

Original Article

Incidence of Cholesteatoma in Chronic Suppurative Otitis Media, Atticoantral Disease

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Background: Atticoantral variety of chronic suppurative otitis media also referred to as unsafe is a deep-seated inflammation of middle ear cleft involving underlying bone and is usually associated with cholesteatoma. The purpose of study was to see the presence of cholesteatoma in clinically diagnosed cases of chronic suppurative otitis media atticoantral type.

Material and Methods: Sixty cases of chronic suppurative otitis media clinically diagnosed as atticoantral variety were included in this study. These patients had attic, marginal or total perforation and foul smelly discharge of more than two years duration. Mastoid exploration was done and findings were recorded for cholesteatoma and non-cholesteatoma ears.

Results: Cholesteatoma was found in 45 patients (75%), and only granulations were seen in 15 patients (25%).

Conclusion: Patients having long standing foul smelling discharge and attic perforation always have underlying cholesteatoma or granulation tissue.

Key Words: Chronic suppurative otitis media, Cholesteatoma, Granulations.

Introduction

Chronic suppurative otitis media is a common condition; it is the inflammation of the middle ear cleft lasting for more than twelve weeks duration.¹ Atticoantral type of chronic suppurative otitis media is unsafe variety because of its destructive nature and it is usually associated with cholesteatoma.²

Atticoantral disease most commonly involves attic and is characterized by formation of retraction pockets in which keratin accumulates to produce cholesteatoma. In atticoantral disease, discharge is generally persistent, foul smelling, scanty and some times blood stained which appears due to osteitis and formation of granulation tissue.³

Chronic suppurative otitis media and cholesteatoma have been recognized as destructive lesions of the skull base that can erode and destroy important structures within the temporal bone. Besides local tissue changes, it results in wide spectrum of tympanic membrane and ossicular defects.⁴ This damage is due to the proteolytic activity of the inflammatory by-products and the micro flora of chronic suppurative otitis media.⁵

Cholesteatoma is a cystic structure lined by keratinized stratified squamous epithelium resting on fibrous stroma of variable thickness, which may be having some elements of original mucous lining. Cholesteatoma does spread in and across the middle ear cleft with a potential to lead to both intra and extra cranial complications.⁶ Finding of

cholesteatoma is a hallmark in labeling chronic suppurative otitis media as an atticoantral variety recently called bony disease.

In Pakistan, on population based randomized sample survey, cholesteatoma was found in 7.75% cases of chronic suppurative otitis media.⁷ In Thailand, Lekagul et al in their ear camps have noted a decline in the prevalence of cholesteatoma in both urban and rural population.⁸ In Pakistan, one study was conducted during 1996-1998 through ear camps in which there was a significantly low prevalence of cholesteatoma even in the villages of Baluchistan and interior Sindh.⁹ According to a recently published study, cholesteatoma was found in 8% of chronic suppurative otitis media.¹⁰

The present study aimed to see the presence of cholesteatoma in clinically diagnosed cases of atticoantral type of chronic suppurative otitis media.

Material and Methods

This prospective study was conducted in department of ENT- I Services Hospital, Lahore from 1st June 2004 to 30th May 2006. Sixty patients with chronic discharging ears who presented in out-patient department were selected. All 60 patients were clinically diagnosed to be cases of chronic suppurative otitis media atticoantral type.

Evaluation of the patients was done by clinical history, ENT examination, otoscopy and ear examination under microscope. Pure tone audiogram

evaluate the extent of the disease. Mastoid was explored and special attention was paid to the presence of cholesteatoma and its complications and the findings noted.

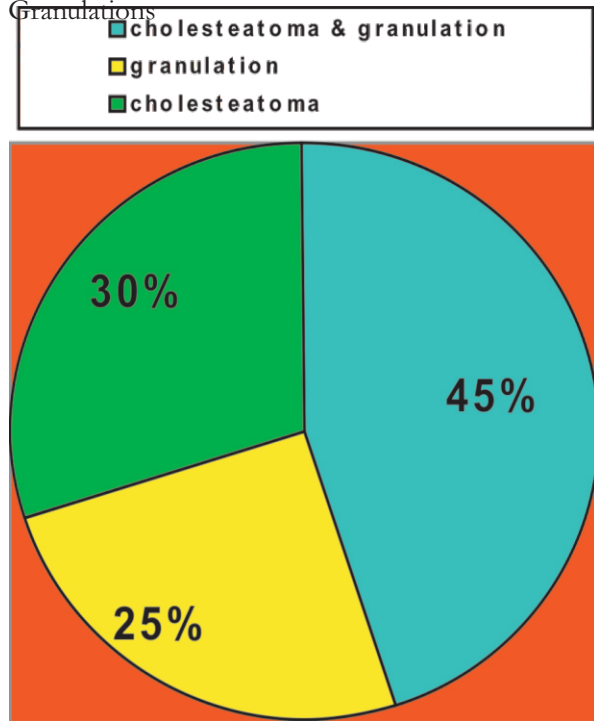
Table-1: Site of perforation

S.#	Frequency	n	% age
1	Attic Perforation	03	58%
2	Posterior marginal perforation	16	33%
3	Total perforation	05	9%

