OTOGENIC INTRACRANIAL COMPLICATION

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ABSTRACT:
Two patients one male of 25 years the other a girl of 10 years old presented to us with purulent ear discharge, severe headache & nausea/vomiting and mastoid abscess in one of them of few days duration. Otoscopy revealed purulent foul smell discharge filling the ipsilateral ears with X-ray mastoid showing a cavity due to bone erosion. Incision & drainage of mastoid abscess followed by radical mastoidectomy in one and radical mastoidectomy straight away in the other were performed with complete eradication of disease and cholesteatoma was achieved clinically. But within 16 hour in the young girl and after 12 days in the 25 years old male again both cases presented in emergency with severe headache, nausea/vomiting and disorientation. CT scan of both the cases revealed right temporal lobe abscess. The girl was already in ICU and the male was re-admitted for the drainage of abscesses under care of neurosurgeon and follow up was done in both the departments for four months.

Key Words:
Chronic Suppurative Otitis Media, Intracranial complication, Brain abscess.

INTRODUCTION:
Choronic suppurative otitis media was responsible for the incidences of mastoiditis and intracranial complications quiet significantly in the preantibiotic era with a considerable number of mortality. After the introduction of antibiotics, there has been a marked reduction in the incidence of these complications from 2.3 % to 0.04 % I. The intracranial extention of infection in chronic otitis media with cholesteatoma is usually via different routes like direct erosion of bones, retrograde thrombophlebitis and through different preexisting fissure and foramina. Nowadays intracranial complications still represent a situation of risk given that morbidity rate is high, reaching upto 36 % 2. The most common intracranial complications are meningitis, cerebral abscess, extradural abscess and lateral sinus thrombosis³. Otogenic brain abscesses should be regarded especially as a severe complication of chronic suppurative otitis media with cholesteatoma. It is also important to use modern imaging modalities like CT scan and MRI for early detection of intracranial lesion and to perform an early otosurgical intervention to manage this severe complication⁴. Otogenic intracranial complications are potentially life threatening conditions and the necessity of close cooperation between otolaryngologist, radiologist and neurosurgeon is stressed⁵.

CASE. NO.1.
A young male of 25 years resident of new Karachi presented in our OPD with the history of recurrent purulent discharge which rapidly filled his right ear canal. He also had severe headache, nausea and impaired hearing. Ear discharge was persistent for the last two months while headache and nausea was noticed for few days. In the past he consulted many clinics & ENT specialists and got conservative treatment for it.

He was admitted in ENT department Fatima Hospital, A detailed history and through ENT examination was done. This young man was apparently toxic while his vitals were with in normal limits. Otoscopy revealed that the left ear has intact tympanic membrane while right ear was filled with purulent foul smelling pus. After the suction we noticed a marginal perforation in the postero- superior quadrant with tender mastoid region and impaired ipsilateral hearing. Pure tone audiogram was performed to assess the degree of deafness and X-ray mastoid was immediately done which showed the bone erosion in the right mastoid while the left mastoid had normal appearance. Apart from urgent medical intervention like IV fluids, antibiotics and analgesics he was worked up for mastoid exploration urgently.
Right mastoid exploration revealed that cholesteatoma was occupying the tympanomastoid region. The whole cleft was exentrated and cavity packed with BIPP gauze. Postoperatively he recovered uneventfully and discharged after eight days.

On twelvethe post-operative day he landed in our OPD with severe headache, vomiting and stupor. CT scan skull was immediately done which showed right temporal lobe abscess. He was readmitted under the supervision of neurosurgeon, the abscess was drained & patient was sent home on tenth post-operative day with the advice for regular weekly follow up.Now up to four months he regularly visited our OPD with no signs or symptoms.

CASE. No.2.
A young girl of only 10 years age presented to us with purulent right ear discharge, severe headache, swollen and tender right mastoid region for the last 3 days. She had a history of ear discharge for the last five years for which she visited different clinics and treated conservatively.

