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Review Article

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A CASE OF BILATERAL CSOM WITH LEFT TEMPORAL LOBE ABSCESS IN 13 YEARS OLD CHILD

Dr. Narender Kumar[1], Dr. Amar Singh[2*], Madhu Rana[3] and Dr. Madan Mohan Sharma[4]

[1]Medical Officer Specialist (ENT), Civil Hospital Tissa, H.P. India.
[2*]Medical Officer Specialist (Dermatology), Civil Hospital Tissa, H.P. India.
[3]Phd. Scholar, Department of Biosciences, HPU, Shimla, India.
[4]Medical Officer, Civil Hospital Tissa, H.P. India.

***Corresponding Author: Dr. Amar Singh**

Medical Officer Specialist (Dermatology), Civil Hospital Tissa, H.P. India.

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ABSTRACT

Chronic suppurative otitis media (CSOM) is a very common disease and intracranial complications are known sequale of CSOM. Otogenic brain abscess is the second most common complication of CSOM after meningitis. A case of otogenic temporal lobe abscess in a 13 year old boy which was managed by drainage of abscess by transmastoid approach, followed few days later by modified radical mastoidectomy (MRM) is reported.

KEYWORDS: Chronic suppurative otitis media, otogenic brain abscess, modified radical mastoidectomy.

INTRODUCTION

Otitis media (OM) is classified into acute otits media (AOM), chronic otits media (COM) and otitis media with effusion (OME). Chronic Suppurative Otitis Media (CSOM) is a subtype of COM characterized by persistent discharge from the middle ear along with perforated tympanic membrane, with or without cholesteatoma.[1,2]

CSOM sometime becomes potentially serious due to its life-threatening complications. The complications arising from this condition can be further divided into intracranial and extracranial. Intracranial complications include intracranial abscesses which can be epidural, subdural, extradural, brain abscess and perisigmoid sinus abscess.[3] These complications, from being common with high morbidity and mortality rates, have become rare now with arrival of the antibiotic era. Given their low prevalence otogenic brain abscesses require a high index of suspicion for diagnosis.

CASE REPORT: A 13 year-old boy who was referred to our outpatient clinic presented with discharge from the both ear for last 1 year, with increased ear discharge over past 6-7 months. Patient was taking medications on irregular basis, with not much improvement in symptoms. He had headache on and off for 8-10 days which was holocranial, more in morning along with vomiting, blurring of vision, and neck stiffness for the last 5 days. Also there was history of moderate degree of fever, decreased hearing in both the ears; more on left side. There was no history of loss of consciousness, limb weakness and seizures.

On general examination, Child was of average built, conscious, co-operative, well oriented to time, place and person, and had neck stiffness. On local examination of left ear, there was swelling of the left external auditory canal (EAC), with thick foul smelling, non blood stained pus discharge in left EAC. A suction clearance was carried out, which revealed a marginal perforation in postero-superior quadrant (PSQ). The right ear tympanic membrane also showed marginal perforation in PSQ. All cranial nerve functions were intact. Fundoscopic examination revealed papilledema. Routine investigations including complete blood count, urine analysis, blood glucose, bleeding profile, liver and renal function tests; all were within normal limits except for leucocytosis.

Computed tomography (CT) brain was suggestive of cerebral abscess in left temporal lobe with perilesional edema with midline shift of 9mm, left mastoiditis, erosion of tegmen tympani and an arachnoid cyst in midline posterior fossa "figure 1". The features were suggestive of left temporal lobe cerebral abscess, secondary to left ear CSOM.

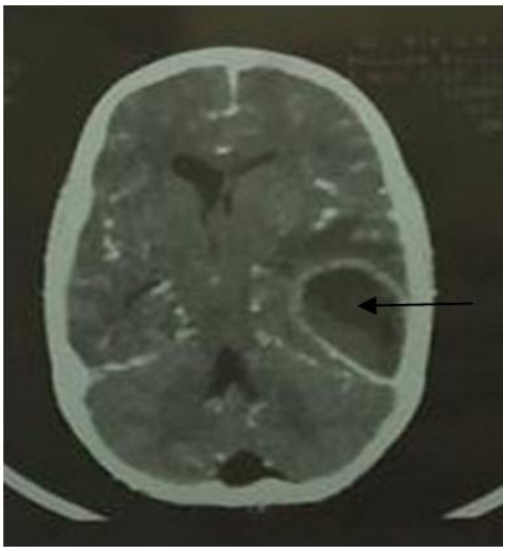

Figure 1: CT scan (axial view) showing extensive encapsulated left temporal lobe abscess (arrow).

