

SEVERE EYE INJURIES IN CRICKET

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We report five cases of severe eye injury sustained in cricket, including retinal detachment and rupture of the globe. The eye is at particular risk from a rising ball. We comment on the need for appropriate facial protection for batsmen and close fielders.

INTRODUCTION

Sport is not a common cause of eye injury. Two recent studies have shown that sport is responsible for only 2.5% (Vernon, 1983) and 2.2% (Jones et al, 1986) of ocular trauma in the United Kingdom. However, sport accounts for a disproportionate number of injuries severe enough to justify inpatient care. This proportion appears to be increasing with 5.9% reported from 1967/1976 (Canavan et al, 1980) compared with 23% in 1981 (Vinger) and 20% in 1983 (Jones et al, unpublished data). Much attention has been paid to squash, badminton and boxing and the attending risk of eye injury (Ingram and Lewkonja, 1973; Chandran, 1974; Blonstein, 1975; Board of Science and Education Working Party on Boxing, 1984; Elkington, 1985; Kennerley Bankes, 1985). Little attention however has been paid to cricket, and we are aware of only one written account devoted to such injuries (Coroneo, 1985), and this restricts itself to the special indoor game. We report five illustrative cases of severe eye injury sustained at cricket and comment on some common features and suggest remedial measures.

CASE REPORTS**Case 1**

A 15 year old right-handed batsman hooked at a ball which ricocheted off the bat into the right eye. On examination the visual acuity was 6/6. An eyelid laceration required sutures and there was an hyphaema with secondary glaucoma which settled on medical treatment. Facial X-rays revealed a soft tissue mass in the right maxillary antrum indicating a blowout fracture of the orbit floor. There was neither diplopia nor enophthalmos and repair was unnecessary. The visual acuity recovered to 6/4. There was no retinal damage.

Case 2

A 49 year old right-handed batsman played forward to a short pitched delivery of medium pace. The ball bounced up and struck him on the left brow laterally, causing a laceration which required sutures. The visual acuity was reduced to 'Count Fingers' only, by an hyphaema. There were clinical signs of a blowout fracture of the orbit floor (enophthalmos, diplopia on upgaze and infraorbital hypoaesthesia) but these signs subsequently resolved spontaneously. With absorption of the hyphaema the visual

acuity improved but iris damage with mydriasis persisted and there is an accommodative palsy giving reading difficulties. The visual acuity remains reduced to 6/18. Recession of the angle of the anterior chamber leaves him at risk of chronic glaucoma.

Case 3

A 28 year old man was fielding close to the wicket. The ball was driven into the ground by the batsman, bounced up and hit him in the left eye. Immediate visual disturbance was noted but he did not present until four weeks later with a visual acuity of 6/36 due to a retinal detachment with multiple retinal holes, requiring surgery. Following this the visual acuity has recovered to 6/18.

Case 4

A 19 year old right-handed batsman was hit in the right eye while hooking a medium pace delivery, the ball glancing off the bat edge. On examination the visual acuity was 6/9. There was a corneal abrasion and angle recession. More significantly there was a retinal detachment with multiple breaks. This required total vitrectomy, encirclement and intraocular gas (sodium hexafluoride). The retina did not flatten and he required a second procedure, again with gas injection. Three weeks later a total traction retinal detachment supervened requiring intraocular silicone oil injection and division of traction bands. At this stage he could discern hand movements only. A complicated cataract formed and he is awaiting lens extraction.

Case 5

A 26 year old right-handed batsman was hit in the right eye following a ricochet off the edge of the bat. On examination the visual acuity was 'Hand Movements' only. The globe was ruptured medially and there was an associated fracture of the inferior orbit margin. At surgery a large L-shaped rupture was repaired and prophylactic cryopexy performed to prevent retinal detachment. Although the retina has remained flat there is a partial vitreous detachment with opacities. The best acuity is now 6/36, mainly due to traumatic cataract.

DISCUSSION

Cricket as a cause of eye injury has been infrequently reported (Ogilvie, 1900; d'Ombraïn, 1945; Gregory, 1986) and only one paper is devoted to such injury (Coroneo, 1985). Yet cricket may be responsible for 9.0% (Jones et al, unpublished data) or 5.4% (Gregory, 1986) of all sporting eye injuries. In Australia it is reported as causing 7.0% of all traumatic hyphaemas, of whatever cause (Littlewood, 1982).

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Clearly the problem has been given inadequate attention. We feel that an awareness of the possibility of injury is an essential prerequisite for prevention. It is noteworthy that the MCC does not keep a record of injuries sustained during cricket under its aegis (Stephenson, 1986) but we would welcome the introduction of such a register which would at least indicate the scale of the problem.

Projectile size is a well-known factor in its ability to penetrate the bony orbit margins and damage the globe itself (Keeney, 1981). The orbit and its contents are easily accessible to such small objects as squash balls and badminton shuttlecocks and injuries caused by these have been well documented (Ingram and Lewkonja, 1973; Chandran, 1974; Blonstein, 1975; Kennerley Bankes, 1985). However, to an object as large as a cricket ball the brow offers substantial protection to the eye when the line of approach is horizontal. This is not so for a rising trajectory especially when the ball approaches obliquely from the side; indeed rupture of the globe is most frequent from a blow directed from the lower and lateral side (Warwick, 1976). It is apparent that in all our cases the injury was caused by a rising ball. In three of these cases the hook shot was involved; a horizontal swing across the line of a ball which is frequently rapidly rising from a short pitched delivery. An upward glance from the upper edge of the bat may adjust the trajectory to a nicety.

