

CASE REPORT

SUCCESSFUL OUTCOME IN MULTIPLE INTRACRANIAL COMPLICATIONS OF CHOLESTEATOMA

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ABSTRACT: A twenty two year old male presented with left sided otorrhea, otalgia, fever and headache. On examination patient was febrile, conscious, and irritable with neck rigidity. Mastoid tenderness was present. A granulation tissue polyp was seen occupying the entire ear canal. Imaging revealed an extradural abscess in the left posterior cranial fossa adjacent to the mastoid. Computed Tomography revealed Delta sign. Cerebrospinal fluid examination revealed features of meningitis. Before surgery the patient suddenly deteriorated neurologically. Immediate mastoid exploration was done and the extradural abscess was drained through the transmastoid route. Cholesteatoma in the middle ear and mastoid was completely excised. A Cerebellar dura fistula was present through which a cerebrospinal fluid leak occurred which was sealed with a muscle plug. A modified radical mastoidectomy was done. On the sixth postoperative day, patient again complained of headache. A Computed Tomography scan revealed three extradural abscesses in the left parietal region which was drained by neurosurgical colleagues. The patient recovered completely.

KEYWORDS: Chronic suppurative otitis media, Cholesteatoma, Multiple intracranial complications.

MESHTERMS: Otitis media, suppurative, Complications.

INTRODUCTION: Chronic suppurative otitis media with cholesteatoma is a bone eroding disease of the tympanomastoid area having the potential to cause fatal intracranial complications.

Mortality rates increase with multiple intracranial complications. Hence they should be treated urgently and aggressively to achieve a good outcome.

CASE REPORT: A twenty two year old male presented to us with a history of fetid, scanty, purulent drainage from the left ear accompanied by hearing loss since four months. Otalgia, fever with chills and rigors and headache were present since four days. There was no history of vertigo, tinnitus, facial weakness, seizures or altered consciousness.

Examination revealed a well-built patient, conscious, well oriented but irritable. Temperature was 101⁰ F. Neck stiffness was present. ENT examination revealed mastoid tenderness, a granulation tissue polyp was seen in the left ear canal obscuring the drum head. The facial nerve was normal. Vestibular function was normal. Conductive hearing loss was present. A provisional clinical diagnosis of chronic otitis media with cholesteatoma, acute mastoiditis, meningitis and lateral sinus thrombophlebitis was made.

The patient was hospitalized and broad spectrum antibiotics were started. An aural swab for culture and sensitivity was taken which subsequently grew coagulase negative staphylococcus aureus sensitive to gentamycin and amikacin. Blood culture was sterile. Cerebrospinal fluid examination revealed features of pyogenic meningitis. Audiometry was not done because the patient was extremely sick. Computed Tomography (CT) revealed a soft tissue mass in the middle ear and

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mastoid eroding the sinus plate (Fig. 1). A Left parietooccipital extradural abscess was present (Fig. 2). Contrast enhanced computed tomography revealed the Delta sign suggesting the presence of sigmoid sinus thrombophlebitis (Fig. 3). Neurosurgical colleagues opined that the extradural abscess could be drained transmastoid, hence a mastoidectomy was planned. The patient's neurological status deteriorated suddenly. He became stuporous and stopped responding to oral commands.

An emergency mastoid exploration was done. On removal of the mastoid cortex, the extradural abscess drained spontaneously through a tegmen defect. A large cholesteatoma was seen occupying the entire middle ear and mastoid. It was dissected and removed. The sinus plate and cerebellar plate was completely eroded. The sigmoid sinus wall was thickened by granulations. The sinus was soft and compressible. Granulations had penetrated the cerebellar dura, through which cerebrospinal fluid egress was present. This was sealed using a muscle plug. All diseased air cells in the mastoid were drilled out, granulations and diseased mucosa was excised to complete a modified radical mastoidectomy. Postoperatively the patient improved, but on the sixth postoperative day he complained of headache. Computed Tomography revealed three extradural abscesses in the left parietal region (Fig. 4), which was drained by neurosurgical colleagues. The patient recovered completely and was discharged. Follow-up revealed a well healed mastoid cavity at three months.

