CLINICAL AND AUDIOLOGICAL PROFILE IN CHRONIC OTITIS MEDIA- MUCOSAL TYPE

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ABSTRACT

BACKGROUND

Chronic otitis media is a common clinical condition seen by an otolaryngologist and is one of the leading causes for hearing impairment and ear discharge. It is a significant health problem in developing countries and every ENT surgeon should have thorough knowledge of its pathology, the risks and complications associated with it and the definitive management of such patients.

MATERIALS AND METHODS

Aprospective study was conducted to study the characteristic clinical and audiological profile in 100 patients diagnosed with chronic otitis media of mucosal type. All the patients were evaluated with detailed history taking and thorough clinical examination along with audiological examination.

RESULTS

The results showed that out of 100 patients, most of them belonged to third decade of age and presented most commonly with ear discharge (91%), followed by decreased hearing (65%) and earache (29%). Most patients had a tympanic membrane perforation of medium size (72%), which often involved the anteroinferiorand posteroinferior quadrants. On comparing with audiological results, perforations involving the posterior quadrant were seen to have greater hearing loss than anterior quadrant perforations.

CONCLUSION

In this study, we observed that chronic otitis media of mucosal type occurs most commonly in middle-aged population with unilateral ear involvement as a common finding and ear discharge being the most common symptom. Pars tensa perforations of tympanic membrane were often medium sized with size of perforation directly proportional to the degree of hearing loss and perforations involving posterior quadrant had greater hearing loss than anterior quadrant. Therefore, early diagnosis by complete history taking and detailed clinical and audiological examination helps in timely intervention by surgical management, thereby improving the quality of life.

KEYWORDS

Chronic Otitis Media, Clinical Profile, Audiological Profile.

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BACKGROUND

Chronic Otitis Media (COM) is defined as a stage of ear disease in which there is chronic infection of the middle ear cleft, i.e. eustachian tube, middle ear and mastoid associated with a non-intact tympanic membrane (e.g. perforation) and discharge, which is present for 2 weeks or longer.[1] Chronic otitis media is the most common cause of hearing impairment and ear discharge, thus forming a significant health problem in developing countries.[2] COM is a common disease encountered in ENT practice and a proper evaluation and treatment of COM can prevent the morbidity due to its complications.[3]

Thus, there is a need to have a standard protocol of characteristic clinical features and audiological evaluation of chronic otitis media. Otomicroscopy has helped in better understanding of the disease process and the advent of sophisticated audiological equipments has helped in accurate assessment of hearing loss.

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MATERIALS AND METHODS

A prospective study, which included 100 patients diagnosed with chronic otitis media, mucosal type was conducted in the Department of Otorhinolaryngology, Bangalore Medical College and Research Institute, between June 2015 and June 2016 with the primary aim of studying the characteristic clinical and audiological profile in patients with chronic otitis media of mucosal type.

Patients included in the study were between the age group 11 to 50 years with history of ear

discharge>3months and diagnosed as chronic otitis media of mucosal type. However, patients with history of otitis externa, history of previous ear surgery, congenital hearing loss, traumatic perforation of tympanic membrane and squamous type of COM were excluded from the study.

Data collected from patients included a detailed history and clinical characteristics including otomicroscopic examination followed by audiological evaluation.

RESULTS

Patients in our study belonged to age group of 11 to 50 years with a mean age of 28.4 years and majority of them belonged to age group of 21-30 years (63%). Among the 100 patients, 35 were male and 65 were female with a male:female ratio of 1:1.85. The major clinical symptom observed was ear discharge in 91 patients followed by decreased hearing in 65 patients, earache in 29 patients, while 17 patients had tinnitus and 7 patients had giddiness. Most patients showed pathology in the left ear (49%) followed by right ear (29%) and bilateral involvement in 22% of cases.

On otomicroscopic examination, we divided the size of perforation into large (involving all 4 quadrants), medium (involving 2-3 quadrants) and small (involving 1 quadrant).It was observed that 72 patients (72%) had medium-sized perforation, 15 patients (15%) had small-sized perforation and 13 patients (13%) had large-sized perforation as depicted in Figure 1.

