



CHRONIC SUPPURATIVE OTITIS MEDIA ATTICO - ANTRAL TYPE IN THE PRESENT ERA: AN OVERVIEW

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ABSTRACT

Introduction: Chronic suppurative Otitis media is the result of an initial episode of Otitis media and is characterised by a persistent discharge from the middle ear through a tympanic membrane perforation. It is an important cause of preventable hearing loss, particularly in the developing world. Chronic suppurative Otitis media is usually classified into two main types-tub tympanic and Attico-antral diseases. Tubotympanic type is characterised by a perforation in the pars tensa and is generally called safe type of CSOM. The Attico antral type is called unsafe or dangerous type because of the associated complications which may be life threatening at times. These complications are mainly due to granulation tissue and cholesteatoma causing bone erosion and necrosis which may involve vital structures such as facial nerve, inner ear and intra cranial components.

Material Methods: This prospective study was conducted in the Department of ENT Head and Neck Surgery SKIMS MCH Bemina Srinagar J & K on 360 patients of CSOM over a period of 5 years. The details of clinical examination, routine investigations, audiometry, examination under microscope and findings of HRCT temporal bone were recorded. The following criteria were used for including the patients in study.1.Patients of either sex, aged 70 years.2. Patients having following findings on clinical records (a) Central Perforation. (b) Marginal / Attic Perforation.(c) Retraction Pocket (d)Erosion of outer attic wall.(e)Presence of cholesteatoma, Granulation tissue and or Aural polyps. 3.Healthy patients without any intracranial complications. As per operation records in the patients with dry central perforation were managed with tympanoplasty and patients having CSOM with active mucosal disease were managed with cortical mastoidectomy with tympanoplasty. The patients with Retraction pockets, cholesteatoma, were managed with modified radical mastoidectomy with tympanoplasty.

Results: There were 360 patients, 130 (36.1 %) were males and 230 (63.9 %) were females. The age of the patients ranged from 8-65 years with majority 128 (35.5%) being between 21-30 years of age. The youngest patient was 8 years old and the oldest patient was 65 years of age. Most of the patients had unilateral disease 302 (83.9%) Table 1. Central perforation was noted in 266 (73.9 %) cases, marginal or attic perforation in 73 (20.3%) cases, retraction pocket in 55 (15.3 %) cases, erosion of outer attic wall in 89 (24.7%) cases, cholesteatoma flakes in 81 (22.5%) cases, granulation tissue in 33 (9.16%) cases and aural polyps in 29 (8.05%) cases were seen in CSOM Table 2. Ossicular damage was observed in all cases having unsafe CSOM, Incus was the most commonly damaged ossicle and were seen in 52 (55.3%) cases, followed by Malleus in 41 (43.6%) cases, stapes in 18 (19.14 %) cases and absent ossicles in 8 (8.5 %) of cases Table 3.Most of the cases 334 (92.8%) had conductive hearing loss and 26 (7.2 %) had mixed hearing loss. Tympanoplasty was done in 206 (57.2 %) of patients, cortical mastoidectomy and Tympanoplasty in 60 (16.7 %) of patients and Modified Radical Mastoidectomy with tympanoplasty in 94 (26.1%) of patients.

Conclusion: Despite effective antibiotics, trained manpower, adequate facilities unsafe CSOM continues to affect a sizeable fraction of population in developing countries. A lot of stress needs to be put on early reorganisation of the disease, as patients diagnosed early have less ossicular damage/ complications as compared to those who seek medical advice at an advanced stage of disease.

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INTRODUCTION

Chronic suppurative Otitis media is the result of an initial episode of Otitis media and is characterized by a persistent discharge from the middle ear through a tympanic membrane perforation. It is an important cause of preventable hearing loss, particularly in the developing world¹

Chronic suppurative Otitis media is usually classified into two main types-tub tympanic and Attico-antral diseases.^{2,3}

Tubotympanic type is characterised by a perforation in the pars tensa and is generally called safe type of CSOM. The Attico antral type is called unsafe or dangerous type because of the associated complications which may be life threatening at times. These complications are mainly due to granulation tissue and cholesteatoma causing bone erosion and necrosis which may involve vital structures such as facial nerve, inner ear and intra cranial components.

