Case report

Giant retinal tears resulting from eye gouging in rugby football

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Abstract
A 29 year old myopic man sustained two separate giant retinal tears in his right eye following deliberate eye gouging during a rugby tackle. These were successfully repaired by vitrectomy and intraocular silicone oil injection. Although the postoperative course was complicated by pupil block glaucoma, he regained corrected visual acuity of 6/5 after oil removal. This injury highlights the potentially sight threatening nature of this type of rugby injury and the importance of early referral for specialist treatment.

Keywords: eye; retina; rugby

Giant retinal tears are those that extend through 90° and result in a large posterior flap of retina that is mobile from the surrounding vitreous. They may be idiopathic (usually in high myopes), result from blunt or penetrating ocular trauma, or occur in certain vitreoretinal dystrophies. Retinal detachment occurs as fluid passes through the large tear and accumulates under the retina. Central vision may be lost if the retinal detachment extends to involve the fovea, or the torn retina folds over on itself to cover the fovea. Unlike the case of retinal dialyses (which commonly result from blunt trauma), the vitreous is detached posteriorly and the surgical outcome is uncertain because of the risk of late scar tissue formation. Surgical repair requires vitrectomy, laser or cryo retinopexy, and injection of silicone oil or gas to tamponade the retinal break. Visual recovery is variable, depending on the extent of macular damage and the development of complications after the operation.

Case report
A 29 year old myopic man presented with rapid onset of an inferior visual field defect in his right eye. He gave a six day history of floaters in that eye, occurring immediately after a rugby tackle in which his right eye was deliberately gouged with an opponent’s thumb, the pressure being maintained for several seconds. He had suffered no previous ocular trauma. The left eye was normal. His right visual acuity was 6/6 corrected and there was a mild anterior uveitis. Funduscopy showed both a superior and an inferior giant retinal tear and associated retinal detachment without macular involvement (figs 1 and 2). Surgery to repair the retina was undertaken using vitrectomy, intraocular silicone oil injection, laser photocoagulation, and inferior scleral buckling.

After the operation the retina was attached, but six weeks later the patient developed an episode of acute angle closure glaucoma secondary to a droplet of silicone oil migrating forwards into the anterior chamber and blocking the pupil. Emergency admission was required to control the intraocular pressure which was elevated to 60 mm Hg (normally <21 mm Hg). Medical treatment, including intravenous mannitol, was unsuccessful, and drainage of anterior chamber silicone oil by corneal paracentesis was required. The remainder of the oil was removed electively two months after the operation.

Although the visual acuity of the patient ultimately improved to 6/5 (corrected with glasses), he suffers from some minification of the image in the right eye.
Case report

A giant retinal tear is an extremely serious ocular injury. It can occur as a result of a direct blow to the eye, or as an indirect result of the eye being forced inward or outward by external forces. Giant retinal tears are often associated with other serious ocular injuries such as retinal dialyses, macular holes, and subretinal haemorrhage.

Giant retinal tears may be associated with trauma to the eye, either from a direct blow or from sudden increase in intraocular pressure. The tear may extend across the retina and may involve the macula, the central part of the retina responsible for sharp vision.

The occurrence of a giant retinal tear requires immediate medical attention. The patient should be referred to an ophthalmologist for assessment and treatment.

Discussion

This case illustrates the severe nature of retinal damage that can result from a gouging injury. The patient presented early to the hospital, allowing for a full recovery from the surgery and its complications. The visual acuity may have been a lot worse had the patient not been referred to an ophthalmologist within 24 hours.

Giant retinal tears are considered an extreme form of retinal tear which can occur as a result of blunt or penetrating trauma to the eye. They are associated with other serious ocular injuries such as retinal dialyses, macular holes, and subretinal haemorrhage.

Occasionally, serious foul play incidents in rugby are reported in the media. A study of catastrophic eye injuries occurring in rugby union and league players in New South Wales over a 16 year period disclosed claims for financial compensation for permanent visual impairment in 26 cases, five of which resulted from injuries that appeared to be due to intentional gouging. Others arose from blows with fists, elbows, or knees.

This case graphically illustrates the potentially severe consequences of eye gouging, and the need for team doctors and physiotherapists to bring this to the attention of players, referees, and coaches involved in contact sports. The favourable outcome provides a timely reminder that anyone complaining of persistent ocular floaters after a blow directly to the eye or head should be examined by an ophthalmologist within 24 hours.

Commentary

Retinal detachment is an uncommon condition. At the most, 10% of all detachments are attributable to previous injury. Such detachments are not due to bumps or blows to the head but result from direct force applied to the eye resulting in deformation of the globe. An increasing number of trauma induced retinal detachments result from sports injuries and represent a greater proportion of complex detachments such as those with associated giant retinal breaks. Not uncommonly other factors play a part in the development of the detachment such as myopia. In many sports, serious injury is the consequence of foul play such as thumping injuries in boxing as well as other forms of eye gouging as in the reported case. Outlawing certain types of play by simply highlighting their occurrence or legislative action can do much to prevent these sight threatening injuries.

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