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Case Report

Otogenic Thalamic Abscess - An Unusual Presentation

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I N F O

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A B S T R A C T

This case report presents a case of a very rare scenario of chronic suppurative otitis media (CSOM), atticoantral (squamosal) type presenting with thalamic abscess and isolation of a rare microorganism Streptococcus sanguinis.

Keywords: Chronic Suppurative Otitis Media (CSOM), Atticoantral Disease, Squamosal Disease, Streptococcus Sanguinis, Intracranial Complication of CSOM, Thalamic Abscess

Introduction

Chronic suppurative otitis media (CSOM) is a persisting inflammation affecting the middle ear cleft for more than 3 months duration.[1] There are two types of CSOM, tubotympanic (mucosal), and atticoantral (squamosal) type. Atticoantral disease affects the attic, antrum, and mastoid. It is characterised by marginal perforation or attic perforation of the tympanic membrane with cholesteatoma, granulations, and bone destruction.

The incidence of chronic suppurative otitis media (CSOM) and its complications is less due to the use of better antibiotics but CSOM is a common disease in developing countries.[2] CSOM of the atticoantral type is usually associated with intracranial and extracranial complications. Commonly occurring intracranial complication is meningitis followed by brain abscess.[3] Thalamic abscess is a very rare condition that occurs as a metastatic lesion with otitis media, congenital heart disease, intrathoracic sepsis, abdominal sepsis, dental caries, or sinusitis.[4]

The initial management of brain abscess comprises early computed tomographic or magnetic resonance imaging and administration of intravenous antibiotics with activity against Streptococcus pneumoniae and Haemophilus influenzae. The definite treatment is craniotomy with abscess drainage followed by mastoidectomy to clear the infective source.[5]

Case Report

A 43-year-old male presented to the Department of Otorhinolaryngology at Chettinad Hospital and Research

Institute with complaints of left ear discharge since childhood which was aggravated for the past two years. The discharge was mucoid in consistency, foul smelling, scanty in quantity, and not blood-stained. There was no history of hearing loss, tinnitus or giddiness. The patient had a past history of headache which was associated with vomiting, intermittent fever, and right hemisensory loss with left ear discharge. He was diagnosed with a left thalamic abscess and underwent left parieto-occipital craniotomy for evacuation of the left thalamic abscess on January 9, 2018. Pus culture and sensitivity of thalamic abscess showed a rare organism, Streptococcus sanguinis and the patient was treated with appropriate antibiotics (Figure 1).

Figure 1.A Picture of the Patient Involved in the Study

A thorough clinical examination including general and systemic examination along with ear, nose and throat examination was carried out. Otoscopic examination showed a retraction pocket in the posterosuperior quadrant and cholesteatoma debris in the pars flaccida (Figure 2).

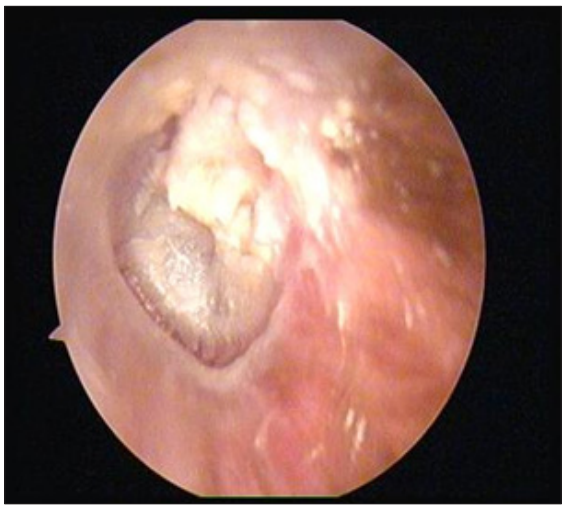

Figure 2.Oto-endoscopic Image of the Left Ear showing Whitish Debris with Posterosuperior Retraction Pocket

HRCT temporal bone showed soft tissue in the left epitympanum and mesotympanum extending to mastoid air cells, erosion of long process of incus with no evidence of facial canal, and lateral semicircular canal involvement (Figure 3).

