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Unsafe CSOM: Still a Challenge in IDPs

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Abstract: The aim of the prospective study was to determine the frequency of complications in unsafe chronic suppurative otitis media in IPDs migrated to district Bannu during military operation. The study was conducted in the department Otorhinolaryngology, Head & Neck surgery, DHQ teaching hospital Bannu, KPK-Pakistan form August 2014 to April 2015. One hundred successive patients were nominated whose clinical judgment was CSOM Attico-antral type. The most common extracranial complication in our study was ossicular erosion seen in 84% cases followed by facial nerve canal erosion seen in 12% cases. Mastoid abscess was seen in two cases, exposed sigmoid sinus in three cases and erosion of lateral semicircular canal in one case. The intracranial complications seen were meningitis and temporal lobe abscess in one case each. The high frequency in our study may be explained by the fact that IDPs are sitting in a rural area with very poor socio-economic background and unhygienic environment.

Key words: CSOM · Cholesteatoma · IDPs

INTRODUCTION

Chronic suppurative otitis media is typically a persistent disease, insidious in onset, often capable of causing severe destruction and irreversible sequele and clinically manifests as deafness and discharge. Infants and children are at the highest risk for acquisition of otitis media with peak prevalence rate occurring between 6 and 36 months and a lesser peak between 4 and 7 years [1]. Incidence of CSOM varies from country to country; even in developed countries like UK the overall incidence of the disease varies from 0.6 to 1.1 percent. The widespread prevalence of CSOM in third world countries can be attributed to the socio-economic factors such as poor living conditions, overcrowding, poor hygiene and malnutrition [2].

Unsafe type of this disease, previously known as atticoantral type usually presents with marginal perforation having cholesteatoma which is the hallmark of this affection and also considered as the complication producing element [3, 4].The cholesteatoma is a sac lined by keratinizing stratified squamous epithelium in the middle ear cleft with continuous desquamated epithelium arranged like onion skin layers. It is also known as the non-malignant bone destroying disease of the middle ear cleft .Bone erosion is an established complication of this type and may involve extra cranial as well as intracranial structures [5].

Before the introduction of antimicrobial agents 2.3% of all patients with otitis media developed intracranial complications and two-thirds of the cases were due to chronic middle ear disease [6]. In developing countries, the complications are comparatively higher leading to any disability or even death [7]. The commonly seen intracranial complications are meningitis, cerebral abscess, extradural abscess and lateral sinus thrombophlebitis. Today the widespread availability of computed tomography (CT) and Magnetic resonance imaging (MRI) has greatly enhanced the diagnosis of intracranial complications.

The objective of this study was to determine the frequency of complications in unsafe chronic suppurative otitis media.

Aims and Objectives: The objective of the study was to determine the frequency of complications in unsafe, chronic suppurative otitis media in idps of North Waziristan agency Bannu.

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MATERIALS AND METHODS

This prospective study was conducted in the department Otorhinolaryngology, Head & Neck surgery, DHQ teaching hospital Bannu over the time duration of 9 months from August 2014 to April 2015. One hundred consecutive patients were selected whose clinical diagnosis was CSOM Attico-antral type.

The criterion for selection of cases was as under:
Patients having attico-antral CSOM (Either unilateral or bilateral).
The criteria for exclusion of cases was:

- Doubt of ear pathology to be malignant
- Inherited ear disease
- Clinically safe CSOM
- Patients unfit for surgery or anesthesia
- Old operated ear cases
- Patient age less than 10 years

In all patients, a detailed history was taken followed by complete examination of ear nose and throat. Otoscopy, routine investigations and audio logical valuation were executed in all cases whereas examination under microscope was done under selected cases. In all cases with suspicious impending complications or overt complications, HRCT ear and head was done. The choice of surgical procedure was depending on status of the ear; however canal wall down procedure was preferred in all cases with attico-antral disease. Brain abscess were first treated by neuro-surgical departments and later on mastoid exploration was done in ENT department. In meningitis, patients were treated conservatively first with antibiotics and lumbar puncture. After the condition of the patient was stabilized, mastoid exploration was carried out.

