

1999; Cartes-Zumelzu et al, 2004). Magnetic resonance proton spectroscopy may play a future role in the discrimination of abscesses from necrotic tumours, but it is more time consuming and may be less accurate than diffusion-weighted magnetic resonance imaging when considering deep, non-skull base lesions (Lai et al, 2002). In this case, rapid expansion of the lesion adds certainty to the diagnosis of abscess.

The early identification of brainstem abscesses expedites antibiotic treatment, which may negate the need for surgery (Carpenter, 1994). Antibiotic therapy, either used definitively or as an adjunct to surgery, must cover commonly implicated pathogens including streptococcus, *Staphylococcus* spp and anaerobic organisms (Carpenter, 1994; Muzumdar et al, 2011).

Common sites of primary infection include the skin, ears, lungs, dentition and cardiac valve vegetation (Carpenter, 1994; Rajshekhar and Chandy, 1994). These should be assessed to identify causative

organisms and guide treatment. If the patient deteriorates despite antibiotic therapy, immediate microsurgical or stereotactic drainage should be performed (Rajshekhar and Chandy, 1994; Sclar et al, 2007). **BJHM**

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## LEARNING POINTS

- Ipsilesional lateral gaze palsy and contralesional nystagmus indicates pathology involving the paramedian pontine reticular formation.
- Diffusion-weighted magnetic resonance imaging is a key tool to allow the differentiation of brain abscess from other pathologies, such as infarcts and neoplasms.
- Initial conservative management using intravenous antibiotics is appropriate for small abscesses.
- If the patient deteriorates or fails to improve clinically or radiologically, urgent surgical drainage of the abscess is essential.

## IMAGES IN MEDICINE

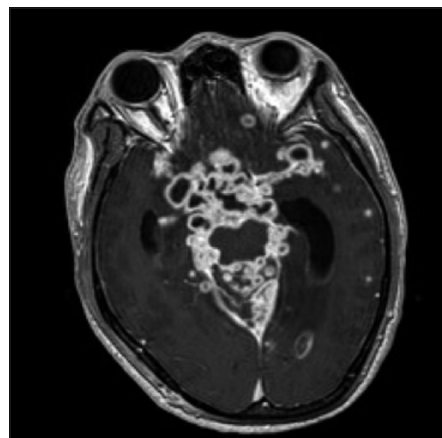
# Tuberculosis of the central nervous system

**A** 24-year-old Nepalese man presented with intermittent confusion, fever and weight loss over a 2-month period. Lumbar puncture was performed demonstrating acid-fast bacilli, consistent with *Mycobacterium tuberculosis* meningitis. He was commenced on quadruple therapy but became increasingly drowsy and developed hydrocephalus requiring ventriculostomy. Despite CSF diversion his consciousness level continued to worsen and arm and leg weakness developed.

Magnetic resonance imaging of the entire neuro-axis was therefore performed. The T1-weighted magnetic resonance

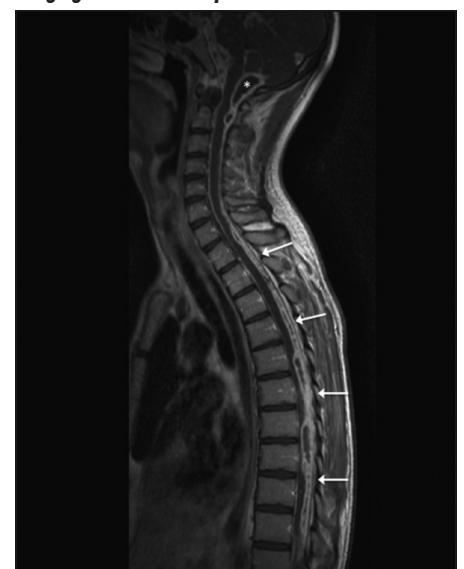
images with gadolinium demonstrated multiple enhancing tuberculous abscesses in the brain (*Figure 1*) and along the length of the spinal cord (arrows, *Figure 2*). The abscess at the craniocervical junction (star, *Figure 2*) was causing brainstem compression and was subsequently surgically decompressed.

**Figure 1. Axial T1-weighted magnetic resonance imaging of the brain with contrast.**



While his ventriculostomy was successfully converted to a ventriculo-peritoneal shunt his neurological status did not improve. **BJHM**

**Figure 2. Sagittal T1-weighted magnetic resonance imaging of the whole spine with contrast.**



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