An unusual case of aphasia

Rebecca Mortimer foundation year 2 doctor, emergency department, Emma Owens consultant radiologist, David C Howlett consultant radiologist

Eastbourne District General Hospital, East Sussex Healthcare Trust, Eastbourne, UK

A 93 year old man with a destructive scalp squamous cell carcinoma causing bony erosion into the calvarium was admitted with sudden onset aphasia. Neurological examination was otherwise unremarkable. A computed tomography (CT) scan was performed to investigate the cause of the aphasia (fig 1). What finding is present on the cranial CT?

**Answer**
The cranial CT shows extensive pneumocephalus (intracranial air).

**Discussion**
The patient had pneumocephalus due to a bony defect at the level of his scalp tumour. As shown in fig 1, the frontal lobes are compressed and the interhemispheric space between the two tips of the frontal lobes gives rise to the “Mount Fuji” sign, named after its resemblance to the silhouette of the Japanese volcano. A CT of the vertex on a bone window (fig 2) shows the scalp defect, with extensive full thickness bone destruction of the calvarium in the posterior left parietal region.

Pneumocephalus is the presence of intracranial air or gas and is most commonly associated with cranial trauma or surgery, where there has been disruption to the cranium. It can also occur secondary to bone erosion from infection or tumour and can lead to intracranial hypertension or neurological symptoms. CT is the diagnostic test of choice, with air most commonly
visualised anterior to the frontal lobes. CT is also most accurate for diagnosing bony abnormalities such as fractures or erosion. Management depends on the underlying cause and the patient condition. Conservative measures to allow resorption of air, including positioning the patient head-up (Fowler’s position), using supplemental oxygen, and avoiding coughing or sneezing can suffice in some cases. Alternatively, neurosurgical intervention with decompression might be required if the patient has clinical signs of deterioration or there is evidence of intracranial hypertension. In this case, given the patient’s multiple other comorbidities, he was managed palliatively and died two weeks later in a hospice.

**Learning points**

1. Aphasia can be caused by pneumocephalus. Other clinical features of intracranial air include headaches, nausea, vomiting, dizziness, and seizures.

2. It can be difficult to assess deeper extension of squamous cell carcinomas, particularly scalp lesions, because of the paucity of soft tissue. CT is the technique of choice for showing underlying bone erosion, which can also affect local surgical planning.

We have read and understood BMJ policy on declaration of interests and declare we have no competing interests

Patient consent obtained.

Provenance and peer review: not commissioned, externally peer reviewed.

