Frequency of Extracranial Complications of Chronic Suppurative Otitis Media

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Summary:

Objectives: To see the way of presentation of extracranial complication, relationship between socio-economic conditions and extracranial complication of chronic suppuration otitis media.

Methods: This is a cross-sectional study carried out in Department of Otolaryngology Head and Neck Surgery, Sir Salimullah Medical College & Mitford Hospital and Dhaka Medical College Hospital from 1st July 2009 to 30th June 2010. The diagnosis was made by detailed history, clinical examination & investigation. Analyzed data was presented by various tables.

Results: In this study male (59%), lower class people (57%), age 11-20 years, rural (66%) and less educated patients were more affected. Having bath in the ponds and rivers suffers more. Clinical presentation of CSOM with complications were aural discharge (100%), hearing impairment (94%), post auricular swelling (15%), pain in the ear (21%), postauricular discharge (27%) and mass in the EAC (12%). Here found aural discharge mostly malodorous and scanty, attic perforation and cholesteatoma. Post auricular abscess most common (47%) extracranial complication and labyrinthitis was the lowest (3%). Atticoantral variety was more common (89%) than that of tubotympanic disease (11%).

Conclusion: From the review of the series we found the frequency & types of extracranial complications arising from CSOM and known the current epidemiological data. It can produce awareness among all level of medical practitioners and enhance prompt diagnosis and treatment.

Key words: Chronic suppurative otitis media, Extracranial complication.

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Introduction:

Chronic suppurative otitis media (COSM) and its complications are major health problem in Bangladesh and other developing countries.[1,2,3] Though the incidence of CSOM is gradually on the decline, it is still remained an important subject of research both in developing and the developed countries.[2,3]

CSOM implies a permanent abnormality of the parse tensa or flaccida, most likely as a result of earlier acute otitis medica (AOM), negative middle ear pressure or otitis media externa (OME).[4] CSOM is usually classified into two main groups- atticoantral disease and tubotympanic disease.[7,8] Tubotympanic disease is characterized by a perforation of the parse tensa.[8] Patient with this form of otitis media are generally safe and not considered to be at risk of developing complications.[1,7,8,9] Atticoantral disease most commonly involve the parse flaccida and is characterized by the formation of a retraction pocket in which keratin accumulates to produces cholesteatoma and considered to a dangerous form of the disease because of development of complications.[1,7,8] Complications are more common in

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atticoantral disease (79.11%) than in tubotympanic disease (20.89%).[1,7]

The incidence of CSOM appears to some extent on racial and socio-economic factors. Poor living conditions, overcrowding, poor hygiene and nutrition have been suggested as a basis for the widespread prevalence of CSOM in developing countries.[2,3,7,8] Complications of CSOM are more common in combined with cholesteatoma and granulation tissue.[10,11] The overall incidence of complications has fallen greatly with antibiotic treatment.[12]

Complications of CSOM are classified into two main categories- extracranial complication (EC) and intracranial complication (IC). Extracranial complications are subperiosteal abscess, labyrinthitis, facial paralysis, petrositis.[10,13] Intracranial complications are- meningitis, brain abscess, extradural abscess, subdural abscess and lateral sinus thrombosis. Different studies showed that extracranial complication of CSOM is more than that of intracranial complications.[2,7,10,13,14] Cholesteatomas are potentially dangerous because of their potential to incite resorption of bone, leading to intratemporal or intracranial complications.[15]

This study will be conducted to find out the frequency, types of extracranial complications arising from chronic suppurative otitis media and to know the current epidemiological data. It can produce awareness among all level of medical practitioners and enhance prompt diagnosis and treatment, at least early referral and thereby reduce morbidity and mortality of the patients suffering from chronic suppurative otits media.

Aims and Objectives

General Objectives:

- To find out the types of extracranial complication of CSOM.

Specific Objectives:

- To find out the relationship between socio-economic conditions and the disease process.
- To see the way of presentation of extracranial complication of CSOM.
- To develop awareness among all level of medical practitioners, so that prompt diagnosis and proper management can be achieved.

