

Clinical Markers of Cholesteatoma

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ABSTRACT

OBJECTIVE: To evaluate the significance of clinical markers, predict underlying cholesteatoma in chronic suppurative otitis media.

STUDY DESIGN: It is cross-sectional descriptive study.

PLACE & DURATION: This study conducted at ENT Department Liaquat National Hospital Karachi from June 2003 to July 2005.

MATERIAL & METHODS: Patients presented with history of chronic suppurative otitis media with clinical markers, suspicious of underlying cholesteatoma irrespective of age and sex were evaluated by detailed history, otolaryngology examination, ear examination under microscope, hearing loss assessment primarily by tuning fork test and pure tone audiometry. All patients were operated for mastoid exploration by cortical mastoidectomy and then subsequently converted into modified or radical mastoidectomy according to nature and extent of disease. Tissue removed sent for histopathology to confirm the diagnosis

RESULTS: Out of 100 patients 48 were females and 52 were males. Fifty-six of patients had non-specific chronic inflammation and 44% had cholesteatoma. Highest prevalence of cholesteatoma observed in aural polyps (31.81%), followed by 27.27% in chronic discharging ear with central perforation not resolving with medical treatment, and 18.18% of cholesteatoma in patients with attic perforation/retraction pocket, 15.90% in Granulation tissue and the lowest percentage of cholesteatoma seen in posterior-superior marginal perforation (6.81%).

CONCLUSION: Chronic suppurative otitis media with clinical markers, suspicious for underlying cholesteatoma, not resolving with medical treatment, have significant percentage of presence of underlying Cholesteatoma. It is necessary to evaluate every patient of CSOM carefully for early recognition and treatment, to avoid intra and extra cranial complication.

KEY WORDS: chronic suppurative otitis media, Cholesteatoma, Aural polyp, Attic perforation, Retraction pockets.

INTRODUCTION

Cholesteatoma is a cystic structure lined by keratinizing stratified squamous epithelium, resting on fibrous stroma of variable thickness, which may be having some element of original mucous lining.¹

According to another definition cholesteatoma is an abnormal collection of viable and desquamated squamous epithelium in the middle ear or mastoid air space.²

Chronic suppurative otitis media (Attico Antarl) involve posterior-superior part of middle ear cleft (attic, antrum and posterior tympanum and mastoid) and is associated with cholesteatoma, which because of its bone eroding properties causes serious complications. For this reason the disease is also called unsafe or dangerous type.³ Facial nerve palsy in association with cholesteatoma is well recognized.⁴

Cholesteatoma is a non-neoplastic, keratinising lesion, which has two forms: congenital and acquired.⁵ The Propensity of cholesteatoma to erode and spread locally is unremarkable.⁶ Facial nerve paralysis second-

ary to CSOM is associated with cholesteatoma in 70% of cases⁷.

Meningitis was the most common intracranial complication followed by lateral sinus thrombosis and 9% death was observed due to otogenic intra cranial infection⁸

The disease spread infection to vital structures, brain and inner ear and to give rise the life threatening problems like meningitis, extradural abscess, subdural abscess, brain abscess, encephalitis, facial nerve paralysis and labyrinthitis. This disease does not always presented with clear cut appearance of cholesteatoma but the significant percentage of patients presented with other clinical manifestation like aural polyp, retraction pocket, marginal perforation, granulation tissue and some may be with central or subtotal perforation. Aim of the study was to evaluate the significance of clinical markers, suspicious for presence of underlying Cholesteatoma in patients having chronic suppurative otitis media, so that these patients may be evaluated and managed carefully to avoid morbidity and mortality.

PATIENTS AND METHODS

Patients irrespective of age and sex, presented with chronic suppurative otitis media associated with suspicious of clinical markers for underlying cholesteatoma like aural polyp, granulation tissue, posterior superior marginal or attic perforation/ retraction pockets, and chronic discharging ears with central or sub total perforation did not resolved with medical treatment were included, patients having ear discharge less than three 3 months duration (acute or subacute suppurative otitis media), chronic suppurative otitis media of tubo-tympanic type with dry central/subtotal perforations and patients with polypoidal tissue diagnosed on histopathology benign or malignant tumors of middle or external ear were excluded from study. Patients were evaluated by detailed history, otolaryngology examination, and ear examination done under microscope, aural toilet done by suctioning and dry mopping where required. Hearing loss assessed primarily by tuning fork test and than pure tone audiometry. Radiology investigations included plain x-ray mastoid (lateral oblique view) done in all patients and CT scan or MRI scan in selected patients. All patients were operated for mastoid exploration by cortical mastoidectomy and than subsequently converted into modified or radical mastoidectomy according to nature and extent of disease. All tissue and other pearly white cheesy material removed, sent for histopathology diagnosis. All the findings were noted on Performa. Data analyzed by using SPSS version 10. Descriptive statistics like frequency and percentage was computed for data presentation. Percentage of cholesteatoma was calculated in different clinical findings and on histopathological reports.