We admitted her in our ENT ward immediately. Incision and drainage of the right mastoid was done urgently. After evacuation of about 15 ml of foul smelling pus the abscess cavity was packed with ribbon gauze soaked with gentamycin cream. Patient was shifted in the ward where she remained asymptomatic for few hours then after she started repeated vomiting, severe headache and disorientation. We decided to explore the mastoid cavity the same afternoon in emergency. It was found that the dural plate was already eroded while sinus plate was intact and a huge cholesteatoma was occupying the tympano-mastoid region with no ossicle other than the foot plate of stapes. Exentration of the mastoid and tympanic cavity was achieved and a BIPP pack was left inside. Next morning she again had repeated vomiting, dehydration and a toxic look. An urgent CT scan skull showed right temporal lobe abscess. She was handed over to the neurosurgeon for the drainage of abscess and follow up. After the drainage of 10 ml of pus on tenth post-operative day she was sent home. Since then she is being followed up regularly in both the departments with no positive findings.

DISCUSSION:
Chronic suppurative otitis media has always presented severe risks to the patients owing to the potential of intra and extracranial complications. Since the advent of antibiotics, there has been significant decrease in the incidence, with noticeable decrease in intracranial complications from 2.3 % to 0.04 %. Complications of chronic suppurative otitis media may be subdivided into intracranial e.g.abscesses of the central nervous system, meningitis, lateral sinus thrombosis otitic hydrocephalus and extracranial complications like retroauricular, zygomatic beard abscesses. Intracranial complications should always be suspected when the patient has clinical manifestations such as persistent headache, malaise, fever, otalgia, nausea/vomiting, neck rigidity, diplopia, blurred vision, ataxia, aphasia etc. Intracranial complications secondary to chronic suppurative otitis media usually occur by the extension of the mucoperiosteum inflammatory process in the brain, lateral sinus, subdural and subarachnoid spaces. In most of the cases, intracranial complications extend through bone dehiscence on the tegmen tempani, through vascular canals directly to the lateral sinus, through the superior petrosal sinus, endolymphatic sac or perineural spaces of the inner acoustic meatus.

We have seen 02 cases of intracranial complications secondary to chronic suppurative otitis media in 02 years while in a retrospective study they have found 32 cases in 13 years in Thailand, another study in Brazil revealed 06 cases in 02 years which may be a higher incidence.

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In our cases we found temporal lobe abscess in both the patients while a retrospective study of Pennvbacker et al. in 1961, reported 200 cases of intracranial complications with 85 cases of temporal lobe and cerebellum abscess, 28 cases of otitic hydrocephalus, 13 cases of meningitis and 8 cases of lateral sinus thrombosis.

Abscesses may be divided into extradural, subdural, intracerebral or intracerebellar. The most common type is extradural and may be due to bone destruction caused by cholesteatoma. Cerebral and cerebellar abscesses occur by retrograde thrombophelbitis. The most common type of abscess is cerebral (Temporal) and the most lethal is cerebellar. It is the progression of an extradural abscess which is reaching up the cerebral or cerebellar parenchyma. The increase in the volume of the abscess may cause neurological signs such as aphasia (cerebral), ataxia and tremor (cerebral). CSF analysis shows increase in pressure and concentration of proteins and low suger. CT scan confirms the diagnosis. Treatment consists of intravenous antibiotic while surgical drainage is made by the neurosurgeon and radical mastoidectomy by otolaryngologist to eradicate the focus. Temporal lobe abscesses were diagnosed in both of our patients who under-went radical mastoidectomy in our department and drainage of brain abscesses was completed by the neurosurgeon.
CONCLUSION:
Despite the fact that the incidence of complications of otitis media has decreased in the last few decades, they are still a challenge for the clinician, especially because of the insidious manner of presentation, usually hidden with the indiscriminate use of antibiotics. Choronic otitis media with cholesteatoma may be the main cause of intracranial complication in our setup, which should be managed early by tympano mastoidectomy as a preventive as well as curative measure of this otherwise mortal complication.

REFERENCES:


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