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Different Types of Presentation of Chronic Suppurative Otitis Media (CSOM)

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Abstract **Original Research Article**

Objectives: To evaluate different types of presentation of tubotympanic and atticoantral varieties of chronic suppurative otitis media (CSOM). ***Methods:*** It was a prospective study conducted in the department of otolaryngology & Head Neck Surgery, Bangabandhu Sheikh Mujib Medical University (BSMMU) and Dhaka Medical College Hospital (DMCH), Dhaka, from September 2008 to February 2009. Fifty cases were selected by random sampling. ***Results:*** The tubotympanic type was more common presentation than the atticoantral type. Most common extracranial complication was mastoid abscess, followed by postauricular sinus. Most common intracranial complication of CSOM was meningitis. Tubotympanic variety had mild (26-40dB) hearing loss and atticoantral variety had moderate (41-55dB) hearing loss. Cholesteatoma and facial nerve palsy were found 78.94% and 5.26% respectively. ***Conclusion:*** Tubotympanic variety of disease is more common than atticoantral type of disease. Complications are associated with atticoantral diseases.

Keywords: Chronic suppurative otitis media, Tubotympanic, Atticoantral, Deafness.

INTRODUCTION

The tubotympanic disease is characterized by the presence of intermittent and mainly mucoid or mucopurulent discharge which is precipitated by an upper respiratory tract infection or may follow entry of water through perforation. Central perforation in the Pars Tensa of varying size and position is seen in this disease. In this condition the risk of developing complications such as intracranial sepsis is very rare but according to Browning some cases of intracranial abscess were associated with active tubotympanic disease[1, 2].

Atticoantral disease most commonly involves the epitympanum. The typical feature of atticoantral disease is the presence of cholesteatoma [3].

The degree of hearing loss is more in atticoantral disease associated with cholesteatoma [4]. Non marginal perforation with intact ossicular chain shows hearing loss is 10-30 dB. In posterosuperior marginal perforation with disruption of ossicular chain hearing loss is 40-60 dB and in total or subtotal perforation with loss of malleus and incus, the stapes remaining mobile, hearing loss is 60-80 dB [5, 6]. The long process of the incus, stapes crurae, body of incus and manubrium are involved with resorptive osteitis in that order of frequency. The reason that the long process of the incus and stapes super structure is most frequently affected is likely to be due to their delicate structure and location rather than their tenuous blood supply [7].

OBJECTIVE

General objective

To evaluate different types of presentation of tubotympanic and atticoantral varieties of chronic suppurative otitis media (CSOM).

Specific objective

- To identify typesof chronic suppurative otitis media.
- To detect clinical features of Tubotympanic type and Atticoantral varieties of chronic suppurative otitis media.
- To find out typesof deafness of two varieties ofchronic suppurative otitis media.

METHODOLOGY

Type of study	**Prospective study**
Place of study	Department of otolaryngology & Head Neck Surgery, Bangabandhu Sheikh Mujib Medical University (BSMMU) and Dhaka Medical College Hospital (DMCH), Dhaka,
Study period	September 2008 to February 2009
Study population	Fifty cases were selected by random sampling. Out of these nineteen cases were atticoantral and thirty one cases were tubotympanic variety.
Sampling technique	Purposive

INCLUSION CRITERIA

- Patients of Chronic suppurative otitis media of both types Aged 7-55 years.
- From inpatient department.

EXCLUSION CRITERIA

- Patient below 7 years and above 55 years of age.
- Patients with inadequate information,
- Outdoor patients, Otitis Media with Effusion, Cleft palate and Down's syndrome.

METHOD

- During the study, detail history of the patient has been taken in a prescribed data sheet with the informed consent of the patient or from the patient's guardian. Each of the patient was under went thorough clinical examinations. Otological and microscopic examination findings were recorded and plotted on the data sheet. Some important relevant investigations were done and recorded. All the Collected data were analyzed properly.

DATA ANALYSIS

- Statistical analysis was performed using the Statistical package for social science SPSS version 15.0. A descriptive analysis was performed for clinical features and results were presented as mean ± standard deviation for quantitative variables and numbers (percentages) for qualitative variables.

RESULTS

In figure-1 shows age distribution of the patients where the youngest patient presented with CSOM was 7 years old and eldest patient was 50 years old. Maximum tubotympanic type of CSOM was noted in 2nd and 3rd decades and maximum atticoantral type was seen in 2nd decade. The following figure is given below in detail:

