Sterile subdural empyema: an unusual presentation

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DESCRIPTION

A 66-year-old man presented to the emergency department with a 6-week history of progressively worsening generalised weakness and gait instability. Physical examinations revealed a low-grade fever of 37.7°C. In addition, the patient was found to have very poor dentition and bilateral sensorineural hearing reduction with no other focal neurological deficit. Laboratory investigations showed a white cell count of 25.8 10^9/L (Ref: 4–10.8 10^9/L), predominately neutrophils at 84% (Ref: 36%–75%). A CT of the head was negative for any acute processes and a subsequent MRI of the head with and without contrast was consistent with bilateral frontal subdural empyema (SDE) and ventriculitis (figure 1). He was started initially on vancomycin, ceftriaxone and metronidazole and he underwent bilateral burr hole biopsy and drainage of a thick, creamy white fluid within 2 days of starting the antibiotics. Pathological findings were consistent with an abscess; however, the microbiological culture failed to grow any organisms. The patient was continued on ceftriaxone and metronidazole for a total of 5 weeks. He made very well recovery with no residual neurological deficits.

SDE is a rare, life-threatening, purulent collection of material between the outer dura mater and inner arachnoid mater.[1] It accounts for 20% of all cases of intracranial abscesses and usually occurs following sinusitis, head trauma or surgery, metastatic bacteraemia or pre-existing subdural haematoma.[1] In this case, it was attributed to poor dentition, which accounts for only 0.7% of SDE cases.[2] Although operative cultures can identify the causative organisms, 7%–52% of cases yield no growth, which is largely attributed to the prior use of antibiotics or improper use of anaerobic culture techniques.[3]

SDE is a true neuroglial emergency[3] and, if untreated, can lead to permanant neurological deficits such as seizures, cerebral venous thrombosis, hydrocephalus, cerebral swelling, coma and eventually death.[1] Diagnosis is made with radiographic imaging including CT scan and, more sensitive, MRI.[1 3] Treatment requires a prolonged course of antibiotics and immediate surgical evacuation with either a burr hole or craniotomy.[3] These measures have led to reduced morbidity and mortality.[1]

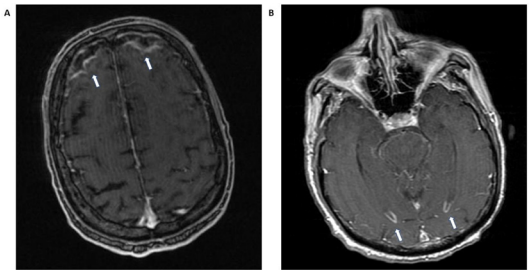

Figure 1 MRI head. (A) Fast spoiled gradient recalled 3D sequence with contrast showing bilateral frontal subdural fluid collections measuring up to 1.1 cm on the left and 1 cm on the right (arrows). (B) Axial T1 weighted with contrast showing signal abnormalities within the occipital horns of both lateral ventricles consistent with ventriculitis (arrows).

Learning points

- Subdural empyema (SDE) is a rare, life-threatening neurological emergency and if left untreated can eventually lead to death.
- Early recognition and rapid antibiotics and surgical intervention can reduce the morbidity and mortality of SDE.

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Competing interests None declared.

Patient consent Obtained.

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