FREQUENCY OF INTRA CRANIAL COMPLICATIONS IN CHRONIC OTITIS MEDIA

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Background: Chronic Otitis Media can lead to intracranial complications, which were more common in pre-antibiotic era as compared to the present antibiotic era. Patients of Chronic Otitis Media with intracranial complications usually present very late due to ignorance and lack of primary health care. The aim of this study was to investigate, the frequency, mortality and morbidity of intracranial complications of chronic otitis media admitted in Ear Nose and Throat Unit of Lady Reading Hospital Peshawar. **Methods:** This study was conducted in Government Lady Reading Hospital Peshawar for a period of two years from October 2001 to October 2003. All the patients diagnosed as intracranial complications of chronic otitis media were included in the study. **Result:** The total number of patients reporting with intracranial complication due to chronic Otitis media (Unsafe ear) was 20. Meningitis and brain abscess were present in 8 cases each (40%). In 3 cases (15%) extradural abscess was found while 1 (5%) had lateral sinus thrombosis. **Conclusion:** Chronic Otitis media is a common disease in our part of the world.

Key word: Chronic Otitis Media, Intracranial complications, Brain abscess, Meningitis.

INTRODUCTION

Chronic Otitis Media is very serious disease because it can lead to both intra cranial and extra cranial complications. The use of antibiotics has reduced the incidence, morbidity and mortality of complications due to Chronic Otitis Media. Acute exacerbation in Chronic Otitis Media usually leads to rapid intra cranial extension of disease.[1,2] In most of the cases with the intra cranial complications due to Chronic Otitis Media cholesteatoma was the commonest finding and exoneration of the disease is very important to prevent recurrence.[2]

Different routes of spread of infection to cranial cavity are direct erosion of bone, haemetological, through anatomical pathways and previous trauma surgical or non surgical.[1] Mortality has reduced to 5% with use of antibiotics as compared to 35% in pre-antibiotic era, due to intra cranial complications.[2]

This study was carried out to assess frequency and presentation of intracranial complications of chronic otitis media in our setting.

MATERIAL AND METHODS

This was a case series conducted at Postgraduate Medical Institute, Lady Reading Hospital, Peshawar Pakistan from October 2001 to October 2003. Patients presenting to Ear Nose Throat Unit and diagnosed as having intra cranial complication due to Chronic Otitis Media were included in the study. History clinical examination and investigation were done. CT scan was done in all patients with suspected intracranial complications. All patients were put on antibiotics and steroids to reduce oedema. Neurosurgical and ophthalmic opinion were taken and followed.

Brain abscess and subdural 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. In extradural abscess mastoid surgery was done immediately. In later sinus thrombosis mastoid exploration with removal of infected thrombosis was done with antibiotic cover.

RESULTS

In twenty patients with intra cranial complications males were 15 (75%), females were 5(25%)(Table-1). Age range was 15-30 years(Table-2). Most of the patients with intra cranial complications were between the age of 15-16 years (15 patients, 75%) between 25-30 years (5 patients, 25%).

Table-1: Gender wise distribution

Gender	No. patients	%
Male	15	75
Female	5	25

Table-2: Age wise distribution of intracranial complication

Age	No. patients	%
15–25 years	15	75
25–30 years	5	25

All patients with intra cranial complications were having foul smell discharge (Otorrhea) headache, fever and decreased hearing were present in 75% of patients (15). Otalgia in 50% and vertigo was present 15% of the patient (Table-3).

The common intra cranial complications were meningitis 40% (8 cases), brain abscess 40% (8 cases), extradural abscess 15% (3 cases) and lateral sinus thrombosis 5% (1 case) (Table-4).

Table-3: Clinical Symptoms

Symptoms	No. patients	%
Otorrhea	20	100
Headache	20	100
Fever	15	75
Decreased Hearing	15	75
Otalgia	10	50
Vertigo	5	25

In our study morbidity occur in three cases. There was epilepsy hemipersis, cerebellar ataxia one case each.(Table-5).

In our study 2 patients died and both were from brain abscess due to very late presentation. Overall mortality rate was 10%. The major operative findings in the middle ear were cholesteatoma in 80% and granulation tissue in 20%.

Table-4: Distribution of Intracranial complications

Complications	No. patients	%
Meningitis	8	40
Brain Abscess	8	40
Extradural Abscess	3	15
Lat. Sinus thrombosis	1	5
Subdural abscess	0	0

Table-5: Morbidity of Intracranial complications

Morbidity	No. patients	%
Epilepsy	1	5
Hemiperises	1	5
Cerebellar ataxia	1	5

DISCUSSION

With advent of antimicrobial agents, the frequency of intracranial complication of chronic otitis media has reduced but still serious complications exist with high mortality.[3-6]

The advent of high resolution CT scan and I/V high doses of proper antibiotic has decreased the mortality and morbidity in otitis media.[7] In pre-antibiotic era the incidence of intracranial complications were 2.3% of cases, but with effective antibiotic and with recent surgical technique, those have been greatly reduced to 0.15–0.04%.[8,9]

In our study 75% patients (15) were between age of 15-25 years, while other studies showed that intracranial complication occurred frequently in children of young adults (74%).[6]

Meningitis is the most common intra cranial complication. Its incidence was 34–77%[3,6] but in our study the incidence is 40%. Patient with meningitis usually presents with fever, headache, vomiting, neck stiffness.

The diagnosis can be made by CSF examination and culture sensitivity. CT scan is done to exclude multiple complications like brain abscess. Mortality rate is being reduced to 8–36%.[6,8,10] In our study the mortality rate from meningitis was zero. The most serious otegenic intracranial complications which occur commonly is brain abscess. It needs prompt diagnosis and treatment. The temporal lobe abscess is the commonest followed by cerebellar abcess.[12] The brain abscess was the commonest intracranial complication in other studies 40% (8 patient) almost equal to meningitis. [11,13]

Lateral sinus thrombosis may result either from direct spread of infection from the mastoid or from thrombophelibitis of the small veins of the middle ear.[6]

The incidence of lateral sinus thrombosis has been reported to be 19%[6,8] and the mortality 10%. In our study only 1 patient was diagnosed as having lateral sinus thrombosis and mortality rate was zero. In three cases, extradural abscess was found. It is usually present with headache and local tenderness and its diagnosis was made by clinical examination and CT scan.

The incidence of extradural abscess in patients with intra cranial complications has been reported to be 16-22%. In our study 15% (1 patient) was having exctradural abscess and no patient died with this complication.

Rate of mortality is 14-32.6% in intracranial complication.[6,8,21] In our study mortality rate was 10% (3 cases). The morbidity rate is reported to be between 11.6 and 27.9%.[8,21] In our study morbidity was 15%. Our morbidity and mortality rate is still high because patients usually present late.

CONCLUSION

The otogenic complications are decreasing, however the morbidity and mortality is still high even with the advent of antibiotics and surgical eradication of the disease. In our region, still the otogenic intracranial complications do occur. Therefore, for early diagnosis of disease detailed history and meticulous clinical examination are the most important tools.

In otogenic intracranial complication the prominent features are headache, fever, nausea, vomiting, personality change and signs of increased intra cranial pressure and focal neurological signs. A delay in the diagnosis and treatment of intracranial complication can lead to increased morbidity and mortality.

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