Obstructive Hydrocephalous”: An Unusual Complication of Chronic Suppurative Otitis Media

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Abstract

Introduction: Complications in patients with squamous type of otitis media are uncommon in this era. Complications present with extracranial or intracranial signs and symptoms. Purulent Meningitis is the most commonly encountered intra-cranial complication. Otitic hydrocephalous with raised intracranial pressure is rarely encountered as a complication of COM.

Case report: We are reporting here a case of young male patient with squamous type chronic suppurative otitis media, who presented with brain abscess and subsequent obstructive hydrocephalous.

Conclusion: Chronic suppurative otitis media can complicate as otitic hydrocephalous. But, obstructive hydrocephalous with dilated ventricle as sequelae is very rare. Prompt intervention is warranted to prevent its grave consequences.

INTRODUCTION

The incidence of complications in cases of acute or chronic suppurative otitis media has been reduced significantly with the use of antibiotics and timely surgery. Complications are more common in pediatric age group, low socioeconomic status, immunocompromised and in patients inadequately treated with antibiotics in terms of dosage or duration. Extra-cranial complications are more common than intracranial. Meningitis and brain abscess are the most common intracranial complication [1-3].

Owing to the possibility of multiple complications, patients should be evaluated thoroughly. Radiology, especially contrast enhanced Computed Tomogram of temporal bone and brain form is important for diagnosing complications. Patients are managed with combination of systemic antibiotics and surgery. Surgical intervention sometimes requires working in tandem with neurosurgeons, especially in cases of intracranial, intracerebral complications.

Hydrocephalus is derived from a Greek word “hydro” meaning water and “cephalus” meaning head. It is a condition with excessive accumulation of fluid in brain, which often leads to dilatation of ventricles. Otitic hydrocephalous is a rare complication, where the intracranial tension is raised without any ventricular dilatation or change in cerebrospinal fluid biochemistry.

We are presenting a case of young male who presented with obstructive hydrocephalous as a complication of squamous type chronic suppurative otitis media which is very rare.

CASE REPORT

A 12 year old male patient presented with a history of long standing foul smelling purulent discharge from his left ear associated with hearing loss since his early childhood. For past 3 weeks, he had worsening ear complaints with imbalance during walking and had diplopia. On evaluation, he had found to have left ear unsafe suppurative otitis media, active, with ipsilateral severe sensori-neural hearing loss. For past 3 weeks, he had worsening ear complaints with imbalance during walking and had diplopia. On evaluation, he had found to have left ear unsafe suppurative otitis media, active, with ipsilateral severe sensori-neural hearing loss. He had right sided lateral rectus palsy with double vision on right gaze, but his visual acuity was intact. Radiology in form of high resolution computer tomography revealed a large ipsilateral cerebellar abscess with dilated ventricles suggestive of raised intracranial tension with hydrocephalous (Figure 1).

He was started on intravenous injection ceftriaxone 1 gram twice daily and injection metronidazole 250 mg three times daily and other conservative treatment. Neurosurgical opinion was obtained. Burr hole drainage of cerebellar abscess followed by left ear modified radical mastoidectomy was preferred in emergency. Around 20 ml of pus was drained though Burr hole drainage. Cholesteatoma sac was found to be involving the whole of mastoid antrum, aditus, attic and middle ear. The tegmen tympani and mastoideum was intact, suggesting a haematogenous spread of disease intra-cranially.

Post-operatively he had high grade fever, bed wetting...
with neck rigidity, for which neurology opinion was taken. He was diagnosed to have meningitis and was started on intravenous ceftriaxone, vancomycin, metronidazole, mannitol, dexmethasone and phenytoin as per dose. No pathological organisms were isolated from the drained cerebellar abscess. After 1 week of treatment, he had progressive improvement his symptoms. Follow-up computer tomography showed progressive resolve of abscess and ventricular dilatation. He was continued on medication for another two weeks and his lateral rectus palsy was also improved (Figure 2). He was discharged from the hospital in stable condition without any neurological sequelae.

**DISCUSSION**

Complications in squamous type otitis media can either be extra cranial or intra cranial. Extra cranial complications include intra-temporal like petrositis, facial palsy, labyrinthitis or may be extra temporal like post-auricular abscess, zygomatic abscess, bezold abscess, citelli’s abscess. As compared to previous era, no significant changes in complications rate of CSOM had been noted, but a significant shift towards extracranial complication has occurred [4].

Intracranial complications includes purulent meningitis, brain and cerebellar abscess, meningoencephalitis, lateral sinus thrombosis, epidural and subdural empyema and otitic hydrocephalous. Otitic hydrocephalous is very rarely encountered (1%), but is associated high morbidity [2]. It occurs probably due to venous sinus thrombosis decreasing venous drainage or due to impaired absorption in arachnoid villi due to thrombosis extending to superior sagittal sinus. But, lateral sinus thrombosis alone can impede intracranial venous drainage and subsequently enhance the CSF pressure [5].

Our patient presented with large cerebellar abscess causing obstruction to the cerebospinal fluid outflow, thus causing obstructive hydrocephalous. Ipsilateral lateral rectus palsy was due to VI cranial nerve involvement, occurs as a complication of petrous apicitis. But opposite i.e; right lateral rectus palsy in our patient was probably due to raised intra cranial tension. Sometimes, it can lead to blurring vision and permanent vision loss in non-treated cases due to development of papilledema. A similar case of obstructive hydrocephalous as a complication of otitis media with Actinomycosis turicensis has been described in literature [6].

**CONCLUSION**

Intracranial complications are not infrequent in long standing cases of chronic suppurative otitis media with cholesteatoma, especially in poor socioeconomic classes. High suspicion with early surgical intervention in form of canal wall down mastoidectomy and intravenous antibiotics can reduce morbidity and mortality in complicated cases. Neurosurgical intervention may be warranted in squamous type chronic otitis media complicated with otogenic brain abscess.

**REFERENCES**