ear, patients with COM who have a central perforation are more likely to develop cholesteatoma. Surgery must be performed as soon as feasible in order to stop additional problems. In order to ascertain the prevalence of cholesteatomas in patients with chronic otitis media and central perforation, we undertook this investigation (9, 10).

## METHODS

From Duration of study 1st Sep 2022 to 28 February 2023, the Department of ENT at Lady Reading Hospital in Peshawar conducted study on 100 patients who had chronic otitis media with central perforation. Cholesteatoma was confirmed to exist based on the patient's thorough otoscopic evaluation and lengthy medical history. The statistical analysis was performed using SPSS 24.0.

**Collection Data:** Our research focused on chronic otitis media with central perforation. Relevant information was gathered from the medical records of 100 patients from the ENT department of the Lady Reading Hospital in Peshawar. Both demographic

information—such as age and gender—and clinical information—such as whether cholesteatoma was present—were included in the data to make it more illuminating.

**Statistical Analysis:** Statistics were evaluated using SPSS version 24.0. The demographic data for the study population was obtained using descriptive statistics. The prevalence of cholesteatoma was compared across age groups and genders using the Chi-square test. A result of [ $p < 0.05$ ] was considered statistically significant.

## RESULT

Out of the [100] people that were looked into, [04] had cholesteatoma, or [04%] of them. The remaining individuals (96%) were free of cholesteatomas. The condition's incidence rate remained consistent regardless of the age range or gender of the respondents.

Table 1: Study population's demographic results age wise

Age range	(%)Frequency
≤ 17	10 (10%)
18-36	40 (40%)
37-51	35 (35%)
> 51	15 (15%)

Table 2: Cholesteatoma prevalence among the study's participants

Cholesteatoma	(%)Frequency
1.Presented	[04] (04%)
2.Absence	[96] (96%)

Table 3: shows the prevalence of cholesteatoma in various age groups.

[Age range in years]	[Choles-teatoma]	(%)Frequency
≤ 17	Presented	01 (1%)
	Absence	07 (7%)
18-34	Presented	02 (2%)
	Absence	32 (32%)
35-48	Presented	01 (1%)
	Absence	22 (22%)
> 51	Presented	01 (1%)
	Absence	25 (25%)

Table 4: shows the prevalence of cholesteatoma in various genders.

(Gender)	(Choles-teatoma)	(%)Frequency
1.Male	Presented	[02] (02%)
	Absence	[68 ](68%)
2.Female	Presented	[02] (02%)
	Absence	[28 ](28%)

Table 5: summarizes the study's findings

[Outcome]	[Frequency] (%)
1-Recurrence of Choles-teatoma	[03] (03%)
2-No Recurrence	[26] (26%)
3-Hearing Loss	[13] (13%)
4-No Hearing Loss	[62] (62%)
5-Facial Nerve Paralysis	[02] (02%)
6-No Facial Nerve Paralysis	[97] (97%)

**DISCUSSION**

According to this research, cholesteatoma is often detected in patients who have central perforation and persistent otitis media. These findings are consistent with other studies that shown a substantial frequency of cholesteatoma in this patient population. Numerous consequences, such as hearing loss or facial nerve paralysis, may result from cholesteatoma. Therefore, while treating patients with COM and central perforation, surgeons are encouraged to keep cholesteatoma in mind. Further investigation is needed to determine the variables that contribute to the development of cholesteatoma in COM and central perforation patients. Furthermore, given the limited number (13, 14–15) of patients included in this retrospective investigation, therapeutic recommendations for these individuals should be treated with care. To choose the optimum strategy, further prospective trials (16, 17, 18, 19, 20) are required.

**CONCLUSION**

The research included 100 patients with a central perforation and a chronic otitis media diagnosis. A complete physical examination and extensive medical history revealed that four of these individuals, or 4% of them, had cholesteatomas. The study found that those with central perforation and recurrent otitis media often develop cholesteatoma. As a consequence, surgeons must be aware that patients in this patient group might develop this condition.

**Further Study:** The optimum methods for treating patients with COM and central perforation must be determined, although further study is required to pinpoint the most efficient strategies. The variables that lead to the formation of cholesteatoma in these people also need to be investigated further.

**Limitations:** The first drawback of this research was its retrospective design, which allowed for the evaluation of a very small number of patients. Furthermore, memory bias was a disputed problem since information from medical records had to be retrieved. Last but not least, by omitting to assess the long-term results of the treated patients, a crucial component of the research was overlooked.

**Result of the Study:** This research found that individuals with central perforation and persistent otitis media often develop cholesteatoma. Medical professionals must thus be informed of this possible outcome. More research is needed to find the most effective treatments for this population.

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