Brain abscess in a patient with chronic sinusitis

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DESCRIPTION

A middle-aged patient with a previous history of chronic sinusitis and arterial hypertension was admitted because of altered mental status. Two days earlier, symptoms such as fever, chills, nasal obstruction and headache slowly developed. On examination, the patient was febrile and with stiff neck. The remainder of the physical examination was normal. CT scan (figure 1A,B) and T1-MRI (figure 2A–C) were both performed; besides signs of sinusitis, a 2 cm right periatrial expansive lesion surrounded by vasogenic oedema was found being compatible with brain abscess. A thorough investigation was done to exclude infectious endocarditis, including echocardiography and blood cultures which were all negative. Viral serologies, including HIV, were negative. Based on the brain lesion characteristics (size and peculiar location), a conservative approach with broad-spectrum antibiotics (ceftriaxone, metronidazole and vancomycin) was initially suggested by Neurosurgery. However, 20 days after, the patient presented with neurological deterioration. A CT scan was repeated showing ventriculomegaly and hydrocephalus which required extraventricular drain placement. All blood cultures remained negative. Unfortunately, despite all efforts, the patient died 2 days later.

Intracranial abscess is an uncommon, serious and life-threatening infection with poor outcome.[1] The classic clinical triad of fever, headache and focal neurological deficits should raise the suspicion of brain abscess despite occurring in only about 2–34% of patients.[1] Aetiology can often be identified; however, in about 15% of cases, no source can be found. Occasionally, brain abscess results from contiguous infections such as sinusitis.[1] Based on the patient's clinical presentation, sinusitis was the most probable source of infection.

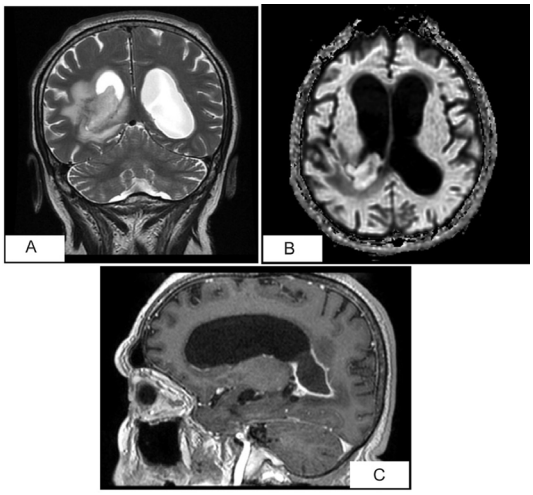

Figure 2 (A) MRI coronal plane demonstrating periatrial abscess and right posterior lateral ventriculitis. (B) MRI axial plane demonstrating periatrial abscess and right posterior lateral ventriculitis. (C) Another perspective of the periatrial abscess and right posterior lateral ventriculitis in MRI sagittal plane. (A–C) MRI demonstrating periatrial abscess and right posterior lateral ventriculitis.

According to the literature, in pyogenic abscess <2.5 cm, the first-line treatment is antimicrobial therapy; for those bigger than 2.5 cm, surgical intervention (adequate drainage) is recommended.[2] However, this decision should be individualised based on the evidence of growing abscess while on antibiotics or no change in size at 2–3 weeks.[2 3] In this case, ventricular drainage combined with intravenous and/or intrathecal antibiotics should be immediately performed.[3] Mortality rate correlates directly with the disease progression and patients' neurological status on admission.[3]

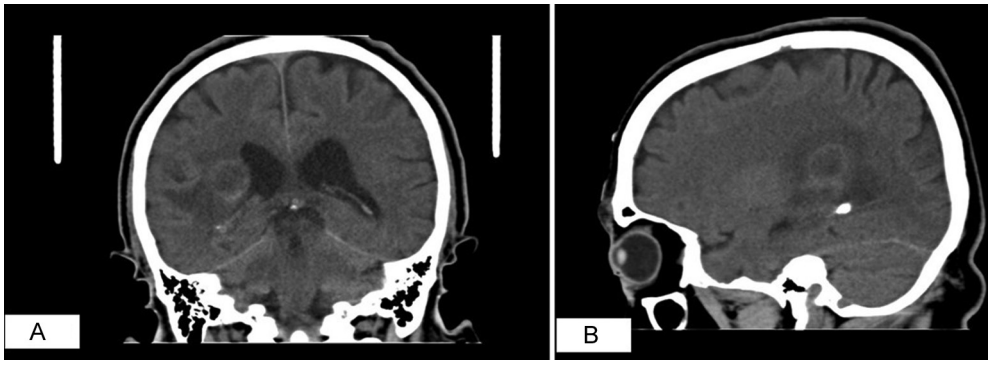

Figure 1 (A) CT scan coronal plane showing brain abscess surrounded by vasogenic oedema. (B) CT scan sagittal plane showing brain abscess surrounded by vasogenic oedema. (A,B) CT scan showing brain abscess surrounded by vasogenic oedema.

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Learning points

- High clinical suspicion is necessary for early recognition and prompt treatment.
- Especially in immunocompetent patients, infection from contiguous structures must be considered.
- Despite the advent of newer antibiotics and surgical strategies, the optimal clinical approach remains controversial.

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Competing interests None declared.

Patient consent Detail has been removed from this case description/these case descriptions to ensure anonymity. The editors and reviewers have seen the detailed information available and are satisfied that the information backs up the case the authors are making.

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REFERENCES

1 Patel K, Clifford DB. Bacterial brain abscess. *Neurohospitalist* 2014;4:196–204.
2 Arlotti M, Grossi P, Pea F, *et al*. Consensus document on controversial issues for the treatment of infections of the central nervous system: bacterial brain abscesses. *Int J Infect Dis* 2010;14:S79–92.
3 Alvis Miranda H, Castellar-Leones SM, Elzain MA, *et al*. Brain abscess: current management. *J Neurosci Rural Pract* 2013;4:S67–81.