RESULTS

A total of 100 cases of unsafe type of chronic suppurative otitis media were selected for the present study.

The patients were in the age group varying from second decade to fifth decade. Maximum number of patients belonged to the age group of 21-30 years. Mean age of the patients included in the present study was 26.76 (Table 1).

In our study, out of a total number of 100 cases, 42(42%) were found males and 58 (58%) were females (Table 2).

Table 1: Prevalence of disease with age distribution

Age (in years)	Cases	%age
11-20	24	24%
21-30	52	52%
31-40	20	20%
41-50	4	4%

Table 2: Sex Distribution

Sex	Cases	%age
Males	42	42%
Females	58	58%

Table 3: Complaints

Symptoms	No. patients	%
Otorrhea	80	80
Headache	8	8
Fever	10	10
Decreased Hearing	90	90
Vertigo	1	1
Facial asymmetry	1	1

Table 5: Pathology of Disease

Pathology	Cases	%age
Granulation	26	26
Cholesteatoma	20	20
Both	62	52

Table 6: Complications

Complications	No. patients	%
Extracranial		
Ossicular erosion	90	90
Mastoid abscess	4	4
Exposed facial nerve	20	20
Exposed sigmoid sinus	3	3
Erosion lateral semicircular	1	1
Intracranial		
Meningitis	1	1
Brain abscess	1	1

Maximum patients presented with the chief complaint of otorrhoea (80%) and nearly all with hearing loss (90%). Presence of headache in 8% cases and fever in 10% cases aroused suspicion of possible complications. Vertigo and facial asymmetry was observed in one case each.

Cholesteatoma along with granulation tissue which is representative of the disease was found in 62% of the cases.

The most common extracranial complication in our study was ossicular erosion seen in 90% cases followed by facial nerve canal erosion seen in 20% cases. Mastoid abscess was seen in four cases (4%), exposed sigmoid sinus in three (3%) cases and erosion of lateral semicircular canal in one case (1%).

The intracranial complications seen were meningitis and temporal lobe abscess in one case each.

DISCUSSION

The rate of complications, especially more serious intracranial complications, observed in developing countries is meaningfully more than those observed in studies from the developed countries [8]. In our study the frequency of extracranial complications excluding ossicular erosion is 38% and the frequency of intracranial complications is 2%. It was observed by Memon *et al*. [9] in 2008 that in a series of 390 patients of chronic discharging ears that the rate of extracranial complications was 4.10% and rate of intracranial complications was 2.3%of the unsafe variety. The high frequency in our study may be explained by the fact that we are sitting in a rural background with very poor socio-economic background patients. Osama U *et al*. [10] from Turkey reveals the rate of 1.35% of extracranial complications and 1.97% of intracranial complications in his study.

Chronic suppurative otitis media is a disease of young adults and about 50% of the patients were in the age group of 21-30 years which is comparable to study of Alam J. *et al*. [11]. In our study there was a female preponderance. Similar female preponderance was seen by others [12, 13].

Presence of headache in 6% cases and Fever in 10% cases aroused suspicion of possible complications. Albers [14] confirmed insistent fever and headache as the most common early indication of an intracranial complication and stressed the need to make an early diagnosis to reduce morbidity and mortality.

Cholesteatoma along with granulation tissue is the characteristic feature of unsafe CSOM, which was found in 62% cases and this can be compared to other studies [15]. Complications of otitis media are divided into intra temporal and extra temporal. The former include hearing loss which may be conductive or sensor neural, ossicular erosion, facial nerve palsy, mastoiditis, labyrinthitis and petrositis. Extra temporal complications are subdivided into intracranial and extra cranial complications. Intracranial complications include meningitis, extradural abscess. Cerebral abscess, lateral sinus thrombophlebitis and otitichydrocephalus. Extra cranial complications include retro auricular, zygomatic and Bezold abscess. We should suspect of ICC when the patient has clinical manifestations such as persistent headache, malaise, fever, otalgia, lethargy, nausea/vomiting, neck rigidity, diplopia, hemi-anopia, papilla edema, blurred vision, ataxia, seizures, aphasia, intention tremor, dysmetry and/or dysdiadocokinesia.