It is probably no coincidence that, in our three cricketers who were hooking the ball, the eye on the side of the dominant (right) hand was involved, when one considers the turn of the body at the point of impact. The hook appears to be a stroke which puts the eyes at particular risk.

The eye is a resilient structure, and blowout fractures of the orbit floor are common in the presence of an intact globe. However, a fracture of the orbit margin itself indicates a much more forceful blow and globe rupture may occur, as in Case 5. We would therefore recommend particular care in the examination of the globe for rupture when there is an orbit margin fracture.

That head injury is a risk in cricket is well demonstrated by the influx of protective headgear. Protection of the upper face by visor or cage however is by no means commonplace. It has recently been well demonstrated in Canadian

Ice Hockey that the widespread introduction of eye protection has dramatically reduced the incidence of eye injuries (Pashby, 1985). We therefore feel that adequate eye protection should be strongly recommended for cricketers, particularly batsmen facing fast bowling and for close fielders in the same circumstances, at club and professional levels, if not at all levels of proficiency.

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References

- Blonstein, J. L., 1975 "Eye injuries in sport with particular reference to squash rackets and badminton". *Practitioner* 215: 208-9.
- Board of Science and Education Working Party on Boxing, British Medical Association: Report, 1984.
- Canavan, Y. M., O'Flaherty, M. J., Archer, D. B. and Elwood, J. H., 1980 "A 10-year survey of eye injuries in Northern Ireland 1967-1976". *Brit.J.Ophthalmol.* 64: 618-25.
- Chandran, S., 1974 "Ocular hazards of playing badminton". *Brit.J.Ophthalmol.* 58: 757-60.
- Coroneo, M. T., 1985 "An eye for cricket. Ocular injuries of indoor cricketers". *Med.J.Aust.* 142: 469-71.
- D'Ombra, 1945 "Traumatic monocular chronic glaucoma". *Trans. Ophthalmol.Soc.Aust.* 5: 116-120.
- Elkington, A. R., 1985 "Boxing and the eye". *Trans.Ophthalmol.Soc.UK CIV:* 898-902.
- Gregory, P. T., 1986 "Sussex Eye Hospital sports injuries". *Brit.J.Ophthalmol.* 70: 748-50.
- Ingram, D. V. and Lewkonja, I., 1973 "Ocular hazards of playing squash rackets". *Brit.J.Ophthalmol.* 57: 434-8.
- Jones, N. P., Hayward, J. M., Khaw, P. T., Claoué, C. M. P. and Elkington, A. R., 1986 "Function of an ophthalmic "accident and emergency" department: results of a six month survey". *Brit.Med.J.* 292: 188-90.
- Keeney, A. H., 1981 "Discussion". *Ophthalmology* 88: 112-3.
- Kennerley Bankes, J. L., 1985 "Squash rackets: a survey of eye injuries in England". *Brit.Med.J.* 291: 1539.
- Littlewood, K. R., 1982 "Blunt ocular trauma and hyphaema". *Aust.J. Ophthalmol.* 10: 263-66.
- Ogilvie, F. M., 1900. *Trans.Ophthalmol.Soc.UK* 20: 202-29.
- Pashby, T., 1985 "Eye injuries in Canadian amateur hockey". *Can.J.Ophthalmol.* 20: 2-4.
- Stephenson, Lt.Col. J. R., 1986 (Asst. Sec. MCC). Personal communication.
- Vernon, S. A., 1983 "Analysis of all new cases seen in a busy regional centre ophthalmic casualty department during 24-week period". *J.Royal Soc.Med.* 76: 279-82.
- Vinger, P. F., 1981 "Sports eye injuries. A preventable disease". *Ophthalmology* 88: 108-112.
- Warwick, R. (Ed.), 1976. *Wolff's Anatomy of the Eye and Orbit.* 7th Ed. Ch. 2. H. K. Lewis, London.

BOOK REVIEW

Title: VESTIBULAR AND VISUAL CONTROL ON POSTURE AND LOCOMOTOR EQUILIBRIUM
Editors: M. Igarashi and F. O. Black
Publisher: Karger (Basel)
 Price: US \$80.50 366 pages, 149 figs., 25 tables ISBN 3-8055-3951-7

This is a report of the 7th International Symposium of the International Society of Posturography, Houston, Texas, held in 1983.

The editors, Makoto Igarashi and F. Owen Black, are most respected workers in the field and the papers of many distinguished scientists are presented. Perhaps the most interesting area of discussion was the importance of postural control in a space environment.

This is certainly not a book for the casual reader, but those involved in research into locomotion, posture and the sensory control of both and those interested in vestibular abnormalities will find much food for thought. It is certainly a reference book that is more suited to the library, than to the bookshelf of the ordinary practitioner in the field of sports medicine and rehabilitation.

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