

# Frequency of Un-Safe Chronic Suppurative Otitis Media in Patients with Discharging Ear

Mushtaque Ali Memon, Salman Matiullah, Zeba Ahmed and Muhammad Saleem Marfani

## ABSTRACT

**OBJECTIVE:** To determine the frequency of un-safe chronic suppurative otitis media and its complications in patients with chronic discharging ear.

**METHODS:** This study was carried out in the Department of Otorhinolaryngology, Civil Hospital Karachi, Sindh - Pakistan between January 2004 and June 2006. This study included 390 cases of chronic discharging ears attending out patient department. All were examined according to protocol, and relevant investigations were carried out. 107 cases underwent mastoid exploration and were observed for cholesteatoma, granulations, aural polyps and their complications. A structured questionnaire was designed to record all information which was later analyzed.

**RESULTS:** Majority of patients was belonging to poor families. Female-male ratio was 1.2:1. Age range was between 6 months and 70 years. Most of the patients presented with discharging ears. Central perforation was seen in 89% cases. One hundred seven cases (27.5%) underwent mastoid exploration, in which cholesteatoma was found in 11.5% cases. Ossicular damage was the commonest complication in all cases having cholesteatoma, while 1% cases presented with mastoid abscess, 1.5% with exposed facial nerve, 1.2% with exposed sigmoid sinus and 0.25% with Bezold abscess. Intracranial complications were seen in nine patients.

**CONCLUSION:** Cholesteatoma was found to be associated with most of the complications in cases of un-safe type of C.S.O.M. The complication rate in this study is lesser than that observed in our neighboring countries like Bangladesh, but still higher as compared to the developed countries. Cholesteatoma was also found in two cases having central perforation which is unusual presentation.

**KEY WORDS:** Chronic suppurative otitis media. Unsafe otitis media. Cholesteatoma. Complications.

## INTRODUCTION

Chronic suppurative otitis media is a common ailment in the specialty of ear, nose and throat. Unsafe type of this disease, previously known as attic-antral type usually presents with marginal perforation having cholesteatoma which is the hallmark of this affection and also considered as the complication producing element.<sup>1,2</sup> Bone erosion is an established complication of this type and may involve extracranial as well as intracranial structures.<sup>3</sup> In the past, people were relatively less aware regarding the complications of this disease and so less effective treatment measures were employed resulting in high rate of complications. In the modern era, frequency of complications is markedly reduced due to aggressive treatment but still the harmful effects of the unsafe disease may produce disaster.<sup>4</sup> In developing countries, the complications are comparatively higher leading to any disability or even death.<sup>5</sup> Unsafe chronic suppurative otitis media is potentially dangerous due to its capability of bone

destruction; this action allows spreading of the infection beyond the middle ear and pneumatizing temporal bone and may result in extracranial and intracranial complications.<sup>6</sup> The objective of this study was to determine the proportion of unsafe chronic suppurative otitis media and its complications.

## PATIENTS AND METHODS

This study was conducted in Department of Otorhinolaryngology, Civil Hospital Karachi between January 2004 and June 2006. Total 390 consecutive cases of chronic suppurative otitis media irrespective to age, sex and socioeconomic status (monthly income Rs. 10,000 from all sources were made the criteria for low and high status) were selected from out patients department. Previously operated, immuno-compromised and patients having malignant diseases were excluded. In all patients, a detailed history was taken followed by complete examination of ear, nose and throat. Otoscopy, routine investigations and audiological assessment were performed in all cases whereas

the examination under microscope was done in selected cases. Conservative treatment was given to most of the patients with regular follow up. Patients with failure to medical treatment, having recurrent discharge and those who were presented with non central perforation underwent surgical exploration with special attention to complications occurring during the disease process. Surgical procedures included myringoplasty and radical or modified radical mastoidectomy. The choice of surgical procedure was dependent on status of the ear. However, canal wall down operation was preferred in all cases with attic-antral disease. A structured questionnaire was designed to record all information which was later analyzed.