An emergency evacuation of the abscess was carried out by a neurosurgeon. On the left side a linear incision over mastoid was given 4cms above external auditory meatus, burr hole was made, dura coagulated and a brain cannula inserted in abscess cavity. Around 40 ml of pus which foul smelled containing yellowish-green pus flakes was drained. Post operative course remain uneventful. Aerobic bacterial culture was sterile and anaerobic bacterial culture showed growth sensitive to metronidazole. Anticonvulsants and antioedema measures were taken. After he was stabilized from initial surgery, left sided modified radical mastoidectomy (MRM) was done, and was kept on regular follow-up thereafter.

DISCUSSION

The incidence of intra cranial complication is higher in males, particularly in those younger than 20 years of age. Most complications arise from chronic rather than acute otitis media. Factors causing complications include high virulence of organism, poor resistance of the patient, presence of chronic systemic diseases, and resistance of the organism to antibiotics. The mortality associated with brain abscess of otogenic origin in the antibiotic era is about 25%.[4]

There has been marked decrease in the incidence of the otogenic intracranial complications because of early diagnosis and prompt treatment of ear infection, availability of higher antibiotics, and advances in otologic surgical techniques.[5] Culture positive abscesses often show polymicrobial infection, with a high incidence of anaerobic bacteria, pyogenic *staphylococci, streptococci, pneumococci* are often found. Gram negative Bacilli like *Proteus, Escherichia Coli* and *Pseudomonas* are cultured with increasing frequency, reflecting the higher incidence of otogenic abscesses from chronic ear disease.[6,7,8,9,10]

A brain abscess progresses through three clinical stages; initial encephalitis, which usually lasts a few days and may be attributed to a viral syndrome. A latent or quiescent stage, in which there are no localizing neurologic changes, which lasts several weeks or rarely several months. The third stage of manifestation, the expanding abscess, is caused by compression as a result of edema and encephalitis around the abscess rather than by the space occupying abscess itself.

Otogenic brain abscess imply the collection of pus in cerebrum or the cerebellum and the symptoms of brain abscess may be generalized or localized. Generalized symptoms include fever, irritability, drowsiness, headache, personality changes, and altered mental status. Continuous and severe headache is the most constant generalized symptom of brain abscess. Signs and symptoms associated with cerebellar abscess include suboccipital headache, vomiting, ataxia, gaze nystagmus, past pointing, intention tremor, dysdiadochokinesis, weakness, and incoordination of ipsilateral muscles. Ipsilateral ataxia is the most constant sign of a cerebellar abscess.[3,6,8]

The CT scan with and without intravenous contrast is no doubt the most important investigation in the diagnosis of brain abscess, and is also the most valuable method for observing the progress of an abscess during treatment. The MRI has further improved the diagnosis.[5,10,11,12]

The treatment of otogenic brain abscess requires a combined neurosurgeon and otologist approach, along with the use of large doses of systemic antibiotics and the agents to lower the intracranial pressure.[5,12,13,14]

Surgery of abscess by aspiration through burr hole or formal craniotomy, open drainage or rarely total excision of abscess cavity by neurosurgeon can be combined with surgical approach to the ear, or it may precede management of the ear, if the intracranial problem is of such severity that it should be managed first. The type of ear surgery that should be done for intracranial complications of CSOM should be determined by the type of ear disease rather than the type of neurologic complication, and it can range from myringotomy, tympanomastoidectomy, modified radical mastoidectomy with or without tympanoplasty and radical mastoidectomy.[11,12,13,14,15,16] Appropriate imaging studies and multidisciplinary approach are crucial in the diagnosis and management.

CONCLUSION

Otogenic brain abscess is a life threatening condition if left untreated. It can prove fatal if immediate intervention is not done. In addition to medical management, early surgical intervention in the form of removing the septic foci in the ear is of vital importance to insure complete recovery.

Conflict of interest: Nil.

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