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A study on chronic otitis media in tertiary care center

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ABSTRACT

Background: Chronic otitis media (COM) is a serious healthcare concern worldwide, because of the distress and economic burden to the patient and their family. Temporal bone pneumatization plays an important role in etiology, behaviour, course and outcome of COM. Pneumatisation gets poorer with growing chronicity of the disease.
Methods: A retrospective study was conducted between March 2015-March 2017 on female patients visiting with COM, at ENT department Kasturba Gandhi Hospital, Madras Medical College. The records were analysed of the age, duration of symptoms, associated complaints, pure tone audiogram, computerised tomography of temporal bone, mastoid surgery done according to the disease process affecting the ear.
Results: 35 female COM patients were analysed, most common age group is between 31-40 years in 14 patients. There hearing loss was mild category in 27. There were 27 cases of mucosal type of chronic otitis media and 8 cases of squamous type. The CT scan with sclerosis of mastoid was the common finding.
Conclusions: In exclusive study on female patients with COM, the mucosal type of COM is common with mild hearing loss and sclerosed mastoid indicating the chronicity.

Keywords: COM, Female, Hearing loss, Duration

INTRODUCTION

Chronic Otitis Media is a serious healthcare concern worldwide, because of the distress and economic burden to the patient and their family. The most commonly observed clinical findings in otolaryngological practice is discharging ear in which perforations of tympanic membrane is the commonest, yet the patients hardly seek advice for deafness as the presenting symptom.[1] The diagnosis of chronic otitis media (COM) implies a permanent abnormality of pars tensa or flaccid, most likely a result of earlier acute otitis media, negative middle ear pressure or otitis media with effusion. COM equates with the classic term chronic 'suppurative 'otitis media which is no longer advocated, as COM is not necessarily a result of 'gathering of pus'.[2]

The World Health Organization (WHO) definition requires only 2 weeks of otorrhea.[3] It is estimated that 6% of Indian population suffers from chronic ear disease.[4] This is significantly higher than the incidence reported in the Western countries which is about 1.8%.

Temporal bone pneumatization plays an important role in etiology, behaviour, course and outcome of COM. Many studies have been reported the correlation between middle ear disease and mastoid ear system. It is questionable whether hypocellularity results from previous middle ear disease, or the size of the cell system genetically determined.[5-10] The main purpose of operation in chronic suppurative is to obtain a permanently dry ear

and close the perforation. Traditionally, myringoplasty with mastoidectomy has been identified as an effective method of treatment of chronic ear infection resistant to antibiotic therapy.

The objective of the study was to analyse the disease characteristic of chronic otitis media in exclusive female population, with focus on the type of hearing loss and pneumatisation pattern in the computerised tomography.

METHODS

A retrospective analysis, was conducted between March 2015- March 2017 on female patients visiting our ENT department at Institute of Obstetrics and Gynaecology, Kasturba Gandhi Hospital/Madras Medical College, with history of ear discharge and hearing loss. The records were analysed of the age, duration of symptoms, associated complaints, pure tone audiogram, computerised tomography of temporal bone, mastoid surgery done according to the disease process affecting the ear after relevant investigations for general anaesthesia. The statistical analysis was done using Mann Whitney Wilcoxcon analysis.

Inclusion criteria

Female gender, history of chronic otitis media

Exclusion criteria

Male gender.

RESULTS

There were totally 35 cases of female patients and most common age group was reported in 31-40 years in 14 patients, followed by 21-30 years in 8 patients (Table 1).The average mean of age is 32 years. The most common duration reported in our study was more than 5 years in 13 patients, followed by 1-5 years in 9 patients (Table 2). The hearing loss was reported as mild category in 27 patients and moderate in nature in 8 cases (Table 3).

Table 1: Age wise distribution of patients.

Age in years	Number of patients
11-20	5
21-30	8
31-40	14
41-50	4
51-60	2
61-70	2
Total	35

The inferential analysis of hearing loss with Mann Whiteny Wilcoxon analysis was done of this 35 cases with mean average 36.45±5.32 standard deviation. There were 27 cases of mucosal type of chronic otitis media and 8 cases of squamous type. The CT scan with sclerosed and otomastoiditis was the common finding (Figure 1-4). Right ear was affected by disease and mastoidectomy with tympanoplasty/ modified radical mastoidectomy was done in 21 cases , while in left ear in 14 cases (Table 4).

Table 2: Duration of ear discharge.

Duration	Number of patients
1-6 months	7
6 months-1 year	6
1-5 years	9
More than 5 years	13
Total	35

Table 3: Severity of hearing loss.

Severity	Number of patients
Mild	27
Moderate	8

Table 4: Operated side of ear.

Right ear	Left ear
21	14

DISCUSSION

COM is a quite common ENT problem worldwide, especially in developed countries. It is more common in rural than urban areas, is associated with poor hygiene, illiteracy, common among the middle and lower income groups.