Study design: Cross sectional, observational study.

Study place: Otolaryngology & Head Neck Surgery department of Sir Salimullah Medical College & Mitford Hospital and Dhaka Medical College Hospital.

Period of Study: 1st July 2009 to 30th June 2010.

Source of Material: Patients admitted in the Otolaryngology & Head Neck Surgery department of the above mentioned hospitals included in the study.

Sample Size: 100 patients

Selection Criteria:

a) Inclusion criteria: Chronic supputrative otitis media & with extracranial complications like subperiosteal abscess, postauricular discharging sinus, labyrinthitis, facial palsy.

b) Exclusion criteria: Patients present with acute suppurative otitis media, chronic suppurative otitis media with intracranial complications.

Data collection method: Data was collected by well prescribed data sheet.

Data analysis: All data were statistically analyzed by SPSS method.

Ethical Clearance: Ethical review committee of Sir Salimullah Medical College has given permission to perform the study.

Method:

Whenever a case was selected, detailed history of each of the patient has been taken in a prescribed data sheet with the informed consent of the patient or the patient's guardian. Each of the patients under went thorough clinical examinations. Otological examination also performed under operating microscope. The findings of clinical and microscopic examination were recorded and plotted on the data sheet. Some important relevant investigations were done and recorded. All the collected data are analyzed properly.

Results:

Table-l

Age distribution of the patients (inclusive)

Age group (Years)	No. of Patients (n=100)	Percentage (%)
0-10	21	21
11-20	51	51
21-30	18	18
31-40	07	07
41-50	03	03

The age of youngest patient was 4 years and the eldest 50 years. The highest number of sufferers was in the 11-20 years age group (51%).

Table- II

Sex distribution of the Patients

Sex	No. of Patients (n=100)	Percentage (%)
Male	59	59%
Female	41	41%

Male patients are more sufferers (59%) than the female (41%).

Table- III

Socioeconomic status of the patients

Socioeconomic status	No. of Patients (n=100)	Percentage (%)
Lower class	57	57%
Middle class	30	30%
Affluent	13	13%

Here shown that lower class people (57%) are more sufferers.

Table- IV

Residential status of the patients

Residence	No. of Patients (n=100)	Percentage (%)
Rural	66	66%
Urban	34	34%

People living in rural area (66%) are more sufferers.

Table-V

Educational status of the patients

Educational status	No. of Patients (n=100)	Percentage (%)
Illiterate	24	24%
Primary education	41	41%
Secondary education	21	21%
Higher secondary education	11	11%
Graduation	03	03%

Here shown that the patient with illiterate and less educated group suffers more.

Table-Vl

Bathing habit of the patients

Bathing place	No. of Patients (n=100)	Percentage (%)
River + Pond	66	66
Shower + Tube-well	34	34

The peoples having bath in the ponds and rivers suffers more.

Table-Vll

Presenting features of the patients

Symptoms	Number of patients (n=100)	Parentage (%)
Aural discharge	100	100
Hearing impairment	94	94
Post auricular swelling	45	45
Neck swelling	09	09
Supra & preauricular swelling	05	05
Pain in the ear	21	21
Postauricular discharge	27	27
Mass in the EAC	12	12

Most of the patients were presented with multiple symptoms. Majority of cases had the complaints of hearing impairment and aural discharge.

Table-Vllla

Physical examination findings: Aural discharge

Odor (n=100)		Amount of discharge (n= 100)		Nature of discharge (n= 100)			
Odorless	Malodorous	Scanty	Profuse	Mucoid	Muco Purulent	Purulent	Blood Stained
13 (13%)	87 (87%)	85 (85%)	15 (15%)	09 (09%)	31 (31%)	46(46%)	14 (14%)

Here found that aural discharge is mostly malodorous and scanty in amount.