**RESULTS**

The age of patients was ranging between 6 months and 70 years with majority (50%) being between 10-30 years as shown in **Table I**. There was female predominance making up of 55.89% of total patient population. Majority of the patients (68%) was having poor socioeconomic status. Majority of patients presented with wet ear (86%) while the rest (14%) had dry ear as shown in **Table II**. Central perforation was seen in 89% cases while only 11% cases were having marginal or attic perforation as reflected in **Figure I**. Surgical exploration was required in 27.5% of the patients as shown in **Table III**. Unsafe disease with cholesteatoma, granulation tissue and polypoidal mucosa was observed in only 11.5% of the patients as shown in **Table IV**. Ossicular damage was the most common complication and observed in all patients having unsafe disease. A detailed account of complications is mentioned in **Table V**.

**TABLE I:  
AGE DISTRIBUTION**

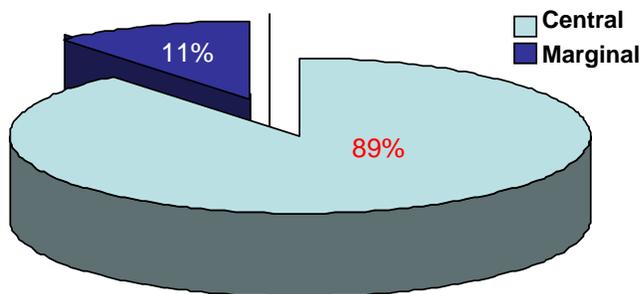
Age	No. of Patients	Percentage
6 months-10 years	82	21.03%
11 – 20 years	90	26.92%
21 – 30 years	105	23.08%
31 – 40 years	45	11.54%
41 - 50 years	36	09.23%
51 – 60 years	24	06.15%
61 – 70 years	08	02.05%

Mean Age =32.77 (Standard Deviation) Sd =15.69

**TABLE II:  
CONDITION OF EAR (n=390)**

Condition	No. of Patients	%
Dry Ear	55	14%
Wet Ear	335	86%

**FIGURE I:  
TYPE OF PERFORATIONS**



**TABLE III:  
TREATMENT MODALITY (n=390)**

Modality	No. of Patients	%
Conservative	283	72.5%
Exploration	107	27.5%

**TABLE IV:  
PATHOLOGY IN EAR (n=390)**

Pathology	No. of Patients	%
Safe disease without Cholesteatoma	345	88.5%
Unsafe disease with Cholesteatoma	45	11.5%

**DISCUSSION**

The rate of complications, especially more serious intracranial complications, observed in developing countries is significantly more than those observed in studies from the developed countries.<sup>7</sup> If we compare the results within study, the frequencies of cholesteatoma and its complications were comparatively lower in initial 200 cases<sup>8</sup> as compared to the last 190 cases. This is due to more selective and strict criteria for inclusion in patients undergoing mastoid exploration. Chronic suppurative otitis media is a disease of young adults and about 50% of patients were between the ages of 11-30 years, which is comparable to study of Alam J et al.<sup>9</sup> Poor hygiene, malnutrition and over crowding are main basis for the spread of the disease.<sup>9</sup> According to the present series, 68% patients

**TABLE V:**  
**COMPLICATIONS OBSERVED ON EXPLORATION**  
**(n=390)**

Complication	No. of Patients	%
<b>Extracranial</b>		
Ossicular damage	45	11.5%
Mastoid Abscess	4	1.02%
Exposed Facial Nerve	6	1.53%
Exposed Sigmoid Sinus	5	1.28%
Bezold Abscess	1	0.25%
<b>Intracranial</b>		
Cerebritis	2	0.5%
Meningitis	1	0.25%
Subdural Abscess	3	0.76%
Brain Abscess	2	0.5%
Sigmoid Sinus Thrombosis	1	0.25%

belonged to poor families and this is comparable to study of Chaudhary MA et al.<sup>10</sup> Dry ears were found in 14% cases and is comparable to the study of Datta PG et al.<sup>5</sup> Cholesteatoma along with granulation tissue and polypoidal mucosa is the characteristic feature of unsafe chronic suppurative otitis media, which was found in 11.5% cases (45 cases) and this can be favorably compared to previous studies in our country and outside.<sup>4,11,12,13</sup> In comparison to the results of initial 200 cases, this figure of complications still appears to be somewhat alarming.<sup>8</sup> An unusual finding of this study is the presence of central perforation in two cases of unsafe disease and this feature was also observed in an earlier study<sup>14</sup> but this is contrary to the common observation of marginal perforation as a characteristic feature of unsafe disease. The most important concern in our study is the rate of complications rendered by unsafe variety of chronic suppurative otitis media, which are 4.10% extracranial complications excluding ossicular chain damage found in all cases of unsafe disease and 2.3% intracranial complications. These findings are contrary to the series by Chaudhri MA et al<sup>9</sup> study done at Bangladesh but are comparable with series of Osama U et al<sup>15</sup> study from Turkey done in last decade showing 1.35% of extracranial and 1.97% of intracranial complications which is slightly less than our series.