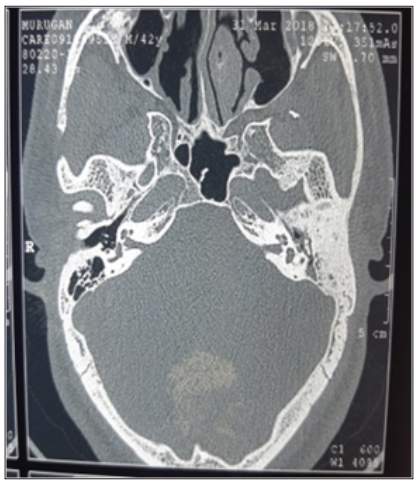

Figure 3.HRCT Temporal Bone Scan Imaging revealing Soft Tissue in Left Epitympanum and Mesotympanum extending to Mastoid Air Cells and Erosion of Long Process of Incus. No evidence of Facial Canal or Lateral Semicircular Canal Involvement

The MRI brain revealed a well-defined peripherally enhancing multilocular lesion involving the left thalamus causing effacement of the atrium of left lateral ventricle (Figure 4).

Figure 4.MRI Brain revealed Well-defined Peripherally Enhancing Multilocular Lesion involving the Left Thalamus causing Effacement of Atrium of Left Lateral Ventricle

The patient underwent transcanal endoscopic atticoantrostomy with type III tympanoplasty. Intraoperatively, body of incus was found to be eroded, and cholesteatoma sac

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was removed. Transcanal endoscopic atticoantrostomy with type III tympanoplasty was performed.

Postoperatively, the patient was treated with intravenous antibiotics. He was asymptomatic after surgery and was followed up regularly to date (Figure 5).

Figure 5.Post-operative Trans-endoscopic Image of Left Ear

Discussion

Chronic suppurative otitis media (CSOM) is the most common disease in both paediatric and adult populations and is still a major health problem in developing countries.[1] Due to better usage of appropriate antibiotics, the incidence of intracranial and extracranial complications has declined. Meningitis is a common intracranial complication characterised by headache, fever, and neck stiffness. In lateral sinus thrombosis, mortality is high. A brain abscess is a collection of pus within the brain parenchymal tissue. The incidence of brain abscesses is about 8% of intracranial masses in developing countries, whereas, in western countries, the incidence is about 1-2%.[6] The patient presents with symptoms of fever, headache, and nausea. The incidence of temporal lobe abscess is 67% and that of cerebellar abscess is 27%.[3]

Thalamic abscess is a rare intracranial complication and the incidence is 1.3 to 6%. The diagnosis is made by proper clinical history and examination, isolation of causative organism and contrast-enhanced CT imaging. CT scan findings are hypodense cystic lesion with capsule and oedema around the lesion with or without midline shift. The common causative organism includes *P. mirabilis*, *S. pneumoniae*, Streptococcus pyogenes, non-typeable Haemophilus influenzae, *Pseudomonas aeruginosa*, Staphylococcus aureus and Fusobacterium necrophorum. The management includes the administration of appropriate antibiotics with or without aspiration. Pus is drained by a simple burr hole and aspiration. Mastoidectomy is necessary to eradicate the source of infection.[7]

In a study conducted by Nalbone VP et al., Streptococcus sanguinis were isolated in a solitary case of non-otogenic abscesses.[8] A case of thalamic abscess caused by Streptococcus constellatus has been reported in the literature.[9]

In this rare case report, chronic suppurative otitis media (atticoantral disease) led to a rare intracranial complication, thalamic abscess. The microorganism isolated from the abscess was Streptococcus sanguinis which is a rare organism. It is a gram-positive, nonmotile, non-spore-forming cocci found in a healthy oral cavity and contributes to the aetiology of both caries and periodontal disease.

Conclusion

In this modern medicine era, where there is judicious use of antibiotics and the prevalence of otogenic brain abscess seems to be low, this case report presents a rare scenario of chronic suppurative otitis media - atticoantral disease with intracranial complication.

Usually cerebral and cerebellar abscesses are comparatively common due to otogenic causes. An incidence of an otogenic thalamic abscess has been very rarely reported in the literature.

In this case, an unusual presentation of a thalamic abscess due to squamosal type of chronic suppurative otitis media is reported, which is very rare.

To date, there has been no case of otogenic thalamic abscess caused by Streptococcus sanguinis in the literature. Hence, this case signifies the rarity of clinical presentation. It may be taken into consideration and is critical that clinicians include this condition in the differential diagnosis.

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