

Orbital foreign body causing temporary diplopia: case report

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Abstract

Aim: To report an interesting case of diplopia, caused by an initially undiagnosed intra-orbital foreign body, which resolved following its removal.

Method: The case is presented of a 16-year-old boy who injured his right eye by riding a quad bike into a hedge. Ophthalmic and orthoptic findings with Hess charts are documented, with a photograph of the orbital foreign body. Investigation and management are described.

Results: The boy presented to the accident and emergency department reporting a twig had poked his right eye following the accident. Chloramphenicol was prescribed and the boy was discharged. Four days later the boy presented with orbital swelling with vertical and torsional diplopia. Examination revealed restriction of ocular movement and a radiograph revealed no orbital or foreign body. The orbital swelling and restriction of ocular movement increased and 18 days after the injury a 12 mm long thorn was removed from the upper nasal conjunctiva. Full recovery of ocular movement and swelling occurred in the weeks following removal of the foreign body.

Conclusion: Careful investigation and follow-up of such cases is needed as intra-orbital foreign bodies are difficult to detect and a high level of suspicion is needed.

Key words: Diplopia, Intra-orbital foreign body

Introduction

Orbital foreign bodies have a variable presentation. The initial injury may not indicate an obvious foreign body and the diagnosis may be delayed for a considerable time. In the case presented there was fortunately good recovery.

Case report

A 16-year-old boy presented to the accident and emergency department after driving a quad bike into a hedge. He reported that a twig had poked the right eye.

There was no loss of consciousness and no head injury. The doctor prescribed chloramphenicol and discharged the patient. Three days later the patient presented to his general practitioner complaining of orbital swelling and bruising and reported that he had pulled a thorn out of his right upper eyelid the previous day. He was referred to the eye casualty doctor the following day.

On examination the visual acuities were right 6/9, left 6/4. There was upper eyelid swelling and upper nasal conjunctival haemorrhage. In this area of haemorrhage there was a bulbar conjunctival laceration and conjunctival oedema. There was no intra-ocular injury and the rest of the ophthalmic examination was normal. The patient complained of aching in the eye and vertical and torsional diplopia.

On orthoptic examination, there was a 12^Δ exotropia with 8^Δ right hypertropia (RHT) with 9° of excyclo-torsion in the primary position. There was a moderate underaction of the right eye on laevo depression with the RHT increasing to 12^Δ and the torsion to 17° in this position (Fig. 1). Radiography revealed no orbital injury or foreign body, and neither were clinically identified.

The conjunctival laceration was treated conservatively and the patient was monitored over the following 14 days. The restriction of ocular movement and upper nasal eyelid and conjunctival swelling and erythema increased and a CT scan was planned. However, before this was performed the patient returned complaining that it was increasingly difficult to open the right eye. Examination revealed the end of a foreign body visibly protruding through the site of the previously noted upper nasal conjunctival laceration. Following application of topical anaesthetic a 12 mm thorn was removed using forceps (Fig. 2).

Over the next few weeks the orbital swelling reduced and ocular movement improved. Three months later, at the final follow-up visit, visual acuity was right 6/4, left 6/4. Cover test revealed orthophoria at near and distance. Ocular movement was full and the Hess chart showed no abnormality (Fig. 3). There was only minimal redness at the site of foreign body entry and the swelling had disappeared. The patient had no symptoms.

Discussion

Wooden and organic foreign bodies are often difficult to identify and localise,¹ despite careful clinical examination. An orbital foreign body may be overlooked when there is only a small laceration, no abnormal radiographic findings and mild clinical inflammation early in the clinical course,^{2,3} as in this case. In a large series of patients with orbital trauma, 2.9% suffered from an intra-