## CONCLUSION

Presence of cholesteatoma is the most important fea-

ture in association with aural polyps and granulation tissue likely to lead to the complications in cases of un-safe type of chronic suppurative otitis media. The complication rate in this study is lesser than that observed in our neighboring countries like Bangladesh which is due to the late presentation and advanced disease but still higher as compared to the developed countries. Cholesteatoma was also found in two cases having central perforation which is unusual presentation.

## REFERENCES

- Hameed A, Ahmad M, Amjad M, Shakeel A, Rizvi A. Ossicular defects in cholesteatomatous chronic suppurative otitis media. *Pak Postgraduate Med J.* 1998; 9:35-7.
- O'Leary S, Veldman JE. Revision surgery for chronic otitis media: recurrent- residual disease and hearing. *J Laryngol Otol.* 2002; 116 (12): 996-1000.
- Cheema KM, Maqbool M, Hameed A. Surgical management of chronic suppurative otitis media. *Annals* 1998; 4: 23-4.
- Alam J, Zaidi SH, Mohammad IA, Hasan S, Siddiqui IA, Ahmed R et al. Is cholesteatoma on the decline? *Pak J Otolaryngol.* 1999;15:2-3.
- Datta PG, Chaudhri RKD, Newton VE, Amin MN. Epidemiological survey of chronic suppurative otitis media in Bangladesh. *Specialist, Pak J Med Sci,* 1995;12:31-7.
- Mahida KH, Jalisi M. Ossicular damages in chronic suppurative ear disease. *Pak J Otolaryngol.* 1998;14:53-4.
- Khemani A, Akhund AA, Shaikh RB. Bacteriology and it's free effects on clinical presentation and treatment results of chronic suppurative otitis media. *Medical Channel.* 1999; 1(5):35-8.
- Memon MA, Thaheem K, Marfani MS. Frequency and complications of cholesteatoma in cases of chronic suppurative otitis media. *Pak J Otolaryngol.* 2005; 21:48-9.
- Alam J, Udaipurwala IH, Jalisi M. Surgical management of CSOM: experience at Civil Hospital Karachi. *Pak J Otolaryngol.* 2000; 16:36-9.
- Chaudhri MA, Alaudin M. Comparative study between tubotympanic and atticofacial types of chronic suppurative otitis media. *Bangladesh Med Res Counc Bull.* 2002; 28(1):36-44.
- Lekagul. Proceedings of the IMPACT Asia-Pacific regional meeting at Hong Kong, March 1998; Voltas Brothers, Mumbai India, 1998.
- Garap JP, Dubey SP. Canal wall down mastoidectomy

- tomy: experience in 81 cases. Otol Neurotol. 2001; 22 (4): 451-6.
13. Editorial. Surgery of middle ear cholesteatoma. Indian J Otolaryngology. 1999; 5(3): 115-9.
14. Sheehan P, Donnelly M, Kane R. Clinical features of newly presenting cases of CSOM. J Laryng Otol. 2001; 115(12): 962-6.
15. Osma U, Cureoglu S, Hosoglu S. The complications of the chronic otitis media. Report of 93 cases. J Laryngol Otol. 2000; 114(2):97-100.



*AUTHOR AFFILIATION:*

**Dr. Mushtaq Ali Memon** (*Corresponding Author*)

Assistant Professor, Department of Otorhinolaryngology,  
Isra University Hyderabad, Sindh - Pakistan.  
E-mail: drmushtaqmemon@yahoo.com

**Dr. Salman Matiullah**

Associate Professor, Department of Otorhinolaryngology  
Dow University of Health Sciences, Karachi.

**Dr. Zeba Ahmed**

Assistant Professor, Department of Otorhinolaryngology  
Dow University of Health Sciences, Karachi

**Prof. Muhammad Saleem Marfani**

Department of Otorhinolaryngology  
Dow University of Health Sciences, Karachi.