Table-2: Mastoid procedure

S.#	Frequency	n	% age
1	Modified radical mastoidectomy	40	67%
2	Radical mastoidectomy	10	17%
3	Combined appro. tympanoplasty	08	13%
4	Extended cortical mastoidectomy	02	03%

Fig-1: Percentage of Cholesteatoma & Granulations



Results

Out of 60 patients having chronic suppurative otitis media atticofacial type, 35 (58%) were males and 25 (42%) were females. These patients had age ranging from 12 to 45 years. Fifty five patients (92%) had unilateral disease and 5 patients (8%) had bilateral

disease. All 60 patients had foul smelling discharge and among them 20 patients (33%) had blood stained discharge. Average duration was more than 2 years. Thirty- five patients (58%) showed attic perforation. Posterior marginal perforation was seen in 20 patients (33%) and five patients (9%) had total perforation (**Table 1**). Examination under microscope showed cholesteatoma and granulations in 12 patients (20%). Cholesteatoma flakes were seen in 18 patients (30%) and no cholesteatoma or granulation was found in the remaining patients on examination under microscope. Mixed hearing loss was seen in 36 patients (60%) and 24 patients (40%) had conductive hearing loss. Modified radical mastoidectomy was performed in 40 patients (67%) and radical mastoidectomy in 10 patients (17%). In 8 patients (13%) combined approach tympanoplasty and in 2 patients (3%) extended cortical mastoidectomy was performed according to the extent of disease (**Table 2**). Ossicles were involved in 57 (95%) patients. In 25 (42%) patients, all three ossicles were involved. Twenty-seven patients (45%) had cholesteatoma and granulation tissues. Cholesteatoma was found alone in 18 patients (30%) and granulation tissue in 15 patients (25%) (**Fig 1**).

Discussion

Chronic suppurative otitis media remains a prime infection of middle ear and mastoid cavity in our region. Finding of cholesteatoma is a hallmark in labeling chronic suppurative otitis media as an atticofacial variety. In our study twenty-seven (45%) patients had cholesteatoma and granulation tissue. Cholesteatoma was found alone in 18 patients (30%) and granulation tissue in 15 patients (25%). We compared our results with local and international studies. In one study by Mushtaque Ali Memon et al,¹⁰ cholesteatoma was found in 8% of chronic suppurative otitis media.¹⁰ However in their study 92% patients had central perforation and only 8% had marginal perforation. This low prevalence of cholesteatoma was seen because cases of chronic suppurative otitis media tubotympanic type were selected whereas cholesteatoma is a characteristic of chronic suppurative otitis media atticofacial type. Low prevalence of cholesteatoma was also seen in the studies of Lekagul⁸ in Thailand and Alam et al⁹ in interior Sindh and Baluchistan.

In another international study in which a total of 500 patients with cholesteatoma were diagnosed and operated during 1982-91 in the region of Tampere University Hospital and Mikkeli Central Hospital in

9.2 per 100,000 inhabitants.¹¹ In our study, the high incidence of cholesteatoma was seen because we had selected cases of atticointral variety of chronic suppurative otitis media having foul smelling discharge and attic or marginal perforation. Atticoantral disease most commonly involves attic and in our study 35 patients (58%) showed attic involvement. All 60 patients had foul smelling discharge and among them 20 patients (33%) had blood stained discharge. Similar incidence of discharge was seen in the series of Udepurwala et al.¹² Cholesteatoma is destructive disease and has caused ossicular damage in 92% cases in our series and similar incidence of ossicular involvement was seen in Paul in 1999¹³ and Takin and Osma series 2002.¹⁴

Conclusion

Cholesteatoma is commonly found in patients having persistent foul-smelling and blood stained discharge. Atticoantral type is a dangerous variety of chronic suppurative otitis media because of its destructive nature. Cholesteatoma usually involves ossicular chain resulting in hearing impairment. Patients having marginal and attic perforation always have underlying cholesteatoma and/or granulation tissue. Patients diagnosed as atticointral type of disease should be explored to avoid the intra and extra cranial complications of cholesteatoma.

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