Basal skull fracture with intracranial air

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A 49 year old man was brought to the accident and emergency department with a Glasgow coma score of 10 and bleeding from his right ear. A convergent squint was evident from inturning of the right eye. His head had been inadvertently crushed between a metal trolley and a wall. There were no other injuries. After resuscitation according to Advanced Trauma Life Support guidelines, radiography of his cervical spine demonstrated free air around the spinal cord (fig 1). The basal skull fracture with intracranial air was duly confirmed a short time later with bone windows on computed tomography (fig 2). The patient made a slow but uneventful recovery after a period of observation with antibiotic prophylaxis. He retains a minor squint.

This case highlights the value of a standardised approach to the management of major trauma and the need to be vigilant for the unusual when looking at an X-ray film. Intracranial air after head injury has been the subject of medical reports since 1884 and was initially thought to be rare, but Briggs drew attention to the problem, highlighting an incidence of 0.2% in all head injuries. Orebaugh and Margolis later placed the incidence as between 0.5% and 1%. The majority of these cases involved injuries to the face and gave rise to cerebrospinal fluid (CSF) rhinorrhoea.


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Figure 1 Radiograph of the cervical spine; the arrows indicate the air as a dark streak.

Figure 2 Computed tomography of the head showing the fracture (thin arrow) and free air (thick arrow).
Posterior dislocation of sternoclavicular joint in a child

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A 12 year old boy presented to the accident and emergency department after a fall off his bike. He was complaining of severe pain over the right collarbone and inability to move the right shoulder.

He was given oral dihydrocodeine and was sent for a radiograph of the right shoulder. On examination he was still in pain and the vital signs were normal. There was no swelling, deformity, or tenderness over the right shoulder or the lateral part of the right clavicle but there was swelling and severe tenderness over the right sternoclavicular joint and movements at the shoulder were restricted and painful. Distal pulsations and neurological functions were normal.

A radiograph of the right sternoclavicular joint showed no fracture. However, computed tomography was requested that showed the posterior dislocation of the sternoclavicular joint (see fig 1).

The child was admitted to hospital and a closed reduction was achieved under general anaesthesia with no complications.

Computed tomography is now the modality of choice for accurate description of the size and extent of intracranial air, although standard x ray imaging will demonstrate most significant aerocoeles. This unusual case provided an opportunity for the diagnosis to be made in the resuscitation room.


Reference: