

Cerebellar Abscess Caused by *Enterococcus Faecalis*: A Case Report

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Abstract: Cerebellar abscesses are uncommon. We report a case of enterococcal cerebellar abscess in a 58 year old male who was a known case of chronic suppurative otitis media. He initially presented with nausea, vomiting, headache and dizziness. Brain magnetic resonance imaging demonstrated an abscess. The abscess material culture yielded an isolate which was identified as *Enterococcus faecalis*. *Enterococcus faecalis* cerebellar abscesses are a rare condition that must be considered in the differential diagnosis of cerebellar lesions.

Key words: Cerebellar Abscess • Chronic Otitis Media • *Enterococcus Faecalis*

INTRODUCTION

Cerebellar abscess is a localized infection of the cerebellum that produced by different pyogenic organisms [1]. Cerebellar abscesses can originate from hematogenous spread such as bacterial endocarditis or IV drug abuse, following penetrating head trauma including neurosurgical procedures, direct extension of cranial infections such as mastoiditis or sinusitis and rarely following meningitis but no source can be identified in 15% of cases [2-4]. Enterococci are part of the normal intestinal flora that has been long recognized as important pathogen for humans and animals. The genus *Enterococcus* contains over 17 species, that some of them cause clinical infections [5, 6]. We report a case of enterococcal cerebellar abscess in a 58 year old male who was a known case of chronic suppurative otitis media.

Case Presentation: A 58-year-old man with a 7-day history of headache, dizziness, vomiting and imbalance in motion was presented. The patient was immunocompetent and suffered from chronic suppurative otitis media of right ear following trauma 3 months ago. At time of admission the patient was conscious, with OT=38.5, BP=125/85, PR=84, RR=17, papilledema, nystagmus and right cerebellar dysfunction. There was no neck stiffness by

physical examination and otoscopic evaluation revealed the exudation of fresh pus from the right ear. Cardiovascular, respiratory and abdominal examinations were found to be normal. Laboratory studies revealed an elevated white blood cell (WBC) count of 17400/mm³ with 90% neutrophils, erythrocyte sedimentation rate (ESR) in first hour was 18mm and an elevated C-reactive protein level of 23.5 mg/dl. Serological tests were negative for human immunodeficiency virus (HIV), hepatitis B and hepatitis C. Biochemical parameters and chest x-ray were within normal limits, blood culture (two times) and urine culture were negative. CT of brain showed a hypodense lesion of cerebellum with mass effect and increased intracranial pressure. Brain magnetic resonance imaging (MRI) showed a ring enhancing lesion in the right cerebellar hemisphere with a fluid signal value at the T1 and T2 sequences. (Fig. 1)

Posterior fossa craniotomy was performed and drainage of cerebellum abscess was done. Abscess material was processed and Gram stain of the smear showed a plenty of pus cells and Gram positive cocci in pairs and short chain. Ziehl-Neelsen stain showed no acid fast bacilli and PCR for mycobacterium tuberculosis was negative. Abscess material was cultured aerobically and anaerobically and yielded a bacterium which was identified as *Enterococcus faecalis* based on Facklams conventional method [7].

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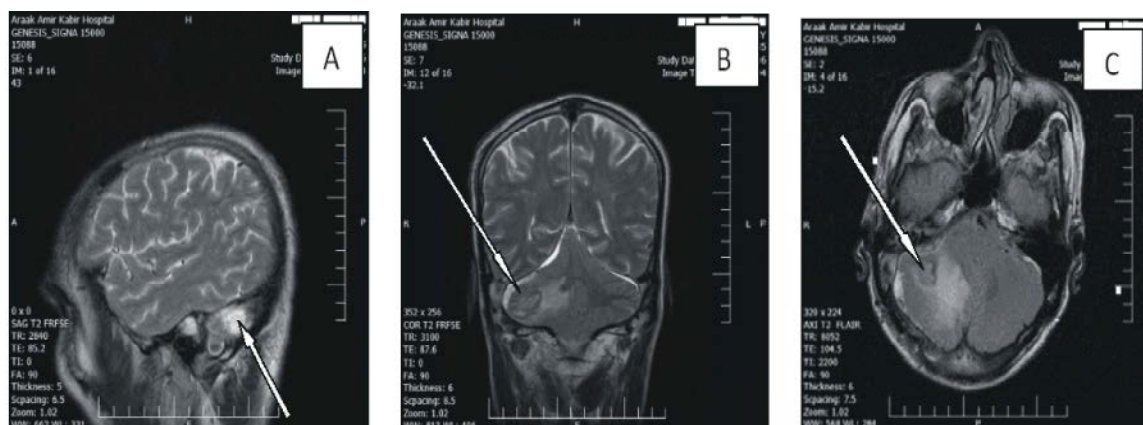


Fig. 1: Brain MRI (A, sagittal view; B, coronal view; C, axial view) showing a ring enhancing lesion in the right cerebellar hemisphere with a fluid signal value at the T1 and T2 sequences.

The isolate was sensitive to ampicillin, gentamicin, vancomycin, ciprofloxacin, levofloxacin, imipenem and meropenem. Patient was treated with intravenous vancomycin plus ampicillin and ceftriaxone for 4 weeks. Transthoracic and transesophageal echocardiography findings are negative for vegetation. After four weeks of antibiotic therapy he was discharged without any complication or neurological deficit. On follow up visits the patient was doing well and showed marked improvement in the radiological findings on a follow-up CT scan.

DISCUSSION AND CONCLUSION

Ear infections are the most common causes of brain abscesses. Review of the literature revealed only few cases of brain abscesses which were caused by *Enterococcus faecalis* worldwide. Sonavane *et al.* [8] reported a cerebellopontine angle abscess which was caused by *Enterococcus* species in a 12 year old female with a history of chronic otitis media of both ears. Mashimoto *et al.*, reported a case of *E. faecalis* brain abscess which was associated with enterococcal endocarditis [9]. Mohanty *et al.* reported a case of otogenic brain abscess which was caused by *E. avium* from India [10]. Masaki *et al.* reported a case of *E. faecalis* brain abscess in a patient with suprapharyngeal cancer [11]. Thus, *E. faecalis* is an uncommon cause of otogenic brain abscess and its appropriate identification is required and an early treatment can be given to prevent complications. The duration of therapy can be adjusted according to the causative organism(s), patient's condition, size and number of abscesses and response to treatment [12]. A shorter course (4-6 wk) may suffice for

cerebritis and in patients who underwent surgical drainage and a long course (>6 wk) is required for multiple abscesses, encapsulated abscess with tissue necrosis, abscesses in vital intracranial locations such as brain stem and in immunocompromised patients [13]. The antimicrobial course is through an intravenous route and there is no evidence that transition to oral therapy is appropriate [14]. When patients present with a history of chronic otitis media, headache, nausea and vomiting, they should be assessed for a possible cerebral or cerebellar abscess. Even though the morbidity and mortality rates are high for patients with cerebellar abscesses, but earlier diagnoses which are made by CT scan or MRI, advances in the microbial isolation technique and early intervention by surgical procedures have all contributed to an improved outcome in patients.

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