Posterior penetrating injury of the orbit with retained foreign body

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SUMMARY A case of a retained orbital foreign body following a penetrating injury in a 2-year-old boy is described. Diagnosis and management of such cases is discussed.

A 2-year-old boy was referred to the Accident and Emergency Department with a history of having fallen on to the top of a ballpoint pen, cutting his right upper eyelid. The wound had continued to bleed and he had developed a haematoma of the lid. He had become drowsy and vomited on three occasions over a period of two hours.

Examination confirmed that he was drowsy but could be roused. He had a haematoma of his upper eyelid with a 0.7 cm laceration along its medial aspect. His pupils were equal and reactive, ocular movements were full, there was no penetrating injury of the anterior segment of the eye, and no bruits were audible over it. There were no focal neurological signs.

X-ray of the right orbit revealed a foreign body in the posterior part (Figs. 1 and 2). X-ray views of the

Fig. 1 Radiograph showing foreign body in posterior orbit.

Fig. 2 Radiograph showing foreign body in posterior orbit.

tip of a 'Bic' pen showed this to be identical to the foreign body. A CT scan (Fig. 3) located the foreign body posterior in the orbit lying on the medial wall outside the muscle cone. No intracranial or ocular injury was seen. The child remained neurologically stable.

Exploration of the right orbit was carried out by subperiosteal approach along the medial wall by an ear, nose, and throat surgeon. The foreign body was located posteriorly in relation to a tear in the

Fig. 3 CT scan showing foreign body lying on medial orbital wall.

periosteum and was removed (Fig. 4). Full examination of the globe did not reveal any injury. Oral flucloxacillin was given postoperatively.

The wound settled and the flucloxacillin was stopped. A month after operation a persistent discharge developed from the entry wound which did not respond to oral antibiotics. Swabs of the discharge grew non-haemolytic streptococci. A further exploration of the orbit was undertaken. The pen track was probed, a small amount of pus was found, but there was no evidence of osteitis or further foreign material. The discharge stopped after a further two months on oral Augmentin (potassium clavulanate plus amoxycillin).

Discussion

The case demonstrates the importance of radiography in suspect injuries in children.¹ Once a foreign

Fig. 4 Pen tip removed from posterior orbit.

body is detected, CT scanning is an excellent way of obtaining its precise location.² There was no history of a retained fragment from the pen, but the eyelid haematoma and continued bleeding of the wound were suggestive of something more significant.

Cases of deep penetrating foreign bodies entering through the upper inner angle and lying posteriorly in the orbit without injuring the globe have been reported.³ No cases of the broken off tip of a ballpoint pen have been reported, though a self-inflicted injury caused by driving a ballpoint pen through the wall of the orbit into the intracranial cavity has been noted.⁴ Cases of trivial eyelid wounds with intracranial damage have been documented.⁵

Neurological observation to detect a deteriorating conscious level and focal signs is essential in cases where trauma is related to the apex of the orbit, since the injury may involve also the paranasal sinuses and intracranial space.

Inorganic foreign bodies may remain within the orbit for many years without causing signs or symptoms.^{3,6} Because of the risk of infection and inflammation in such a vital area it was considered necessary to remove this foreign body. Removal should be undertaken only after carefully locating the foreign body.

A transconjunctival approach is recommended only for anterior orbital foreign bodies. For more posterior foreign bodies adequate access and exposure is possible only by a subperiosteal approach.^{7,8}

References

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