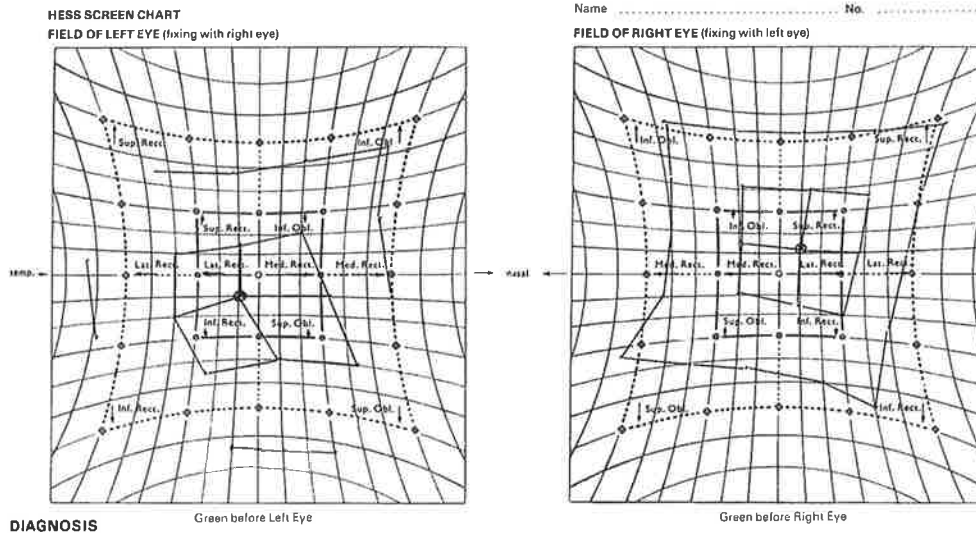


Fig. 1. Hess chart at presentation.



Fig. 2. Thorn removed from the right upper nasal conjunctiva.

orbital foreign body.⁴ Sullivan *et al*⁵ stated that a retained foreign body should be suspected in all penetrating injuries involving wood. Wooden foreign bodies are particularly likely to cause infective orbital cellulitis,^{1,5} with potentially devastating effect.

In this case, the initial diagnosis was that of conjunctival laceration and a superior oblique paresis due to trauma. The correct diagnosis was retained orbital foreign body causing direct mechanical restriction of the muscle, which recovered on its removal.

This case highlights the need for close monitoring and a high suspicion of orbital foreign body. The initial diagnosis may not always be correct, especially if the signs and symptoms continue to worsen rather than improve. CT scanning is invaluable in such cases, and early investigation is advisable to minimise later complications. In this case the foreign body became visible before the CT scan could be performed. It is

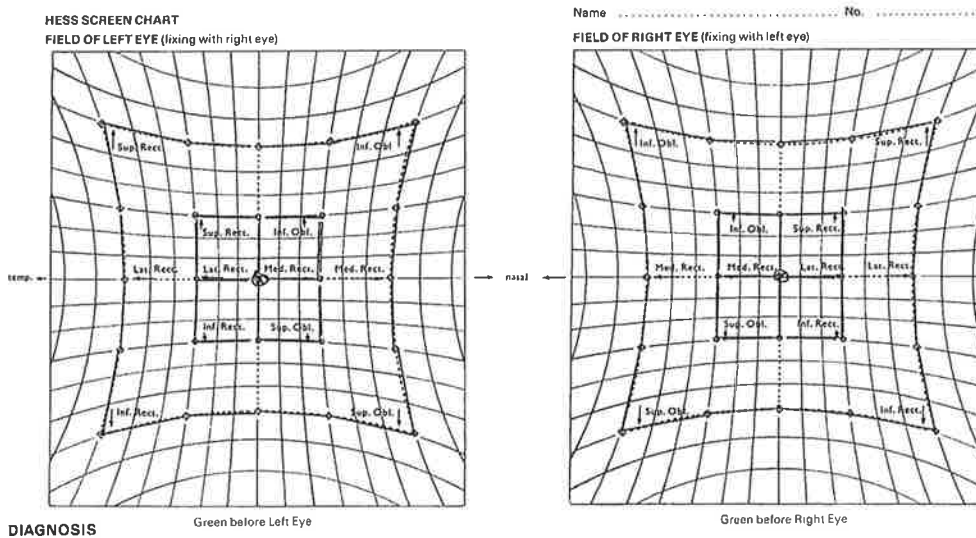


Fig. 3. Hess chart at 3 month follow-up.

interesting to note that the foreign body appeared to cause a superior oblique muscle weakness, which resolved on its removal.

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