

Case Report

Bilateral subdural collections invisible on a CT brain scan

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Accepted 28 February 1995

We describe a patient who presented with headaches and vomiting. A computerised tomogram (CT) of brain failed to demonstrate bilateral subdural collections subsequently shown on magnetic resonance imaging (MRI). This case illustrates that an essentially normal CT scan does not always exclude significant intracranial pathology.

CASE REPORT

A 44 year old female presented with a four month history of headaches and vomiting. No abnormality was detected on neurological examination and routine investigations were normal. A CT scan of brain was performed before and after intravenous contrast. No focal abnormality was demonstrated but there was poor visualisation of the third ventricle and basal cisterns (fig 1). In particular the left ambient cistern was completely obscured a sign suggestive of supratentorial pathology. In view of these findings the possibility of a low grade infiltrating lesion such as a glioma within the basal ganglia was considered, and the patient was referred for magnetic resonance imaging. Axial T2-weighted MRI scans demonstrated the presence of significant chronic bilateral subdural collections which were invisible on the axial CT scan (fig 2a & b). Sagittal T1-weighted images showed tonsillar herniation below the level of the foramen

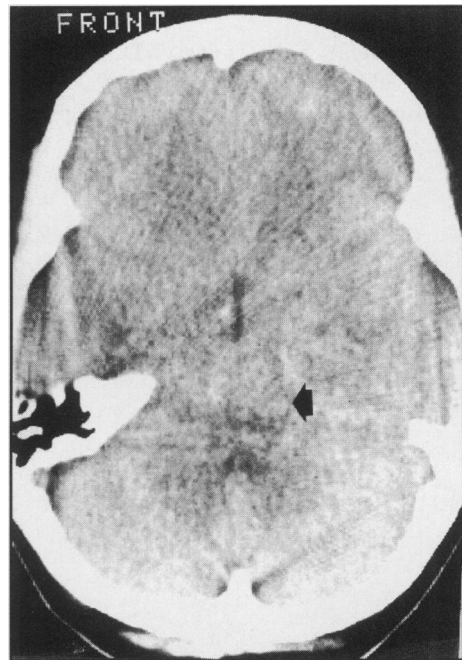


Fig. 1 Axial CT scan showing compression of the third ventricle and obliteration of the left ambient cistern. Arrowhead shows position of right ambient cistern which is also compressed.

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magnum without evidence of compression of the brainstem or fourth ventricle. The patient was transferred to the neurosurgical unit where bilateral burr-hole evacuation of about 30 ml of straw coloured fluid was performed with immediate relief of symptoms. The headache recurred after several days and a foramen magnum decompression was then carried out with good result.

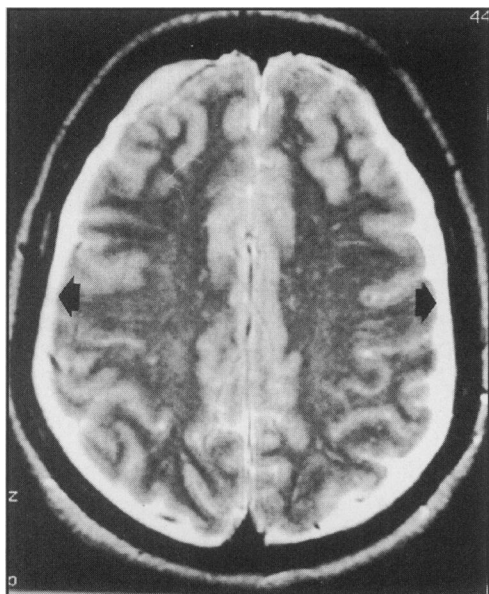


Fig. 2(a) T2-weighted axial MR scan showing bilateral hyperintensity in the subdural spaces suggesting subdural collections (arrowheads).

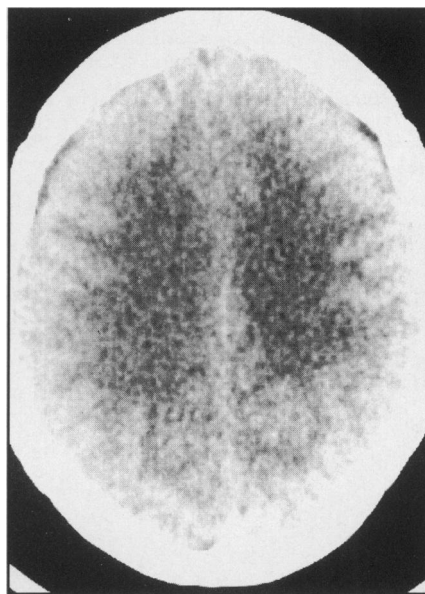


Fig. 2(b) Axial CT scan (level equivalent to Figure 2(a)) showing no visible abnormality.

DISCUSSION

A subdural fluid collection invisible on CT scan has been described previously.¹ Orrison et al² recently reported in a series of 107 patients the increased sensitivity of magnetic resonance in comparison to CT in the detection of subdural haematomas, extradural haematomas and contusions. In a series of 21 boxers reported by Jordan and Zimmerman,³ on which both CT and MRI scans were performed, one subdural haematoma detected on magnetic resonance imaging, was not visualised on CT.

The appearance on the T2-weighted MRI scan of a hyperintense signal in the subdural space is consistent with a chronic fluid collection. Similar appearances can be seen with an acute haematoma in the presence of severe anaemia or if there is significant mixture with cerebrospinal fluid.⁴ The long history in our patient suggested that a chronic collection was more likely.

This case is an example of significant intracranial pathology which was invisible on CT scan. If there is strong clinical suspicion but an inconclusive CT scan, it would appear prudent to proceed with MRI.

We thank Dr A L T Blair and Mr W J Gray who referred this case.

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