A case of presumed post-traumatic pneumocephalus

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DESCRIPTION
Intracranial fat deposits are uncommon benign lesions and are usually incidental findings when the brain is imaged for other reasons. Spontaneous or traumatic dermoid cyst rupture is the putative underlying cause in most cases.1

We describe a case of a 71-year-old woman, who presented 10 days after a fall at home, reporting occipital pain and acute-onset vertical diplopia. On examination, there was no external bruising, but a left trochlear nerve palsy was clinically elicited.

CT scan was reported as ‘no evidence of orbital/skull fracture or haemorrhage, but widespread hypodense foci in keeping with pneumocephalus’ (figure 1). Urgent neurosurgical and ophthalmological opinions were sought, and the patient was admitted for observation.

Subsequent MRI showed multiple high-signal foci on T1 and fluid-attenuated inversion recovery consistent with intracerebral fat deposits (figure 2A, B). Spinal MRI confirmed a large ruptured dermoid cyst at L5/S1 as the source of the subarachnoid fat. Careful re-examination of the CT images on lung window confirmed the lesions were not of air density (figure 3).

After orthoptic review, the patient was prescribed vertical prismatic lenses, which significantly improved her symptoms. Spontaneous resolution of the diplopia was noted on follow-up at 6 months.

Ruptured intracranial dermoid is a rare but documented cause of headache.2 However, traumatic dermoid rupture has only been documented in a handful of cases, and never before in association with an acute cranial nerve palsy without raised intracranial pressure.3 In this case, neuroimaging revealed no other underlying cause for the trochlear nerve palsy.

Figure 1 CT of the head showing hypodense foci suggestive of pneumocephalus.

Figure 2 MRI of the head: (A) axial and (B) coronal images showing multiple high-signal lesions in keeping with intracerebral fat in T1 and fluid-attenuated inversion recovery sequences.
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Contributors VK cared for the patient and prepared the first draft of the manuscript. ANT examined and selected the appropriate radiology images and provided input on editing the draft manuscript. JH assisted with image manipulation and reviewed the draft manuscript. LP was the consultant in charge of the patient’s care and proof read the final manuscript prior to submission.

Competing interests None declared.

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REFERENCES

Figure 3 CT of the head on lung window showing lesion densities not in keeping with air.

Learning points

▸ Intracerebral fat deposition is a benign condition, usually an incidental finding on brain imaging.

▸ Careful attention to signal intensity under the appropriate window settings will ensure that fat deposits are not confused with air on CT imaging.

▸ Acute-onset diplopia should always raise suspicion of a cranial nerve injury, even if no lesion can be identified on neuroimaging.