Clinical picture

Unilateral pupil dilation following head injury: thinking outside the (brain) box

A 39-year-old male presented to the Accident and Emergency Department following an alleged assault. CCTV operators had witnessed the attack and while lying on the ground the patient had been repeatedly kicked in the head.

On arrival, his Glasgow Coma Scale was 7 (E1, V1, M5). Signs of significant head trauma were apparent, with bilateral periorbital ecchymosis and blood visible in the right external auditory meatus. He had anisocoria of 3 mm, with the left pupil measuring 3 mm in diameter and reactive to light, while the right pupil remained fixed at 6 mm.

A CT scan demonstrated no focal intracranial lesion or bleed; however, retrobulbar haemorrhage encircling the root of the right optic nerve was evident (Figure 1). As this is a potentially sight-threatening condition, he was promptly reviewed by the ophthalmology team who felt that operative intervention was not required. Following 24 h in the intensive therapy unit, the patient was extubated and discharged home 3 days later.

When considering anisocoria in a patient with a head injury and reduced conscious level, it is important to exclude raised intracranial pressure with resultant uncal herniation; however, alternative diagnoses should also be considered.

Photographs and text from: D. Miller and J. Thomson, Emergency Department, Aberdeen Royal Infirmary, Aberdeen, UK; G. Williams, Ophthalmology Department, Aberdeen Royal Infirmary, Aberdeen, UK; S. Olson, Department of Radiology, Aberdeen Royal Infirmary, Aberdeen, UK.

email: d.miller@nhs.net.

Figure 1. Retrobulbar haemorrhage encircling the root of the right optic nerve (arrowed).