RESULTS

Out of 100 patients 48 were female and 52 male. Cholesteatoma was seen in 44 cases, followed by non-specific chronic inflammation in 56 patients. The most common age group affected was between 25-35 yrs i.e. 40%, 2nd most common 15-25 yrs i.e. 35%, above 35 yrs of age 13% followed by 8% of cases between 8-14 years of age. Among 44 patients who presented with cholesteatoma 14 (31.81%) had aural polyp. The highest percentage of underlying cholesteatoma was seen in patients having aural polyp i.e. out of 28 patients having aural polyp 14 (31.81%) had cholesteatoma. Similarly the second most common marker was central perforation with chronic discharg-

ing ear that was not resolving with medical treatment seen in 26 patients among whom 12/44 (27.27%) had cholesteatoma, 13 patients had attic perforation/ retraction pocket out which 08/44 (18.18%) had cholesteatoma, granulation tissue was present in 20 patients out of which 07/44 (15.90%) had cholesteatoma and 13 patients had posterior-superior marginal perforation out of which 03/44 (6.81%) had cholesteatoma (Table I).

TABLE I: PERCENTAGE OF CHOLESTETOMA IN CLINICAL MARKERS

Clinical Marker	Overall Cases (n=100)	Cases of Cholesteatoma (n=44)	Percentage within Cholesteatoma (n=44)
Aural polyp	28	14	31.81
Chronic suppurative otitis media	26	12	27.27
Attic perforation/ retraction pockets	13	08	18.18
Granulation tissue	20	07	15.91
Posterosuperior marginal perforation/ retraction pocket	13	03	6.81

DISCUSSION

Chronic suppurative otitis media (CSOM) is a chronic discharge from ear in the presence of a perforation in the tympanic membrane.⁹ CSOM remained a prime infection of middle ear and mastoid cavity, in our region.¹⁰ Cholesteatoma may vary in size from a small sac limited to attic or posterior tympanum to wide spread disease involving the entire mastoid bowl. Occasionally the cholesteatoma may extend medially into petrous apex or into the entire middle ear cavity including the eustachian tube opening inferiorly.¹¹ Cholesteatoma is notorious to cause more damage as potentially it is dangerous because of its capacity to destroy the bone.¹² Overall incidence of cholesteatoma in clinical markers in this study is highly significant 44%, which is alarming and these conditions should investigated and treated early. This study also reveals the prevalence is higher in adults than children. These figures are comparable with local literature, which also supports that the cholesteatoma was higher in adults between 20 – 30 yrs.¹³

The incidence of cholesteatoma in Attic perforation is 24.3%¹⁴ and 82.2% with Attic-retraction pockets.¹⁵ In our study Attic perforation/retraction pockets with foul smell discharge was seen in 13 patients, and cholesteatoma was seen in 08 (18.18%) patients.

The association of aural polyp with cholesteatoma is well known, the incidence of cholesteatoma in ears presenting with polyps varies from 25% to 45%.⁶ In our study this percentage was 31%.

These figures were also supported by Prasannaraj, De NS; and Narasimhans study on aural polyp reveals, patients who underwent for mastoid exploration, 52% had extensive disease of the mastoid air cell system and 35% had an underlying cholesteatoma.¹⁷

In another study on aural polyp, underlying cholesteatoma found in 52% of cases and suggested that location of polyp and its radiological sign are important for the diagnosis of cholesteatoma.¹⁸ Cholesteatoma was found in 35% of cases undergoing aural polypectomy, however this figure rise to 39% if only the polyp arising from attic and postero-superior perforation, and no case of cholesteatoma was found with central perforation,¹⁷ while in our study quite high percentage of cholesteatoma 27.27%, seen in cases of central perforation not resolving with medical treatment. The presence of aural polyp had high percentage of underlying cholesteatoma, it signifies well established disease of the middle ear cleft with a greater potential for complication and often obscure an underlying cholesteatoma, compare with other studies showed 8.16%.

Posterior superior marginal perforations are always hallmark for underlying cholesteatoma but in this study we found very low percentage (6.81%) of cases compared with other studies reported high percentage (75.7%) of cholesteatoma in posterior superior marginal perforation¹⁸, these differences may be due to geographical, racial or hereditary factors.

CONCLUSION

Chronic suppurative otitis media with clinical markers, suspicious for underlying cholesteatoma like aural polyp, granulation tissue, posterior superior marginal perforation/ retraction pockets, attic perforation and central perforation, have significant percentage of presence of underlying Cholesteatoma, that can be life threatening. It is necessary to evaluate every patient of CSOM carefully for early recognition and treatment, to avoid intra and extra cranial complication.

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