Table- Vlllb

Physical examination findings: others

			Otoscopic findings	Microscopic findings
TM perforation		Attic	64	64
		Posterior marginal	25	25
		Central	11	11
Cholesteatoma			87	91
Aural polyp			12	12
Granulation tissue		Middle ear	07	09
		EAC	04	04
Epithelial in growth			01	09
Ossicles	Intact		32	29
	Eroded		68	71

Attic perforation and cholesteatoma found in majority of the cases. Most important factor is that microscopic examination is more important both in diagnosis of the disease and planning of the treatment.

Table-lX

Distribution of patients in different types of CSOM with complications

Types of CSOM	Number of patients(n=100)	Parentage (%)
Atticoantral	89	89
Tubotympanic	11	11

Table-X

Extracranial complication of CSOM found in the study

Complications	No. of patients (n=100)	Percentage %)
Post auricular abscess	47	47%
Post auricular discharging sinus	26	26%
Labyrinthitis	03	03%
Bezold's abscess	07	07%
Facial nerve paralysis	11	11%
Zygomatic abscess	06	06%

Here found that post auricular abscess is the most common (47%) extracranial complication and labyrinthitis is the lowest (03%).

Discussion:

CSOM is a potentially serious disease because of its complications.[10] CSOM is quite common in developing countries.[2] Peoples of younger age group and low socio-economic classes are more sufferer.[2,3] This type of disease is also common in our country.[1] This study was carried out to find out frequency of extracranial complications of CSOM.

Despite an overall decline in the incidence of complications of otitis media, some complications are still exist.[2,12] Studies in different parts of the world found that attico-antral type of disease presented with more complications than the tubo-tympanic type.[1,7,10,12] Attico-antral disease (89) and its complications were more than that of tubo-tympanic disease (11) in this study (table lX), which are consistent with other global studies.[1,7,10,12] Cholesteatoma with or without granulation tissue is the commoner causative factor for the development of complication in CSOM.[2,3,12,13,14] Here cholesteatoma found in most of the cases (table Vlllb) which were in good agreement with the other previous studies.

Incidence of complications are common in children and young adults.[1,7,11]Highest rates of extracranial complications were found in 11-20 years age group of this study (table l) which were compatible with many studies.[1,3,7,11] Studies both in home and abroad[1,3,11] showed that male suffered more than that of female which was in good agreement with this study (table ll). Like different studies[3,11,13] illiterate and primary education groups ware more sufferers in this study (table V).

Rural peoples from low socio-economic groups are the common victim of CSOM and its complications, which are evident in many studies.[2,3,7,11] This study (table lll & lV) having similar agreement with the mentioned studies. Similar symptoms and findings were found in these patients (table Vll & Vlll), which are consistent with some of the standard studies.[7] Most of the literatures published that attic perforation is the most common otoscopic and microscopic findings[2,7], here (table Vlllb) also showed the similar agreement. Post auricular abscess was the most common extracranial complication in this study and post-auricular discharging sinus was the second (table X), keeping agreement with different standard study in home and abroad.[1,2,7,10,11] Incision and drainage followed by mastoid exploration should be done to prevent fatal complications. The incidence of facial nerve paralysis (table X) corresponds to the value of other studies.[2,7,10] In these cases urgent mastoidectomy with facial nerve decompression should be done promptly to recovery the nerve function.

Conclusion:

It is important to identify that the prevalence of CSOM with extracranial complications as it is still high in young age group and low socio-economic classes specially in the rural areas. Here we found that lack of knowledge regarding the disease process and its complications in illiterate and under educated population lead to complications like post- auricular abscess, post-auricular discharging sinus, facial palsy and deafness. So it is recommended that organizing health education program is essential for all classes of people specially in rural and underdeveloped areas. So that the people can be motivated and morbidity due to CSOM could be minimized. Surgeons should have their upgraded knowledge and proper training for modern surgical technique. Adequate medical and surgical intervention in time for treatment of chronic suppurative otitis media can restrict the development of extracranial complications and even prevent the development of irreversible facial nerve damage and hearing impairment.

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