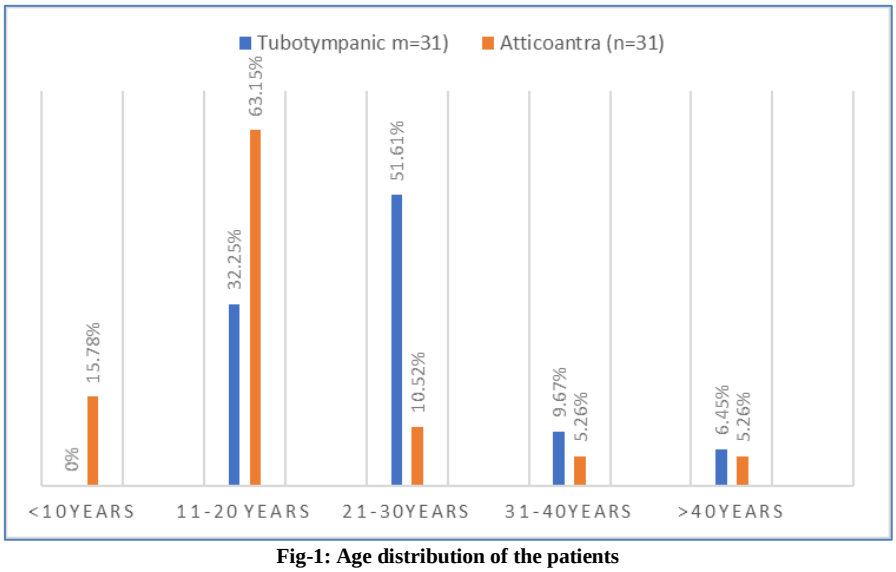

Fig-1: Age distribution of the patients

In figure-2 shows gender distribution of the patients where male patients were more affected (56 %) than the females (44 %). The following figure given below in detail:

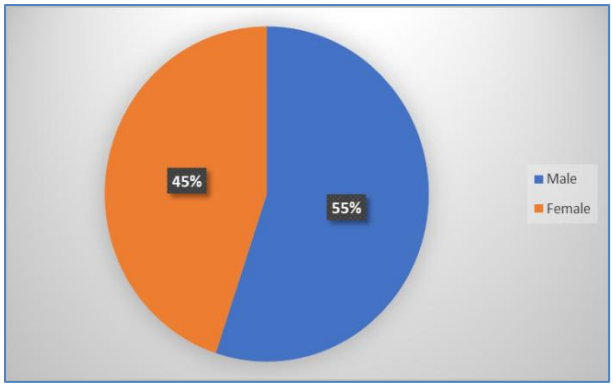

Fig-2: Gender distribution of the patients

In table-1 shows Distribution of types of CSOM (n=50) where Tubotympanic variety (62%) was more common in patients. The following table given below in detail:

Table-1: Distribution of types of CSOM (n=50)

Types	No. of patients	Percentage (%)
Tubotympanic	31	62%
Atticoantral	19	38%
Total	50	100%

In table-2 shows distribution of the patients according to clinical features of Tubotympanic type where most of the patients were presented with multiple symptoms. Majority of cases had the complaints of hearing impairment and aural discharge. The following table given below in detail:

Table-2: Distribution of the patients according to clinical features of Tubotympanic type

Symptoms/sings	No. of patients	Percentage (%)
Aural discharge	17	54.82%
Dry ear	14	45.15%
Hearing impairment	31	100%
Earache	7	22.57%
Tinnitus	8	25.8%
Itching	11	35.47%
Mucosal polyp	3	9.675%

In table-3 shows distribution of the patients according to clinical features of Atticoantral variety where most of the patients were presented with multiple symptoms. All had the complaints of hearing impairment and aural discharge. Cholesteatoma and facial nerve palsy was found 78.94% and 5.26% respectively. The following table given below in detail:

Table-3: Distribution of the patients according to clinical features of Atticoantral variety

Symptoms / Signs	No. of patients	Percentage (%)
Aural discharge	19	100
Hearing impairment	19	100
Earache	12	63.15
Fever	13	68.41
Headache	12	63.15
Tinnitus	4	21.05
Vertigo	4	21.05
Vomiting	5	26.31
Diplopia	1	5.26
Signs		
Cholesteatoma	15	78.94
Granulation tissue polyp	4	21.05
Mastoid abscess	4	21.04
Post auricular discharging sinus	3	15.78
Neck rigidity	2	10.52
Facial nerve palsy	1	5.26

In table-4 shows character of discharge of tubotympanic type of CSOM where in tubotympanic type most of the cases discharge was profuse (94.1 %), mucoid (70%) and non-odorous (94%)

Table-4: Character of discharge of tubotympanic type of CSOM (n=17)

Odour		Amount		Nature			
Non-Odorous	Malodorous	Profuse	Scanty	Mucoid	Mucopurulent	Purulent	Blood; -Stained
16(94%)	1(5.88 %)	16(94.1%)	1(5.8%)	12(70%)	4(23.5%)	1(5.8 %)	---

In table-5 shows character of discharge of atticoantral type of CSOM where in atticoantral type of CSOM most of the cases discharge was scanty (84.2%), purulent (68.3%) and Malodorous (100%).