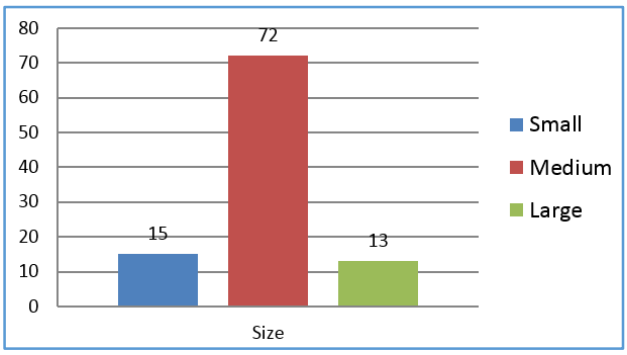

Figure 1. Size of Perforation

In this study, the site of perforation was categorised based on the quadrant involved into Anterosuperior (AS), Anteroinferior (AI), Posterosuperior (PS) and Posteroinferior (PI). In 48 patients (48%), the perforation involved PI+AI quadrant, 22 patients (22%) had AS+AI quadrant involvement, 8 patients (8%) had AI quadrant involvement, 7 patients (7%) had PI quadrant involvement and 2 patients (2%) had PS+PI quadrant involvement. Perforation involving all 4 quadrants (AS+AI+PS+PI) was seen in 13 patients (13%). Table 1 depicts the site of perforation involving various quadrants.

Site of Perforation	Number of Patients	Percentage
PI+AI	48	48
AS+AI	22	22
AS+AI+PS+PI	13	13
AI	8	8
PI	7	7
PS+PI	2	2
Total	**100**	**100**

Table 1. Site of Perforation

Based on the audiometric findings, patients with hearing loss were categorised to have mild (26-40 dB), moderate (41-55 dB), severe (56-70 dB), very severe (71-90 dB) and profound (>90 dB) hearing loss. Most patients had moderate hearing loss (60%), while 31 patients (31%) had mild hearing loss and only 9 patients (9%) had severe hearing loss as depicted in Figure 2.

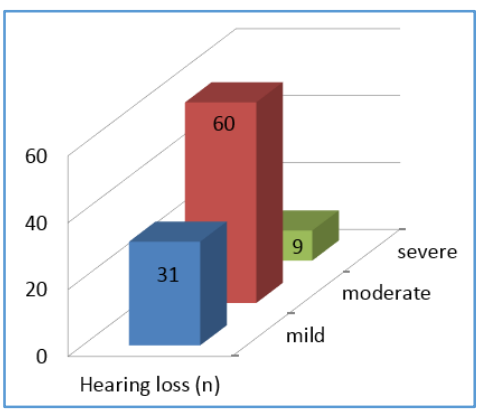

Figure 2. Hearing Loss

On assessing the relation between the size of perforation and hearing loss, out of 13 patients with large perforation, 7 patients (77.8%) had severe Conductive Hearing Loss (CHL), while 48 patients (80%) out of 72 patients with medium-sized perforation had moderate CHL and patients with small-sized perforation had mild CHL (25.8%). Table 2 depicts the relation between hearing loss and size of perforation.

Perforation Size	Mild CHL(%)	Mod. CHL(%)	Severe CHL(%)	Total(n)
Large	3.2	8.3	77.8	13
Medium	71	80	22.2	72
Small	25.8	11.7	0	15
Total	**100**	**100**	**100**	**100**

Table 2. Relation between Hearing Loss and Size of Perforation

On comparing the degree of hearing loss with respect to the site of perforation, 71% patients with mild CHL had AI+AS quadrant involvement while 77.8% patients with

severe CHL had AS+AI+PS+PI quadrant involvement.22.2% of patients with severe CHL had PS+PI quadrant involvement as shown in Table 3.

Site of Perforation	Mild CHL (%)	Mod CHL(%)	Severe CHL(%)	Total(n)
AI	25.8	0	0	8
AI+AS	71	0	0	22
AS+AI+PS+PI	3.2	8.3	77.8	13
PI	0	11.7	0	7
PI+AI	0	80	0	48
PS+PI	0	0	22.2	2
Total	**100**	**100**	**100**	**100**

Table 3. Relation between Hearing Loss and Site of Perforation

DISCUSSION

A study on clinical profile of COM mucosal type with special reference to audiometric pattern in relation with site and size of tympanic membrane perforation was carried out in 100 patients.

