the accident and emergency department when these patients are seen with seemingly innocuous head injuries.

EMERGENCY CASEBOOK

Development of tension pneumothorax after chest drain insertion

A 50 year old man presented by ambulance to the accident and emergency department following a road traffic accident. He had been driving a car which collided with a tree. The impact had been on the driver's side of the car. He had been wearing a seat belt and was not entrapped. There was no head injury or any loss of consciousness. On arrival he was confused and complaining of severe right sided chest pain.

Management was according to ATLS principles and revealed a right sided flail chest associated with multiple rib fractures, pulmonary contusion, and marked hypoxia (PO_2 5.7 kPa and SpO_2 78% on 15 l of oxygen by trauma mask). In view of these findings the patient underwent a rapid sequence induction of anaesthesia, endotracheal intubation, ventilation, and insertion of a 32G intercostal drain on the right side. This improved his SpO_2 to 96%. The drain discharged 200 ml of blood and was noted to be swinging with respiration. A check chest x ray confirmed satisfactory placement of the drain, but also a widened mediastinum which had not been apparent on the initial chest x ray. His condition was stable so thoracic computed tomography was arranged to exclude aortic arch injury. While this was being done his clinical condition suddenly deteriorated. He became hypotensive (BP 70/40) and tachycardic (HR 130/min) with no improvement after a rapid infusion of colloid. On examination of the scan (fig 1) it became apparent that he had developed a right sided tension pneumothorax. Following decompression and insertion of a second intercostal drain his clinical indices returned to normal.

This patient developed a life threatening tension pneumothorax despite the insertion of a large intercostal drain. It is postulated that the drain either kinked during transfer or became occluded with blood clot. The presence of the drain led to a delay in diagnosis as it was assumed that this particular potential complication had already been dealt with. As ATLS and common sense suggests, whenever a trauma patient deteriorates the primary survey must be repeated. An assumption that any tube previously inserted has become blocked or displaced will prevent serious complications being overlooked.

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