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The moist keratin material is a good culture medium for bacterial growth, predisposes the patient to secondary acute ear infection that is usually characterised by the presence of granulation tissue, a foul smelling discharge and occasionally ear pain. Frequently pseudomonas and or fungus will be cultured from the ear canal⁴

The majority of cholesteatomas assume fairly typical pattern of growth that are dictated by their site of origin and its related anatomic structures. The most common locations from where cholesteatoma arises are the posterior epitympanum, posterior mesotympanum and the anterior epitympanum. Enlarging cholesteatomas are channelled along characteristic pathways by surrounding mucosal folds, ossicular suspensory ligaments and the ossicles themselves^{5,6}

MATERIAL AND METHODS

This prospective study was conducted in the Department of ENT Head and Neck Surgery SKIMS MCH Bemina Srinagar J & K on 360 patients of CSOM who got admitted in the hospital over a period of 5 years. The details of clinical examination, routine investigations, audiometry, examination under microscope and findings of HRCT temporal bone were recorded.

The following criteria were used for including the patients in study.

1. Patients of either sex, aged 70 years.
2. Patients having following findings on clinical records
 - Central Perforation.
 - Marginal / Attic Perforation.
 - Retraction Pocket.
 - Erosion of outer attic wall.
 - Presence of cholesteatoma, Granulation tissue and or Aural polyps.
3. Healthy patients without any intracranial complications.
4. Patients with dry central perforation were managed with tympanoplasty and patients having CSOM with active mucosal disease were managed with cortical mastoidectomy with tympanoplasty. The patients with Retraction pockets, cholesteatoma, were managed with modified radical mastoidectomy with tympanoplasty.

RESULTS

There were 360 patients, 130 (36.1 %) were males and 230 (63.9 %) were females. The age of the patients ranged from 8-65 years with majority 128 (35.5%) being between 21-30 years of age. The youngest patient was 8 years old and the oldest patient was 65 years of age. Most of the patients had unilateral disease 302 (83.9%) Table1. Majority of patients 296 (82.2%) had presented with symptoms of ear discharge, followed by reduced hearing in 263 (73 %), earache 56(15.5%) and tinnitus 5 (1.4%). Central perforation was noted in 266 (73.9 %) cases, marginal or attic perforation in 73 (20.3%) cases, retraction pocket in 55 (15.3 %) cases, erosion of outer attic wall in 89 (24.7%) cases, cholesteatoma flakes in 81 (22.5%) cases, granulation tissue in 33 (9.16%) cases and aural polyps in 29 (8.05%) cases were seen in CSOM Table 2. Ossicular damage was observed in all cases having unsafe CSOM, Incus was the most commonly damaged ossicle and were seen in 52 (55.3%) cases, followed by Malleus in 41 (43.6%) cases, stapes in 18 (19.14 %) cases and absent ossicles in 8 (8.5 %) of cases Table 3. Most of the cases 334 (92.8%) had conductive hearing

loss and 26 (7.2 %) had mixed hearing loss. Tympanoplasty was done in 206 (57.2 %) of patients, cortical mastoidectomy with Tympanoplasty in 60 (16.7 %) of patients and Modified Radical Mastoidectomy with tympanoplasty in 94 (26.1%) of patients.

Table 1 Age, Sex and Laterality of involvement.

Age	Safe CSOM						Unsafe CSOM							
	Sex		Laterality				sex		Laterality					
	M	F	Total	R	L	B/L	Total	M	F	Total	R	L	B/L	Total
1-10	0	2	2	0	1	1	2	3	2	5	3	2	0	5
11-20	28	60	88	29	36	23	88	17	17	34	18	16	0	34
21-30	28	73	101	30	50	21	101	12	15	27	13	14	0	27
31-40	13	26	39	18	13	8	39	7	6	13	5	8	0	13
41-50	12	15	27	11	14	2	27	3	8	11	7	4	0	11
51-60	3	3	6	3	0	3	6	1	0	1	0	1	0	1
61-70	1	2	3	2	1	0	3	2	1	3	2	1	0	3
Total	85	181	266	93	115	58	266	45	49	94	48	46	0	94

Table 2 Middle ear Pathology in CSOM.

