CASE REPORT

Brainstem tuberculosis

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SUMMARY

We present a case of a 38-year-old man who presented with 1-week history of developing weakness of peripheral and cranial nerves. His MRI scan of the brain showed a large cavitating lesion at the brainstem and two further lesions of the right cerebral cortex and his CT chest showed features of old tuberculosis (TB). The identification of acid-fast bacilli was confirmed by analysis of bronchoalveolar lavage taken during bronchoscopy. He was started on anti-TB medications and repeat MRI 3 months later confirmed shrinkage of the cavitating lesion.

CASE PRESENTATION

A 38-year-old Chinese man, with no previous medical problems, presented with a 1-week history of developing weakness in cranial and peripheral nerves. It started initially with right leg and arm weakness that progressively worsened. Three days later he developed a right-sided facial weakness and on the day of admission he noticed he was having double vision.

On examination his vital signs were normal. Cranial nerve examination revealed a left-sided abducens nerve palsy and right-sided facial nerve palsy. Peripheral neurological examination showed power 4/5 in the right, normal tone, brisk reflexes on the right side and mildly impaired right heel-shin test. Plantar response was downgoing bilateral.

INVESTIGATIONS

His haematological investigations were all within normal limits and tests for vasculitis, HIV, syphilis and hepatitis were also negative. Cerebrospinal fluid (CSF) examination was also unremarkable.

His MRI brain showed a large cavitating lesion with ring enhancement in the medulla and two further areas of abnormal signal in the right frontal and parietal white matter (figure 1). A CT chest showed features suggestive of old tuberculosis (TB) with bilateral upper lobe scarring. Bronchoalveolar lavage analysis confirmed the presence of acid-fast bacilli and the diagnosis of brainstem tuberculoma was confirmed.

TREATMENT

He was started on anti-TB medications.

OUTCOME AND FOLLOW-UP

Repeat MRI 3 months later showed shrinkage of the brainstem lesion (figure 2) and he reported improvement of his symptoms.

Figure 1 Initial MRI showing a large cavitating lesion of the brainstem.

DISCUSSION

Brain stem TB is rare in the developed countries. Diagnosis is challenging, as 55%¹ of patients have no evidence of systemic TB. This is further complicated by the location of the lesion, which makes it unamenable to biopsy. It is therefore diagnosed based on the positive response to treatment and the characteristic imaging features on MRI T1 imaging² that shows an enhancing ring surrounding a hypointense lesion representing the caseation of the granulomatous inflammation.

Successful management is with anti-TB medications. However, there are cases where an operative intervention is required due to failure to medical

Figure 2 Repeat MRI 3 months after treatment showing slight decrease in the size of the lesion.

To cite: Demetriou GA. *BMJ Case Rep* Published online: [please include Day Month Year] doi:10.1136/bcr-2013-010359

treatment alone. The incidence of this is not known as we could not find a large study on this subject but this is only believed to be in a minority of cases. Surgical excision is also recommended as a first-line management when the tuberculoma is superficial and easily accessible.³

Our patient's clinical picture of widespread neurological symptoms disseminated in time and space pointed initially towards multiple sclerosis. This was later ruled out by the MRI results. Central nervous system TB presenting with progressive weakness within different anatomical distribution and in different timing has not been reported in literature in the past. We came across cases of isolated brainstem or isolated cerebral TB. This is the first report of a synchronous brainstem tuberculoma with two right cerebral lesions. The normal CSF examination and the absence of meningism or recent history of headaches suggest that the mode of infection was the haematogenous spread.

Learning points

- ▶ Brainstem tuberculoma is rare in the developed world.
- ▶ Diagnosis is based on the imaging features on the MRI.
- ▶ Antituberculosis treatment should be started before waiting to isolate the bacteria due to the risk of permanent neurological damage if treatment is delayed.

Competing interests None.

Patient consent Obtained.

Provenance and peer review Not commissioned; externally peer reviewed.

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