Unusual computed tomographic features of intracranial tuberculoma: a case report

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Abstract

A case report of a 57-year old woman who presented with signs and symptoms of intracranial mass. Computed tomographic (CT) and clinical features were unusual and suggestive of a parasaggital Meningioma. However an accurate diagnosis of a tuberculoma was made at surgery and histopathological examination.

Key words: Intracranial tuberculoma, computed tomography, meningioma

Introduction

Intracranial tuberculoma has been extensively reviewed in literature. [1,2] Before the advent of computed tomography (CT) Odeku and Adeloye [2] in 1969 reported an incidence of 12.5% among the brain masses studied in Nigeria.

Case report

A 57-year-old right-handed woman presented in August 1998 with vertex headache, paraesthesia, intermittent pain and numbness of the left foot and ankle, of 5-months duration. She also had a 3-months history of progressive weakness of the left lower limb. On examination, there was a left hemiparesis, left supranuclear facioparesis and bilateral papilloedema.

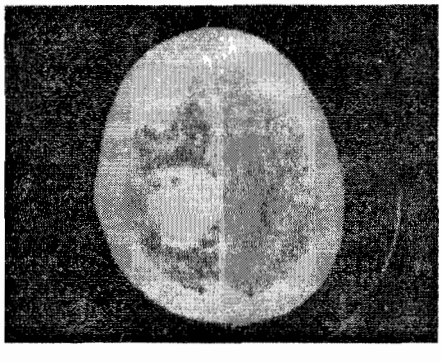
Investigations revealed normal electrolytes and urea levels, full blood count and electrocardiogram (ECG). Electroencephalogram (EEG) showed delta and beta waves in the right frontoparietal zones. Serum was negative for HIV. An intracranial meningioma was considered. Physiotherapy, Dexamethazone and antacids were commenced.

A brain CT scan was done which revealed a fairly roundish mass of mixed density in the parietal lobe and extending upwards to the vertex; CT value was 48 Hounsfield units. A hypodense area, the so-called halo was seen surrounding this mass. It measured 2.4 by 4.8 cm and was found adjacent to the falx cerebri (figure 1). Associated compression of the ipsilateral ventricle indicated a local mass effect.

However there was no shift of the midline to the opposite side. A homogeneous pattern of contrast enhancement was noted but no bony abnormality or destruction seen. In view of the patient's age, location of the mass and the pattern of contrast enhancement, a radiological impression of falcine meningioma with surrounding oedema was made. The differentials however were, a solitary metastatic brain tumour or a tuberculoma. At surgery, a pale yellowish, right parietal mass with pockets of pus was found and it was completely excised. Histopathology of the excised tissue mass revealed multiple small necrotizing granulomas with surrounding lymphocyte accumulation, epithelial cells and Langhans giant cells. There was no clinical evidence of meningitis. The appearances were consistent with that of a tuberculoma.

The patient commenced anti-tuberculous therapy on the 13th post-operative day. She had uneventful recovery and was discharged home on drugs and physiotherapy one month after surgery. She made sustained improvement; she had no seizures and is now completely independent with normal cognitive function and gait as at follow-up on 24/5/99.

Figure 1 A contrast enhanced axial image showing a right parasaggital mass lesion with surrounding oedema



Discussion

Clinically, tuberculomas resemble other intracranial tumours without any distinguishing pathognomonic features. In a review of intracranial tuberculomas, [3] patients were categorized into two groups: those having signs of increased intracranial pressure (ICP) with or without localizing neurological signs and those with progressive neurological disability in the absence of elevated ICP. The patients in the latter group usually display features of tuberculosis extracranially. Our patient showed no feature of extracranial tuberculosis.

The clinical signs and symptoms of intracranial tuberculoma are related to the site of the lesion. In this patient the CT images outlined a solitary mass sited in the parasaggital area, a typical presentation of falcine meningioma. Though solitary tuberculomas are common, reports show that multiple intracranial foci occur in 16-36%. [4] In both categories of patients clinical and radiological evidence of tuberculous meningitis enhance accurate diagnosis. However, there was no clinical evidence of meningitis in our patient. The brilliant pattern of contrast enhancement in the CT images though sways diagnosis in favour of a meningioma. [5] This similarity in enhancement pattern by the mass lesion is said to be due to abundant granulation tissue in tuberculoma. One report [6] shows that 50% of patients with intracranial tuberculoma may have normal chest radiograph.. The CT slices showed no calcification within the mass lesion; the absence of which warns against their absolute dependence even in CT images. [5]

In view of the above unusual clinical and radiological findings, a misdiagnosis of a parasagital meningioma was made. Despite the above pitfalls, in the interpretation of the CT images, it has become the technique of choice in neuroimaging. It is not only quick

but also noninvasive and provides adequate contrast resolution suitable for diagnosis of intracranial masses. [5]

This is an unusual presentation of intracranial tuberculoma with atypical computed tomographic findings of tuberculoma hence the misdiagnosis. However, the endemicity of tuberculosis in this environment as well as the current trend of HIV infection necessitates a high index of suspicion in patients with intracranial masses.

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