



## ORIGINAL ARTICLE

### Clinical presentation and complication of chronic suppurative otitis media with cholesteatoma in a rural setting

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#### Abstract

To study the clinical presentations of chronic suppurative otitis media (CSOM) with cholesteatoma and its complication, 96 patients with CSOM from ENT department of a medical college hospital during January 2011 to January 2014 were included in this study. The highest number of cases belonged to the age group of 11-20 years (55.2%), and the number of males and females was 67.2% and 32.8%, respectively. Almost all the patients presented with multiple symptoms. The most common symptoms were discharge from ear(s) (100.0%), hearing impairment (83.3%), earache (15.6%), fleshy mass in ear(s), etc. Of the patients, 67.9% cases were without complication, 26.1% with extracranial complication and 6.3% with intracranial complication. All the cases had a perforation either in the posterior superior marginal (66.5%) or in the attic region (33.5%). Most of the patients were having unilateral CSOM with cholesteatoma, in the right side (64.3%), left side (35.7%), and a few (4.2%) bilateral involvement. Although 83.3% of the patients complained of deafness, audiometric tests were done in 93.7% of the patients excluding 6.4% who had intracranial complication. All of them (93.7% tested) had developed deafness; mild deafness (20.0%), moderate deafness (77.8%), and severe deafness (2.2%). In conclusion, the pattern of clinical presentation and complication of CSOM with cholesteatoma in rural setting may be similar with the pattern involving urban population and early diagnosis of CSOM with cholesteatoma by taking proper history and clinical examination, and timely surgical intervention may be helpful to eradicate the disease and prevent complications.

**Key words:** Cholesteatoma, chronic suppurative otitis media, clinical presentation, complication.

#### Introduction

Chronic suppurative otitis media (CSOM) is a perforated tympanic membrane with persistent drainage from the middle ear (lasting >6-12 weeks).<sup>1,2</sup> Chronic suppuration can occur with or without cholesteatoma, and the clinical history of both conditions can be very similar. Cholesteatoma is a lesion of obscure origin, a slowly progressive and destructive of the middle ear cleft caused by formation of a whitish shiny bag or sac lined by stratified

squamous epithelium containing layers of concentric keratin material impregnated with desquamated squamous epithelium with or without cholesterol crystal. It is capable of destroying soft and hard tissues surrounding it producing extracranial and intracranial complications.<sup>3</sup> According to presumed etiology cholesteatoma may be congenital and acquired. The primary acquired cholesteatoma, the most common form of acquired cholesteatoma arises from a skin lined

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retraction pocket and the secondary acquired cholesteatoma develops from ingrowths of skin through a tympanic membrane perforation and secondary to episodes of inflammation where the mucosa undergoes metaplasia to squamous type.<sup>4-7</sup> Clinical presentation of cholesteatoma in an uncomplicated case is usually discharge which varies from thick, purulent, foul smelling, scanty, occasionally bloodstained and cheeselike to clear and serous, and hearing loss in the affected ear.<sup>3</sup> Small slow growing cholesteatoma can often be asymptomatic, only discovered as an incidental finding. However, in the presence of complication the patient may develop earache, fever, chill, rigor, post-auricular swelling, vomiting, vertigo, headache, post-auricular discharging sinus, facial weakness, etc.<sup>8-12</sup> There are many cases with cholesteatoma present with extracranial complication and sometime with grave intracranial complication specially in case of children.

As cholesteatoma is considered unsafe because of the risk of developing complications particularly intracranial complication, early diagnosis and complete eradication are essential for the safety of patients. In a study by Yousuf et al, it was shown among urban and rural population that poverty, illiteracy, overcrowding, living in slum with kuntcha floor, bathing in ponds and river with the habit of swimming were the main etiological factors.<sup>13</sup> This study was conducted among patients from rural population to ascertain the disease profile which may be helpful to enhance prompt diagnosis and treatment or early referral to reduce morbidity and mortality of the patients.

### Materials and Method

A total of 96 patients visiting the Department of Otolaryngology & Head Neck Surgery, Jahurul Islam Medical College & Hospital during January 2011 to January 2014 for treatment of CSOM with definitive cholesteatoma were included in this study. The patients were diagnosed as CSOM with definitive cholesteatoma by taking history in detail in a prescribed study protocol and examination of ear, nose and throat including otoscopy under magnification. Radiological investigations included X-ray of mastoid bones in Towne's and Stenver's views and were done in all the cases. Audiometric investigations were done in patients without intracranial complication.

### Results

Table 1 shows the age distribution of the patients. The highest number of patients were in the 11-20 years of age. In this study, the age of the patients ranged from 6 years to 40 years. The highest number of patients were in the 11-20 years age group (55.2%). The number of males and females was 67.2% and 32.8%, respectively.

