Letters

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- postponement of surgery. On the third day following injury he developed marked lid oedema and chemosis, with a pus-like discharge. The wound was explored and multiple fragments of wood were found together with pus. After irrigation and repair of the lid laceration, treatment with metronidazole, erythromycin and chloramphenicol was commenced. After operation the eye was stable, but he developed pyrexia. On the sixth day following injury, he became aphasic with a right hemiparesis. Culture of pus from the wound showed a pure growth of *Clostridium perfringens*. He was then referred to Atkinson Morley's Hospital.

On admission, he was conscious, but aphasic and obeying only simple commands. His right eye had lid swelling and chemosis. There was a right hemiparesis: Grade IV of the arm, Grade 0 of the leg. Radiography revealed bony injury to the supero-medial aspect of the right orbit and the upper and lower walls of the right frontal sinus, which was opaque. There was a small gas locus in the right frontal pole. Computed tomography showed oedematous changes in the medial aspect of both frontal lobes, more extensive on the right, where a gas bubble was present in the frontal pole (fig). Treatment was started with intravenous penicillin, metronidazole and chloramphenicol. Later that day hyperbaric oxygen therapy was commenced; three treatments over three days at 250 KPa (2½ atm.) pressure for three hours was given.

Thereafter steady, uneventful improvement took place. Following review by an ENT surgeon the right fronto-ethmoidal sinus was explored. A fracture of the orbital roof was found, the frontal sinus containing

pus and herniating cerebral tissue. A fracture of the superomedial aspect of the orbit was displaced into the ethmoid from which were removed two pieces of foreign material, one measuring 1.2 cm × 4 mm. The pus was sterile and biopsy of the brain hernia demonstrated only necrosis. Eighteen days following his injury the dysphasia and hemiparesis had resolved considerably. He was discharged for convalescence on antibiotics. On review a month later, speech was normal, although there was a flatness of affect. The right eye was normal and there was no limb weakness. A CT scan showed resolution of the intracranial gas, but with some residual frontal lobe oedema. Full recovery subsequently occurred.

Although potentially fatal, intracranial infection with *Clostridium perfringens* can be successfully treated following prompt aspiration, where indicated, and antibiotic therapy.¹ The mortality rate from cerebral abscess due to clostridial infection has been assessed at 24%.²

In this case, only computed tomography made possible the diagnosis of "clostridial cerebritis" (with potential for abscess formation). Intensive therapy was clearly indicated and the patient's condition improved markedly during the use of hyperbaric oxygen in conjunction with antibiotics although Keogh³ has suggested that there is no place for the former. We would emphasise the importance of investigating the possibility of retained foreign material within penetrating wounds around the orbit, which may act as a source of infection.

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Clostridium perfringens brain infection following a penetration wound of the orbit.

Sir: We present the first reported case whereby the response of clostridial cerebritis to antibiotics and hyperbaric oxygen was monitored using computed tomography. The mechanism of infection illustrates the danger of concealed penetrating injury and its possible consequences.

A 47 year old company director presented at his local hospital having tripped and fallen into a rose bush. A branch had pierced the inner aspect of his right eye. He had lacerations of the bulbar conjunctiva and the lower lid. The globe was intact. Tetanus toxoid was administered and he was admitted for repair of his injuries. An epistaxis that night and haematemesis the next day caused

Fig Computed tomography of the brain showing a gas bubble in the right frontal pole and oedematous changes in the medial aspect of both frontal lobes.

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