DISCUSSION: Intracranial complications due to chronic suppurative otitis media with cholesteatoma are life threatening complications with an annual incidence of 7.5%¹. These Patients are usually from low socioeconomic groups with poor access to health care. Intracranial complications are common in children and adolescents, 58% of intracranial complications occur in the first two decades of life², and they have a tendency to occur multiply³ with a mortality rate of 8%³.

Various complications can occur, these are meningitis, brain abscess, extradural abscess, subdural abscess, lateral sinus thrombophlebitis and otitic hydrocephalus⁴. Infection from the tympanomastoid can spread through direct bone erosion, septic embolization, normal anatomic pathways and preformed pathways. Clinical features like headache, fever, and vomiting, altered mental status and neck stiffness should alert the otologist in suspecting an intracranial complication. A complete Ear Nose Throat and neurological examination must be done. Aural swabs for culture and sensitivity tests must be obtained. Hematological tests including blood culture are done. Cerebrospinal fluid analysis is performed to detect meningitis. The most important investigation in these patients is a Computed Tomography/Magnetic Resonance Imaging of the brain⁵.

When a complication is diagnosed the patient is referred to a neurosurgical unit for treatment. When the patient is neurologically stable, the offending ear is made safe by performing a radical/modified radical Mastoidectomy. This patient had meningitis, lateral sinus thrombophlebitis and four extradural abscesses giving rise to a total of six intracranial complications. Patients with multiple intracranial complications must be treated urgently and aggressively to achieve a successful outcome as demonstrated in this case report.

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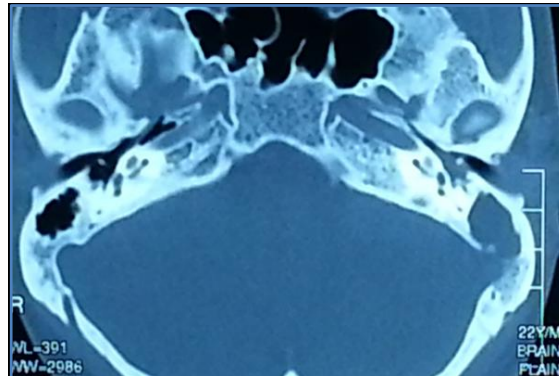


Fig. 1: Axial C T showing a soft tissue mass in the left middle ear and mastoid. Sinus plate erosion is also seen

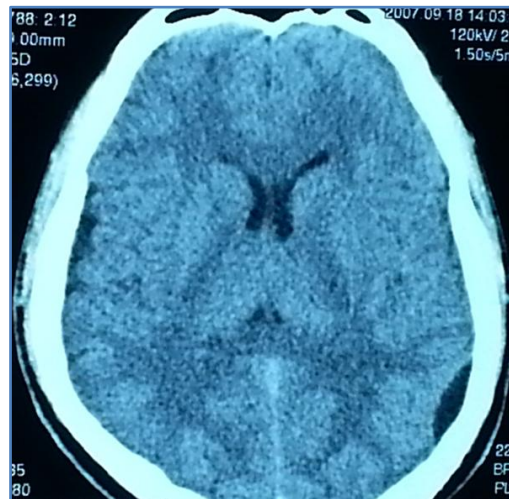


Fig. 2: Axial CT showing left parietooccipital extra dural abscess

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Fig. 3: Contrast enhanced CT. Delta sign is visible

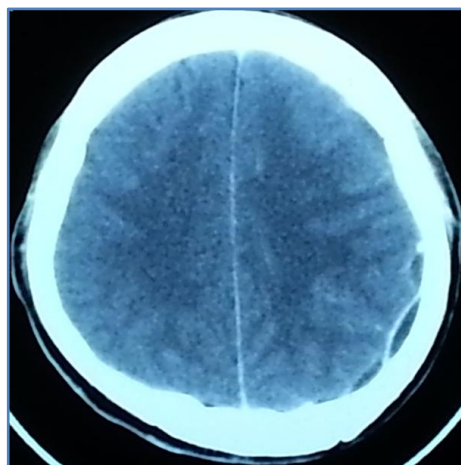


Fig. 4: CT revealing multiple extradural abscesses

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