

Case 35

Another severe head injury

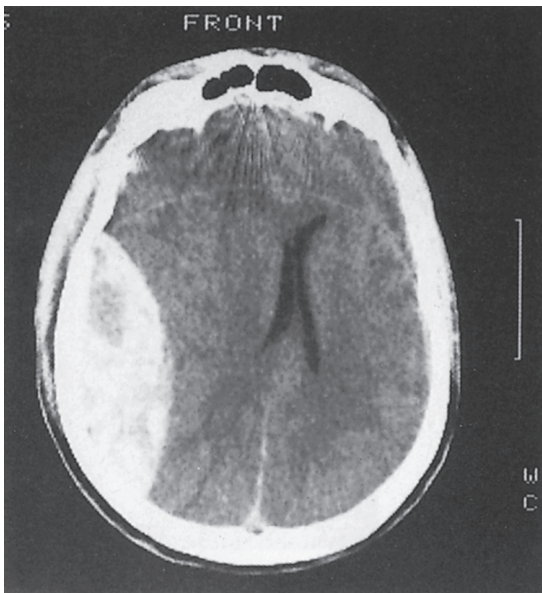


Figure 35.1

Figure 35.1 is one slice of a CT scan of the head of an amateur cricketer aged 19 years who was hit on the right side of the head by a cricket ball as he opened the batting against a fast bowler without a helmet. He immediately fell to the ground and could not be roused. However, within a few minutes, after he had been carried into the pavilion, he was beginning to wake up and was fully conscious a quarter of an hour after the accident.

He was taken by car to the district general hospital and, while in the Emergency Department, he started to become drowsy and within a couple of hours was in coma. He was intubated and an urgent CT scan performed.

What can you see on his CT scan?

There is a localized fluid collection in the right temporal region with displacement of the lateral ventricles to the

left.

What is the period of regained consciousness called?

The 'lucid period'. Although very typical of an extradural bleed, it is by no means invariable in this condition. If the initial injury is sufficiently severe, the initial coma due to the cerebral concussion can merge imperceptibly into the coma produced by the cerebral compression due to the expanding haematoma.

What physical signs would you expect the patient to have shown when he relapsed into coma?

- A rising blood pressure, slowing of the pulse (Cushing's reflex* response to raised intracranial pressure) and possibly a hemiparesis or hemiplegia on the contralateral side.
- Dilatation of the pupil on the side of the compression due to pressure of the haematoma against the third (oculomotor) cranial nerve against the edge of the tentorium cerebelli. The oculomotor nerve transmits parasympathetic pupilloconstrictor fibres to the ciliary muscles of the eye; if these are knocked out, that leaves intact the pupillodilator sympathetic fibres. If compression continues, and this golden period for surgery missed, both pupils become fixed and dilated and prognosis for recovery drops sharply.

Should a lumbar puncture be performed at this stage?

No, you would almost certainly kill the patient. The intracranial pressure is high. If cerebrospinal fluid is drawn off

*Harvey Cushing (1869–1939), Professor of surgery, Harvard Medical School, Boston.

Part 2: Cases

at lumbar puncture, the raised pressure within the skull will force the cerebellar tonsils through the foramen magnum, which will compress the medulla, with its vital cardiac and respiratory centres, and there is prompt cardiac arrest!

What urgent treatment is needed here to save the patient's life?

- Maintain the airway by means of endotracheal intubation.
- Transfer at once to theatre for a right-sided craniotomy, evacuation of the extradural haematoma (Fig. 35.2) and to control the source of the bleed. This is frequently due to a tear of the middle meningeal artery and/or vein, but may be from a tear of the sagittal sinus or of a diploic vein in the skull bone marrow.

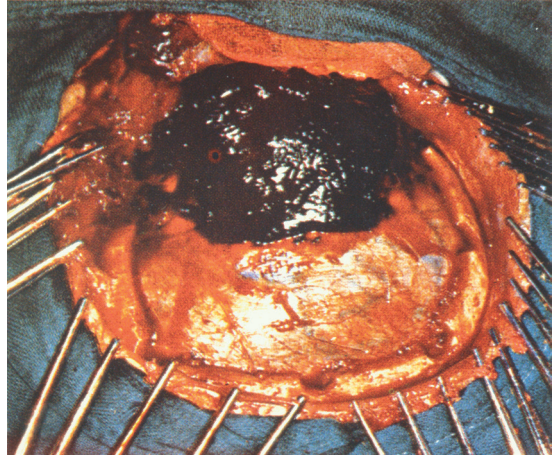


Figure 35.2 Extradural haematoma evacuation.