Table-5: Character of discharge of atticoantral type of CSOM (n= 19)

Odour		Amount		Nature			
Malodorous	Non-Odorous	Scanty	Profuse	Purulent	Blood Stained	Mucopurulent	Mucoid
19(100 %)		16(84.2%)	3(15.7%)	13(68.3%)	5(26%)	1(5.16%)	-

In figure-3 shows type of perforation of tympanic membrane where central and attic perforations were common presentation in tubotympanic and atticoantral disease respectively. The following figure given below in detail:

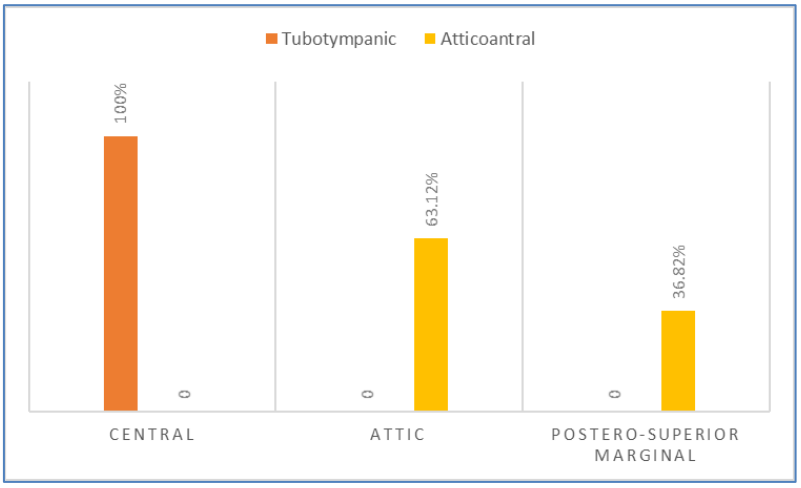

Fig-3: Type of perforation of tympanic membrane

In table-6 shows level of hearing impairment in both types of CSOM where audiogram was done in all cases quantify hearing loss which was graded from mild to profound. Out of 49 ears about 61.2% of ears of tubotympanic variety had mild (26-40dB) hearing loss and 45.45% of ears of atticoantral variety had moderate (41-55dB) hearing loss.

Table-6: Level of hearing impairment in both types of CSOM.

Types of CSOM	Level of hearing loss WHO (1980) recommended				
	Mild 26-40dB	Moderate 41-55dB	Moderately severe 56-70dB	Severe 71-90dB	Profound ➢ 90dB
Tubotympanic (n=49)	30(61.2%)	18(36.72%)	3(6.12%)		-
Atticoantral (n=22)	5(22.72%)	10(45.45%)	5(22.72%)	2 (9.0%)	-

DISCUSSION

Otoscopy and microscopic examinations showed central perforation in all patients with tubotympanic disease. In atticoantral type, 63.12% of perforations were in the attic and 36.82% were with marginal region. These findings were near to that of others series [4, 5].

Bilateral involvements were more frequent in tubotympanic disease (36%) than in atticoantral (6%) type. In atticoantral disease unilateral involvement was more (32%). Hearing impairment and aural discharge were the major symptoms of this series. All the patients had hearing impairment and all the patients of atticoantral and 54.82% of tubotympanic type had aural discharge.

In tubotympanic type, out of (18x2+13) 49 ears hearing loss was mild in 30 (61.2%) ears, moderate in 18 (36.72%) and moderately severe in 3 (6.12%) ears. No cases had profound hearing loss. In atticoantral type, out of (3x2+16) 22 ears 10(45.45%) had moderate and 5 (22.27%) had moderately severe hearing loss. This was in accordance with the text where hearing loss was 10-60 dB, according to the size & site of perforation and the condition of ossicular chain. Hearing impairment was more in atticoantral type than tubotympanic disease [9, 10]. In tubotympanic disease 67.60% ears had conductive hearing loss and 1.40% ears had mixed type of hearing loss. In atticoantral disease 28.16% ears showed conductive deafness and 2.80% ears with mixed deafness. Mixed type of hearing loss in tubotympanic disease was also reported by others [4].

Among the discharging ears in tubotympanic type of CSOM most of the cases discharge was profuse (94.1%), mucoid (70%) and non-odorous (94%) and in atticoantral type of CSOM most of the cases discharge was scanty (84.2%), purulent (68.3%) and malodorous (100%), which correlated with others [4, 6, 12]. Duration of otorrhoea was more than five years in majority of cases in both varieties of diseases, which was in consistent with other studies [4].

The signs & symptoms of complications are fever, severe headache, vomiting, neck rigidity, post auricular swelling or sinus, facial nerve palsy etc. Here the patients with atticoantral disease had fever in 68.41%, headache in 63.15%, vomiting in 26.31%, mastoid abscess in 21.04%, post auricular sinus in 15.78% and neck rigidity in 10.52% of cases.

CONCLUSION

Tubotympanic variety of disease is more common than atticoantral type of disease. Most common presentation in tubotympanic type of chronic suppurative otitis media is profuse, non-odorous, mucoid discharge with mild to moderate conductive hearing loss with central perforation of tympanic membrane. The atticoantral disease is almost always associated with cholesteatoma scanty, purulent, malodorous discharge with moderate to severe conductive deafness with attic or posterosuperior marginal perforation of tympanic membrane. Frequency of both extracranial and intracranial complications of chronic suppurative otitis media is commonly found in atticoantral disease.

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