Cerebellar abscesses are uncommon but are life-threatening. Optimal assessment of the likely pathogenesis of the lesion and causative pathogens is essential for a favorable outcome. With the advent of routine neuroimaging and less invasive neurosurgical techniques, the mortality rate of brain abscesses has fallen, but an understanding of the complexities of this infection is crucial for management. The incidence of intracranial complications such as meningitis and brain abscesses in patients with chronic otitis media has been reported as 0.24–0.45%. Antibiotics and early mastoid surgery have dramatically decreased intracranial suppurative complications of otitis media. With the incidence of increasing HIV infection, there is an increase in number of cases of brain abscesses. Most abscesses are seen in the temporal lobe or the cerebellum. Early diagnosis of intracranial complications may be life-saving. The bacteriology of a brain abscess is diverse and usually consists of a complex mixture of aerobes and anaerobes.

CASE REPORT

A 55 years old male who was non-diabetic, non-hypertensive, presented with sudden onset of moderate degree of fever without rigors and chills and associated with severe headache of 6 days duration. Clinically he had 38.4°C fever, GCS E3 M5 V4, normal and reacting pupils, slurred speech, left upperlimb monoparesis, extensor plantars and neck rigidity. ENT examination and systemic examination did not reveal any focus of infection.

He had undergone CT Scan head (plain + contrast) and Lumbar puncture in a peripheral hospital before coming to this hospital. CT Scan head showed left cerebellar SOL reported as abscess or tumour.[Figure 1] He underwent MRI Scan brain plain + contrast and MR Spectroscopy in this hospital, which showed ring enhancing hypointense lesion in left cerebellar hemisphere with perifocal oedema compressing fourth ventricle and causing obstructive hydrocephalus.[Figure 2] MR Spectroscopy showed high choline, creatine peak with decreased height of NAA and hence radiologically he was reported to have Malignant tumour in the form of Glioma.[Figure 3]

However with clinical picture, CSF findings and radiological findings combined together was in favour of cerebellar abscess with tumour as differential diagnosis.

He underwent right ventriculo-peritoneal shunt followed by suboccipital craniectomy and total excision of abscess. The abscess was thick walled containing pus.[Figure 4] Microbiological studies revealed pus cells on direct smear and no organisms were grown on aerobic and anaerobic cultures.

Postoperatively he was managed with elective ventilation and later tracheostomy, antibiotics and anti oedema measures. He developed spontaneous left sided pneumothorax on fourth postoperative day which was treated with left intercostal drainage.
Later he had a slow and steady recovery in neurological status.

Histopathological evaluation of abscess wall showed presence of necrotic tissue, predominantly polymorphonuclear leucocytes, lymphocytes, few plasma cells, relative astrocytes with a few areas of normal brain tissue. No evidence of granuloma formation, no evidence of tuberculosis and no evidence of tumour was seen. [Figure 5]

He was thoroughly investigated for any primary focus of infection but could not find the same including ear, mastoid and paranasal sinuses.

RESULTS AND DISCUSSION

Brain abscess can be solitary or multiple, can be supra tentorial or infratentorial. Cerebellar abscess constitutes 17.9% of brain abscesses. Brain abscess is usually secondary to cyanotic heart diseases, mastoiditis, attic variety of chronic suppurative otitis media, infections from paranasal sinuses, bronchiectasis, lung abscess or pyoderma or following subdural empyema or following compound depressed fracture. Brain abscess is common in diabetics and in immunocompromised patients. Brain abscesses are caused by pyogenic organisms, tuberculosis, granulomas or parasitic infection. No primary source can be found in 15% of brain abscess patients.

Our case was non diabetic and was immunocompetent. We could not find any primary source of infection.

Even though MRS findings was suggestive of brain tumour, MRS scan picture was of brain abscess as top on the list.

Regarding antibiotics he was treated with antibiotics effective against gram positive, gram negative and anaerobes as no organism were grown on pus culture.

Figure 1 - CT Scan head showing left cerebellar SOL.

Figure 2 - MRI Scan Brain Plain + Contrast and MR Spectroscopy showing ring enhancing hypointense lesion in left cerebellar hemisphere with perifocal oedema compressing fourth ventricle and causing obstructive hydrocephalus.

Figure 3 - MR Spectroscopy showing high choline, creatine peak with decreased height of NAA.

Figure 4 – Thick walled abscess containing pus.
References