Pathology	No. of Patients	Percentage
Central perforation	266	73.9 %
Marginal/ Attic perforation	73	20.3 %
Retraction pocket	55	15.3 %
Erosion of outer attic wall	89	24.7 %
Cholesteatoma flakes	81	22.5 %
Granulation tissue	33	9.16 %
Aural polyp	29	8.05 %

Table 3 Ossicular Status In Unsafe Csom Patients

Ossicular Damage	No. of patients	percentage
Incus	52	55.3 %
Malleus	41	43.6 %
Stapes	18	19.14 %
Absent ossicle	8	8.5 %

DISCUSSION

Chronic suppurative otitis media (CSOM) is a chronic middle ear infection with or without discharge with a permanent perforation in the tympanic membrane. Incidence is higher in the developing countries because of overcrowding, inadequate health care, poor hygiene, recurrent upper respiratory tract infections, poor nutrition and pollution.

In our study, the age of patients ranged from 1 to 70 years, with majority, about 35.5% being between 21-30 years of age. Our results are comparable to a study done by Dhulipalla S *et.al* 7(2018) in which about 24% cases were in age group of 21-30 years. In another study of 160 patients conducted by Baig M *et.al* 8(2011), majority of patients i.e, 64(40%) were between 21-30 years of age.

In our study of 360 patients, there was female predominance with females representing about 63.8% (230) and males representing 31.1% (130). This is in accordance with studies conducted by Rout M 9 *et.al* (2020), Mohammed Abd Elmoniem Ahmed *et.al* 10(2019) and Madan G *et.al* 11 (2015).

Type of Intraoperative Middle ear pathology:

Safe CSOM: In our study safe CSOM with central perforation was observed in 266(73.9%) patients. This is comparable with the study conducted by Rout M *et.al* 9 (2020) in which dry central perforation was seen in 71.4% of cases Out of 360 patients, 266(73.9%) patients were having safe CSOM and 94(26.1%) patients were having Unsafe CSOM. In a study

done by Baig M *et.al*8(2011), 89.37% and 10.62% of patients were having safe and unsafe CSOM respectively.

Unsafe CSOM: Among this subset of patients marginal or attic perforation was seen in 20.3% patients and Retraction pocket was seen in 15.3% patients in our study. In a study conducted by Navjot kaur *et.al*12 (2016), marginal or attic perforation and retraction pocket was seen in 15% and 42.5% patients respectively. In an another study done by Dhulipalla S *et.al*7 (2018), marginal perforation and retraction pocket were seen in 8% and 30% of patients respectively. In our study erosion of outer attic wall was seen in 24.7% of patients whereas Navjot kaur *et.al* 12 (2016) reported erosion of outer attic wall in 40% of cases. Cholesteatoma was seen in 22.5% of patients in our study. Dhulipalla S *et.al* 7 (2018) and Navjot kaur *et.al* 12(2016) reported incidence of cholesteatoma in 42.5% and 53% patients in their respective studies. Intraoperatively granulation tissue and aural polyps were observed in 9.16% and 8.05% patients respectively in our study. In studies conducted by Rout M *et.al* 9 (2020), Dhulipalla S *et.al* 7(2018) and Navjot kaur *et.al* 12(2016) 9.5%,22%,10% and 5.3%,17%,10% patients were having granulation tissue and aural polyp respectively.

In our study, among unsafe CSOM patients, malleus was eroded in 43.6% patients, incus in 55.3% patients, and stapes was eroded in 19.14% patients. In study done by Dhulipalla S *et.al* 7(2018) malleus, incus, and stapes was eroded in 60%, 93% and 20% of cases respectively. Ossicular erosion involving malleus incus and stapes was reported about 55%, 65% and 20% respectively by Navjot kaur *et.al* 12(2016).

CONCLUSION

Despite effective antibiotics, trained manpower, adequate facilities unsafe CSOM continues to affect a sizeable fraction of population in developing countries. The patients of CSOM outnumber the other patients in ENT OPD's and in ENT operation lists and are huge burden on resources. A lot of stress needs to be put on early reorganisation of the disease, as patients diagnosed early have less ossicular damage/ complications as compared to those who seek medical advice at an advanced stage of disease.

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