CASE REPORT

Frontal aerocoele as a complication of head injury

R. MORTON

Department of Accident and Emergency Medicine, The General Infirmary at Leeds, Leeds, England

INTRODUCTION

The patient with a head injury is one of the commonest problems presenting to an accident and emergency department. The casualty officer must be able to recognize those patients who might develop a complication of their injury. Skull X-rays are performed on most patients as the presence of a fracture increases the likelihood of an intra-cranial haematoma (Mendelow *et al.*, 1983). The X-rays may also show other features which, potentially, may have serious consequences. The case presented describes a more unusual complication of a head injury.

CASE REPORT

A previously healthy 74-year-old lady was seen in the Accident and Emergency Department, General Infirmary, Leeds, England, with a history of having tripped on the pavement and falling, hitting her head on the kerb. She was unconscious for 2-3 min, according to a witness, and was amnesic for the period between falling and finding herself inside an ambulance. She had vomited once and she complained of a frontal headache, but was otherwise well. On examination she had a 2 cm laceration with a haematoma above the right eyebrow. She was fully alert and orientated, eye movements were full with no nystagmus, and the pupils were equal and reacting. She had no rhinorrhoea and the rest of the neurological examination showed no abnormality. Her pulse rate was 98 and regular, with a blood pressure of 150/70. There was no reason to suspect that she had any pre-existing medical condition which could have caused her to fall.

An X-ray of her skull was performed (Fig. 1) and, on the lateral brow-up film, a large frontal intra-cranial collection of air could be seen, but no skull fracture.

Fig. 1—Lateral view of skull showing a large frontal intra-cranial collection of air.

She was admitted to the observation ward and given prophylactic penicillin and sulphadimidine. For 24 h she was nauseated with a headache and was slightly unsteady on her feet. However, these symptoms settled completely by the second day. A second X-ray was taken which, unfortunately, showed a significant increase in the amount of intra-cranial air (Fig. 2). She then had a C.T. Scan which confirmed the presence of subdural air in both frontal regions (Figs 3 & 4) but still no fracture could be identified.

Fig. 2—Lateral view of the skull showing a significant increase in the amount of intra-cranial air.

Fig. 3—C.T. Scan confirming the presence of subdural air.

Fig. 4—Further C.T. Scan (no fracture identified).

As she was clinically well, no further action was taken. A repeat plain X-ray 7 days later showed a diminution in the volume of air present within the cranium. During this time she had continued to receive prophylactic antibiotics, but, as she had remained asymptomatic, she was discharged home and the antibiotics were continued for a further week.

DISCUSSION

The presence of air within the skull indicates that there must be a fistula communicating with the exterior (North, 1971). This may occur without a cerebro spinal fluid leak or without definite evidence of a skull fracture.

The patient may complain of headache or drowsiness, or there may be increasing

dementia, however, there may be no clinical symptoms or signs (Robinson, 1970).

The air may not be apparent until 48 h after the injury. Therefore, if a patient presents at this time with persistent symptoms a lateral brow-up, skull X-Ray may indicate the cause.

The importance of the aerocoele is that there is a risk of meningitis. This can occur at any length of time after the injury and is usually due to organisms penetrating the defect in the dual barrier. The commonest organism is the pneumococcus. Prophylactic antibiotics are indicated and these may also aid healing of the dural tear (Leech, 1974). If the tear is not healed and is not operatively repaired, then the risk of meningitis persists.

REFERENCES

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