Almost all the patients presented with multiple symptoms. The most common symptoms were discharge from ear(s) (100.0%), hearing impairment (83.3%), earache (15.6%), fleshy mass in ear(s), etc (Table 2).

Table 3 shows the patients with extracranial and intracranial complications. Of the patients, 67.6% cases were without complication, 26.0% with extracranial complication and 6.4% with intracranial complication.

**Table 1. Age and gender distribution of patients, n = 96**

Characteristics	%
<b>Age (years)</b>	
≤10	18.8
11-20	55.2
21-30	15.6
31-40	10.4
<b>Gender</b>	
Male	67.2
Female	32.8

**Table 2. Clinical presentation of chronic suppurative otitis media patients, n = 96**

Symptoms	%
Discharge from ear(s)	100.0
Hearing impairment	83.3
Earache	15.6
Fleshy mass in ear(s)	15.6
Post-auricular painful swelling	12.5
Post-auricular discharging sinus	10.4
Fever	10.4
Headache	6.3
Vomiting	5.2
Vertigo	5.2
Neck rigidity	4.2
Facial paralysis	3.1
Tinnitus	2.1

**Table 3. The patients with extracranial and intracranial complications, n = 96**

Complications	%
Extracranial	
Post-auricular abscess	12.5
Post-auricular sinus	10.4
Facial palsy	3.1
Intracranial	
Extradural abscess	1.1
Lateral sinus thrombophlebitis	1.1
Meningitis	3.1
Temporal lobe abscess	1.1
Total	32.4

**Table 4. Audiometric findings of chronic suppurative otitis media patients with cholesteatoma, n = 90 patients, 180 ears**

Audiometric findings	%
Mild deafness (26-40 dB)	20.0
Moderate deafness (41-70 dB)	77.8
Severe deafness (71-90 dB)	2.2
Total	100.0

All the cases had a perforation either in the posterior superior marginal (66.5%) or in the attic region (33.5%). Most of the patients were having unilateral CSOM with cholesteatoma, in the right side (64.3%), left side (35.7%), and a few (4.2%) bilateral involvement. Table 4 shows the audiometric findings of CSOM patients with cholesteatoma. Although 83.3% of the patients complained of deafness, audiometric tests were done in 93.7% of the patients excluding 6.4% who had intracranial complication. All of them (93.7% tested) had developed deafness; mild deafness (20.0%), moderate deafness (77.8%), and severe deafness (2.2%).

### Discussion

Ninety six CSOM patients of different age and sex were included in this study with definitive cholesteatoma after taking relevant history, clinical examination and investigation. In the present study, the highest number of cases belonged to the age group of 11-20 years (55.2%), and the number of males and females was 67.2% and 32.8%,

respectively. This is consistent with that reported in other studies.<sup>13-18</sup>

Almost all the patients presented with multiple symptoms. The most common symptoms were discharge from ear(s) (100.0%), hearing impairment (83.3%), earache (15.6%), fleshy mass in ear(s), etc. Of the patients, 67.6% cases were without complication, 26.0% with extracranial complication and 6.4% with intracranial complication. All the cases had a perforation either in the posterior superior marginal (66.5%) or in the attic region (33.5%). This findings are consistent with those in other studies.<sup>11,13,19-21</sup>

Most of the patients were having unilateral CSOM with cholesteatoma, in the right side (64.3%), left side (35.7%), and a few (4.2%) bilateral involvement. Although 83.3% of the patients complained of deafness, audiometric tests were done in 93.7% of the patients excluding 6.3% who had intracranial complication. All of them (93.7% tested) had developed deafness; mild deafness (20.0%), moderate deafness (77.8%), and severe deafness (2.2%). The results are similar to results reported by others.<sup>13,22-24</sup>

It was suggested that peoples living in rural and slum areas having swimming habit in ponds and rivers suffered more from cholesteatoma than who resides in the city and baths in supply water.<sup>13</sup> However, the findings of this study involving rural population showed similar pattern of clinical presentation and complication of CSOM with cholesteatoma with the pattern involving urban population in other study.<sup>13</sup>

In conclusion, the pattern of clinical presentation and complication of CSOM with cholesteatoma in rural setting may be similar with the pattern involving urban population and early diagnosis of CSOM with cholesteatoma by taking proper history and clinical examination, and timely surgical intervention may be helpful to eradicate the disease and prevent complications.

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**Suggestion for citation of the above:**

*Islam MS, Gafur MA, Noor L, Islam MR. Clinical presentation and complication of chronic suppurative otitis media with cholesteatoma in a rural setting. Mediscope 2017;4(2):25-8.*