Clinical Reminder

Pneumocephalus in pneumococcal meningitis

An 84-year-old woman with new onset mutistic behaviour and a fever of 40°C was found to have marked neck stiffness without any focal abnormalities. There was no immunosuppressive status. The cranial CT showed intracranial air in the posterior fossa (Figure 1A). Cerebrospinal fluid revealed a granulocytic pleocytosis (1,057/µl) with considerably elevated protein (7,080 mg/l) and lactate (14.4 mmol/l). The microbiological tests confirmed gram-positive diplococcae. Intensive care management and antibiotic therapy (ceftriaxone and ampicillin) was implemented. Examination of the ears showed moderate right-sided mastoiditis. Conservative treatment was advised and the patient recovered within 3 weeks.

Pneumocephalus is a rare complication of pneumococcal meningitis which is still a serious infection with high mortality and morbidity [1–3]. This case reminds us that pneumococcal meningitis can occur even in the elderly and that intracranial air suggests a leak from the paranasal sinuses or the mastoid (Figure 1B). A conservative treatment regimen led to complete resolution of the air and a good clinical recovery.

Key points

- Pneumococcal meningitis can occur in the elderly.
- Pneumocephalus is a complication of pneumococcal meningitis.
- Mastoiditis can be the source.

Conflicts of interest

None declared.

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Figure 1. (A) Sagittal view of cranial computed tomography (CCT) showing intracranial air (black arrow) in the posterior fossa along the lower surface of the tentorium. (B) Bone window technique of axial CCT suggesting penetration of air via the right mastoid (white arrow) due to mastoiditis (see close relationship of small air bubbles near the mastoid).