In this study, most patients belonged to the age group of 21-30 years (63%) with a mean age of 28.4 years. Similar results were observed in the study conducted by Mohammed Shafiqul Islam et al[4]where majority of patients belonged to age group of 21-30 years (38.7%). The present study shows a female preponderance of 65% while males contributed to 35% of study population. In a similar study by Priya et al,[5] out of 88 patients who were studied, 47 were females and 41 were males. In a study conducted by Nishant Kumar et al,[6] both sexes were almost equally affected with slight female preponderance wherein 52% of patients were female and 48% of patients were male.

The commonest complaint that the patients presented in our study was that of ear discharge (91%), followed by decreased hearing (65%), earache (29%), tinnitus (17%) and giddiness (7%). In a similar study conducted by C.L.Bhusal et al,[7] all the patients complained of intermittent otorrhoea and hearing loss. Only 20% of them complained of tinnitus in the affected ears. Shrestha B.L et al[8] observed that the most common clinical presentation of COM of mucosal type was ear discharge (98%) followed by decreased hearing (80.7%). FitrieDesbassarie W et al[9] in their study observed that 95.3% patients had ear discharge as their chief complaint accompanied by hearing loss in 53.5% patients.

Most patients had pathology in the left ear (49%), followed by right ear (29%) and bilateral involvement in 22% of patients. Muhammad Rafiqueet al[10] in their study observed that out of 90 cases, 45 patients had pathology in the left ear while 35 patients in the right ear. Nishant Kumar et al[6] (2011) came to the similar consensus in their study that left ear was more commonly involved (58.33%).

On otomicroscopic examination for the size of perforation, it was observed in our study that 72 patients (72%) had medium-sized perforation followed by 15 patients (15%) and 13 patients (13%) having small and large-sized perforation respectively based on number of quadrants involved. This result corresponds to a similar study by Mohammed Shafiqul Islam et al[4] who noted medium-sized perforation to be more common.

On examination for the site of perforation, it was observed that 48 patients (48%) had posteroinferior+anteroinferior quadrant involvement, 22 patients (22%) had anterosuperior+anteroinferior quadrant involvement and 13 patients (13%) had involvement of all the quadrants. Similar observations were made by C.L.Bhusalet al[7] (2004) that majority of the perforations involved the posteroinferior+anteroinferior quadrants followed by anterosuperior+anteroinferior and all four quadrants.

In our study, on comparing audiometric findings with respect to size of perforation, it was observed that patients with large-sized perforation involving all 4 quadrants (13 patients) had severe conductive hearing loss (77.8%), while patients with medium-sized perforation (72 patients) had moderate CHL (80%) and patients with small-sized perforation (15 patients) had mild CHL (25.8%). Thus, increase in size of perforation had directly proportional increase in hearing loss, which is supported by observations by Titus S Ibekwe et al[11](2009), who concluded that size of perforation correlate positively with the magnitude of hearing loss. Similar results were observed by Hanaro Parket al[12](2015) who inferred that the mean AB gap significantly increases as the size of the perforation increases.

On comparing the audiological results with that of the site of perforation, 71% patients with mild CHL had AI+AS quadrant involvement while 77.8% patients with severe CHL had AS+AI+PS+PI quadrant involvement. 22.2% of patients with severe CHL had PS+PI quadrant involvement. Thus, perforations of pars tensa involving posterior quadrant had greater hearing loss than anterior quadrant. Our results are comparable with the study conducted by Mohammed Shafiqul Islam et al[4](2010) who observed that posterior quadrant perforations had more hearing loss.

CONCLUSION

Considering the observations of the present study, we can conclude that chronic otitis media of mucosal type occurs most commonly in middle-aged population with unilateral ear involvement as a common finding and ear discharge being the most common symptom. Pars tensa perforations of tympanic membrane were often medium-sized with size of perforation directly proportional to the degree of hearing loss and perforations involving posterior quadrant had greater hearing loss than anterior quadrant. Therefore, early diagnosis by complete history taking and detailed clinical and audiological examination helps in timely intervention by surgical management, thereby improving the quality of life.

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