splenic hilum sealed it, and functioned as a one way valve. The spleen was herniated in the thorax, completely disrupted, and bled profoundly. The diaphragmatic tear was extended and the spleen resected through the diaphragm. The patient recovered well, and was discharged on the 16th postoperative day.

When haemodynamic instability persists after aggressive fluid replacement, surgery should not be deferred. In patients with thoraco-abdominal trauma, it is often difficult to decide which side of the diaphragm should be considered first. In these cases focused abdominal ultrasound in trauma (FAST) can be a useful examination, as it can be performed at the bedside during initial resuscitation. Large

amounts of blood both in the abdomen and thorax can be diagnosed with high accuracy.¹ Diaphragmatic injury remains a difficult diagnosis in the multiply injured patient,^{2,3} and this case shows that it can profoundly change the clinical presentation of a common injury, such as splenic trauma. Whenever haemodynamic instability is present, consideration of potential diaphragmatic injuries should not defer prompt and adequate treatment.

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Basal skull fracture with intracranial air

R S Moore

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 any x ray film. Intracranial air after head injury has been the subject of medical reports since 1884¹ and was initially thought to be rare, but Briggs drew attention to the problem, highlighting an incidence of 0.2% in all head injuries.² Orebaugh and Margolis later placed the incidence as between 0.5% and 1%.³ The majority of these cases involved injuries to the face and gave rise to cerebrospinal fluid (CSF) rhinorrhoea. The

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 arrows) and free air (thick arrow).

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mechanism is thought to be due to deformation of the skull with fracture and immediate expulsion of CSF, closely followed by recoil and suction of air into the cranium. The presence of free air itself rarely causes significant morbidity, although the concept of "tension pneumocephalus" is well documented and can result in herniation syndromes if not recognised and decompressed. Other findings include headache, paresis, CSF rhinorrhoea or otorrhoea, seizures, frontal lobe dysfunction, and the patient's awareness of a succussion splash.³

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.

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Posterior dislocation of sternoclavicular joint in a child

S R Abdulla, S G Gandham

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.

Posterior dislocation of the sternoclavicular joint is a rare injury and especially so in children.¹ Its importance lies in the fact that it is difficult to pick up on plain radiographs and although certain oblique views of the sternoclavicular joint may give a good diagnostic yield,² computed tomography is the best way of attaining a definite diagnosis.¹ However the key to the diagnosis is a strong clinical suspicion that should arise from the nature of the injury, the localisation of signs and symptoms, and especially the absence of fracture on the plain radiograph.

Early diagnosis is the key to successful management because the aim is to achieve a closed reduction, which is much safer than open reduction, and involves applying lateral traction to abducted arm under a general anaesthetic.³ An alternative method is to grasp the medial end of the clavicle with a sterile towel clips and apply a forward traction. The reduction is maintained by a figure of eight bandage, which should be kept for at least four to six weeks.³

An important aspect in the management is that once diagnosed the patient should be treated as a major resuscitation candidate because of the serious and sometimes potentially life threatening complications that may ensue before and especially after reduction.³ Possible complications are trauma to the trachea; pneumothorax; laceration or compression of the superior vena cava, the subclavian artery, and the carotid artery; injury to the brachial plexus; and oesophageal trauma.

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Figure 1 Computed tomogram showing dislocation.