ICC secondary to chronic suppurative otitis media normally occur by the extension of the mucoperiosteum inflammatory process to the head cavity, developing in the brain, lateral sinuses and epidural, subdural and subarachnoid spaces. In most cases, ICC extend through bone dehiscence on the tegmen tympani or in the antrum; through vascular canals directly to the lateral sinus, through the superior petrous sinus; vascular anastomosis; carotico tympani ccanaliculi, peri-carotid venous plexus; cavernous sinus; bone dehiscence on the cavum tympani; through the endolymphatic sac; optic capsule fistula, or they may result in sinudural angle or petrous apex osteitis; or empyema of cochlear aqueduct or perineural spaces of the inner acoustic meatus [16].

In our study the most common extracranial complication was ossicular erosion seen in 90% cases. The Incus was the most frequently eroded ossicle followed by the malleus and stapes. This is consistent with the findings of Chee *et al*. [17].

Clinically one patient (1%) presented with facial asymmetry. Facial palsy directly related to cholesteatoma in modern literature is around .04% to 0.16% [18]. Memon *et al*. detected 6 cases of exposed facial nerve in their series of 390 patients of chronically discharging years. In our study tympanic segment of the facial nerve was the most susceptible to erosion. The findings are consistent with the observation of authors [19].

On operative findings in one case 2% the lateral semicircular canal was eroded. Anterior and posterior semicircular canals were intact. Findings are consistent with Silver *et al*. [20], according to whom patients with vertigo & chronic middle ear disease may have a cholesteatoma with the fistula between the middle & inner ear & the fistula usually involves the lateral semicircular canal. Clinically 4 (4%) patients presented with mastoid abscess. Osama *et al*. showed mastoid abscess as the most common extracranial complication.

In our study the rate of intracranial complications was 2 %. The most common ICC are meningitis, cerebral abscess, extradural abscess and thrombophlebitis of lateral sinus (TLS) [21]. In this In this series of cases, we present The most common intracranial complications in our study was brain abscess 1% and meningitis in 1 % cases. In a review from Thailand by Kangsanarak [22]

and colleagues found that meningitis was the most common intracranial complication, either as the only complication or in combination with another one. Meningitis is the most common complications in most study [23, 24]. In a report from South Africa, Singh and Maharaj [25] found that out of 181 patients with intracranial complications, 51% had a brain abscess and only 12% had meningitis. Even today it is still not rare to see brain abscess secondary to otogenic infection in developing nations. In a recent review of intracranial complications of otitis media in 33 Brazilian patients diagnosed between 1987 and 2002, 26 (46%) had a brain abscess. The most serious otogenic intracranial complications which our commonly is brain abscess. It needs prompt diagnosis and treatment. An abscess in the temporal lobe occurs more commonly than does one in the cerebellum and multiple abscess are frequent [26]. Kessler and colleagues reported a mortality rate of 33% ii the 51 patients with otitic meningitis they studies [27]. There was no mortality in our study. However, intracranial complications represent a risk situation because of high mortality rate (36%) [28].

CONCLUSION

The incidence of complications of CSOM has declined with the advent of antibiotics. In developing areas of the world, however, where the availability of medical facilities is still in its infancy, complications occur with significant morbidity and mortality Early diagnosis of intracranial complications helps in reducing the rate of morbidity and mortality The presence of cholesteatoma should be diagnosed promptly and measures should be taken for converting the unsafe ear into a safe ear. High index of suspicion and prompt management is the key to reduce the morbidity and mortality of the disease so common in IDPs of North Waziristan agency.

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