SHORT REPORTS

Subcutaneous pneumatocele after facial trauma

Two patients recently presented complaining of periorbital swelling on blowing their nose after minor facial trauma. This curious complication of fracture of the frontal or ethmoid sinus has apparently not been reported.

Case reports

(1) A 32-year-old healthy labourer presented with swelling around his left eye. Two hours before he had been sitting by his car adjusting the brake when the point of the screwdriver slipped and struck him above the left eyebrow. It did not appear to penetrate deeply and he easily controlled the bleeding, bandaged the wound, and expected no further difficulty. An hour later he tried to blow his nose but stopped when he realised that the periorbital tissues were swelling. He blew again a few minutes later, with his wife watching. The eye closed almost completely. The contents of the handkerchief were not examined. When seen in the casualty department he was afebrile and not acutely distressed. A slightly tender, 4-mm, X-shaped wound was visible above his left eyebrow. The left eyelid was discoloured and swollen almost shut (figure). The mass was soft, not tender, and did not

Periorbital subcutaneous pneumatocele after facial trauma.

crepitate. Further physical examination and past medical history added nothing. In particular, he had no history of recent rhinorrhoea or sinusitis. Radiographs showed a small fracture of the roof of the left orbit and a small flake of bone detached at one end was impinging on the cavity of a fairly extensive frontal sinus.

The patient was given co-trimoxazole 480 mg twice daily by mouth and admitted for observation. Against instructions, he blew his nose the next morning and was rewarded by even more swelling around the eye. He remained afebrile without headache or meningismus. The periorbital swelling subsided over four days without signs of inflammation developing. On the seventh day the antibiotic was discontinued and he was discharged. Four weeks later he was well and radiographs of the frontal sinus showed no other abnormality.

(2) A 12-year-old boy was brought to the casualty department half an hour after falling 6 feet (2 metres) from a tree, landing on his right hand and forehead on a level surface of turf. When shortly after he blew his nose his right eyelid swelled shut. There was no history of rhinorrhoea or sinusitis. The only apparent injury was an area (1 x 2 cm) of bruising above the right orbit similar to that seen in case 1. In this case, however, palpation disclosed surgical emphysema. Radiographs of the skull and facial bones failed to show the presumed fracture. He was admitted to hospital, treated with erythromycin 500 mg six-hourly, and advised not to blow his nose. He remained afebrile and the periorbital swelling disappeared by 48 hours. One week later he was allowed tentatively to blow his nose. There was no ill result. When seen four weeks after his injury he was well.

Comment

In 1974 Jarvis reported an atraumatic subcutaneous pneumatocele in the region of the orbits occurring in conjunction with an ethmoid mucocoele and dilated sphenoidal sinuses.¹ Pneumatocele may also result from air escaping from the middle ear or mastoid air cells after trauma or surgery.² Although no serious consequences arose in our cases the management of penetrating and non-penetrating injuries in the vicinity of the paranasal sinuses should be cautious,^{3 4} especially when the wall of the sinus is breached. Injuries may penetrate the dura, even the brain. Turner³ has recently reviewed 342 midface and upper facial fractures, none of which resulted in abnormal collections of air. In each case the collection was intracranial (pneumocephalus). Severe fractures of the anterior wall of the frontal sinus may require surgical elevation of depressed bone fragments. Fracture of the posterior wall may result in a potentially serious dural tear.⁴

The distinctive feature of our cases was the appearance of subcutaneous air on blowing the nose by a process analogous to a tension pneumothorax. Relatively minor trauma was sufficient to fracture the thin plate of bone between orbit and frontal or ethmoid sinuses. In each case there was no evidence of underlying sinus or nasal disease. Appropriate management of these cases appears to require active observation in hospital, awareness of the possibility of intracranial injury, and antibiotic treatment against upper respiratory tract pathogens.

HHE was supported by a scholarship from the International College of Surgeons.

¹ Jarvis JF. Pneumocoele of the frontal sinus. *J Laryngol Otol* 1974;**88**:785-93.

² Alonso WA, Gill AJ. Pneumocephalus following mastoid surgery—a case report. *Laryngoscope* 1969;**79**:2150-4.

³ Turner JS. Pneumocephalus with facial fractures. *Laryngoscope* 1968;**78**:713-27.

⁴ Birrell JF, ed. *Turner's diseases of the nose, throat, and ear*. Bristol: J Wright, 1977:84-5.

(Accepted 15 January 1980)

Guy's Hospital, St Thomas's Street, London SE1 9RT

T K DAY, MRCP, FRCS, lecturer in surgery

HERBERT H ENGELHARD III, BSc, elective student (present address: Duke University Medical Center, Durham, North Carolina, 27710 USA)

Convulsions associated with campylobacter enteritis

Campylobacter enteritis tends to occur in epidemics and is associated with fever, malaise, abdominal pain, and diarrhoea that is often bloody and profuse. These symptoms may last from a few days to a week. With improved techniques, campylobacter has become the commonest identifiable cause of diarrhoea.¹ We report here several cases in which convulsions were a presenting feature of campylobacter enteritis.

Patients, methods, and results

During a recent large epidemic,² which will be reported elsewhere, 14 children with campylobacter enteritis were admitted to the children's ward of our hospital. All the children had diarrhoea, seven with blood and mucus in their stools. Ten had abdominal pain and eight had vomiting. Eleven of these children had a temperature of over 38°C on admission. Nine were admitted after a generalised grand-mal convulsion, and one of them had another convulsion after admission. Seven of these children had had a febrile convulsion before. *Campylobacter jejuni*-coli was isolated from the stools of all 14 children. They received symptomatic treatment only, and all recovered within three or four days of admission. The mean age of the nine children presenting with convulsion was 5 years and 8 months (range: 3 years 3 months to 7 years 7 months), and five were aged over 5½ years. These five underwent electroencephalography, and the results were normal in four children and slightly abnormal in one.