The majority of population in our study belonged to 31-40 years with mean age of 32 years similar to study by Manchi et al study age group mean was 32.9 and study by Celina et al, where the majority of population belonged to younger age group (21-30 years) and predominantly men.[11,12] Our study is an exclusive study on female COM patients. Ginni et al observed patients of squamousal COM are mosly affected in 3rd decade.[13] While observations of Memon, chronic suppurative otitis media is a disease of young adults and about 50% of patients were between ages 11-30 years.[14]

The hearing loss was mild in 27 cases indicating not much ossicular necrosis as Feng reports that air conduction threshold air bone gap are the most reliable indicators to identify ossicular conditions in patients with CSOM. The air conduction threshold air bone gap in patients with ossicular discontinuity are higher than in patients with ossicular continuity.[15] The proposed mechanism for erosion is chronic middle ear inflammation as a result of overproduction of cytokines-tumour necrosis factor (TNF)-alpha, interlukin 2, fibroblast growth factor and platelet derived growth factor, which promote hyper vascularisation, osteoclast activation and bone resorption causing ossicular damage.

Tumour necrosis factor also promotes neovascularisation and hence granulation tissue formation.

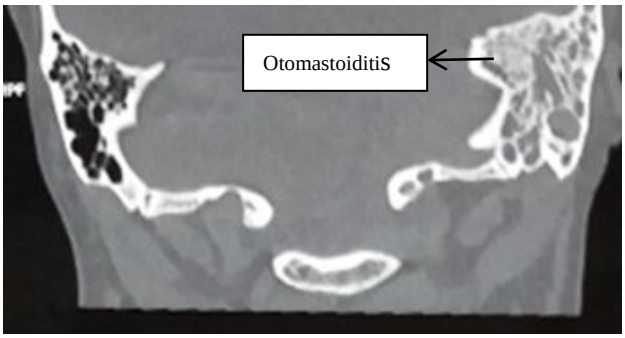

Figure 1: Right side pneumatized the non-diseases ear, left side otomastoiditis.

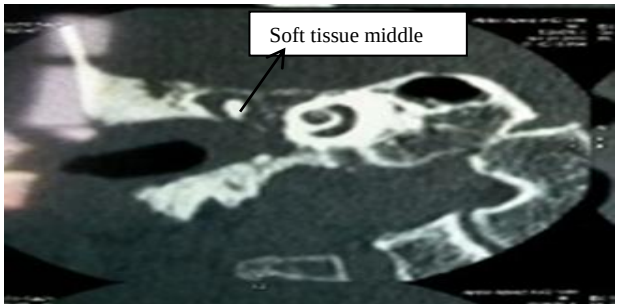

Figure 2: Soft tissue in middle ear.

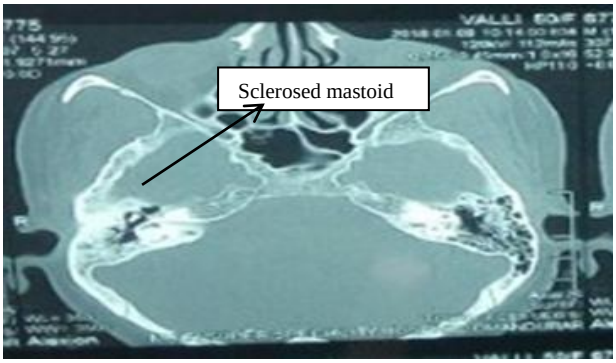

Figure 3: Sclerosed right mastoid.

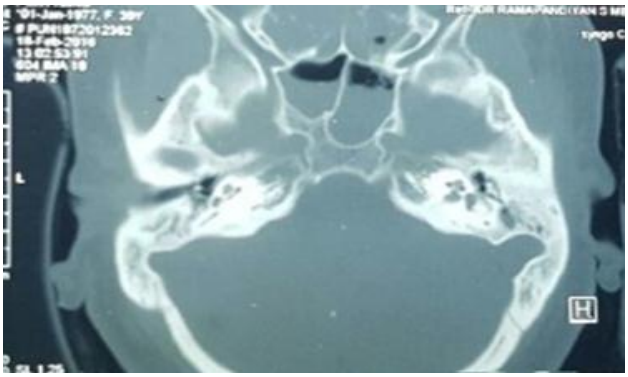

Figure 4: Sclerosed mastoids both sides.

In our study pneumatisation of affected ear was sclerosed in majority of cases which is in agreement with other studies as pneumatisation gets poorer with growing chronicity of the disease, similar where 78.75 % of mastoid sclerosed in study by Amitava.[16] In our study majority of cases were of mucosal type of COM hence cortical mastoidectomy with tympanoplasty was done and in 7 cases modified radical mastoidectomy was done were 2 cases were revision mastoidectomy. None of the patient had any postoperative complications.

CONCLUSION

In the study exclusive of female population of patients with COM, the mucosal type of COM is common having mild hearing loss suggesting that ossicular necrosis is low in female population. In childhood onset COM, the hearing loss is moderately severe with some mixed component and the pneumatisation is sclerosed indicating the chronicity of the disease.

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Conflict of interest: None declared
Ethical approval: The study was approved by the Institutional Ethics Committee

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