

Traumatic iritis in combat sports: a case series

Abstract

Professional boxing and mixed martial arts (MMA) are popular combat sports carrying high risk for acute and chronic traumatic brain injuries as well as orthopedic and ophthalmological injuries. Traumatic iritis (TI) has not been well documented in the combat sports medical literature as compared to neurological and orthopedic injuries commonly associated with these sports. In this case series 3 boxers and 2 MMA combatants with TI are described. The mechanism of injury, clinical presentation, management, and prognosis is discussed.

Keywords: boxing, MMA, combat sports, eye injuries, traumatic iritis

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Abbreviations: MMA, Mixed martial arts; TI, Traumatic iritis

Case series

Five combatants with TI were identified after the completion of professional boxing and MMA bouts from the period 2018-2021. The combatants (3 males and 2 females) varied in age from 20 to 35 years and from welterweight (147 lbs.) to heavyweight (200 lbs. and above) weight class. In all combatants the injury occurred during the course of the bout (ranging from 4 rounds to 12 rounds bouts). None of the combatants were aware of their injury during the fight itself and the injury did not result in medical stoppage. One bout was halted for 2 minutes following an eye poke. The combatant did not complain of any symptom and the fight was allowed to proceed after examination by a ringside physician inside the cage.

During the post-fight examination all 5 combatants had complaint of blurred vision (4 in the right eye and 1 in the left eye), two combatants complained of photophobia and three exhibited watering (tearing) from the affected eye (epiphora). All 5 combatants were noted to have anisocoria which led to consideration of diagnosis of TI. Rest of the neurological examination was non-focal in the 5 combatants. Conjunctival injection of the affected eye was documented. Nystagmus and extraocular muscle weakness was not identified. Fundoscopic evaluation was not carried out at the venue. All 5 combatants were discharged home from the event venue itself with instructions to follow up with an ophthalmologist if symptoms persisted or worsened.

Discussion

Traumatic iritis is inflammation of the iris due to trauma. It is classified as a subtype of uveitis localized to the iris and hence also is referred to as anterior uveitis. The presence of white blood cells and proteinaceous fluid in the anterior chamber (hypopyon) commonly referred to as the "anterior chamber reaction" or "cell and flare" can be visualized by directing a narrow intense slit beam of light at an oblique angle into the anterior chamber. Presence of Vossius ring (a ring of opacity on the back of the lens caused by release of pigments from the damaged tissues) is another clinical sign. Inflammatory reaction causes the formation of synechiae between the iris and the anterior lens. Intraocular pressure may increase as a result of the inflammatory response and damage to the trabecular meshwork resulting in secondary angle-closure glaucoma.¹ If this occurs emergency intervention is needed to prevent permanent vision loss.

Traumatic iritis while likely common is not a well-documented ophthalmological injury in combat sport medical literature. Orlando and Doty in their prospective study of 125 athletes presenting with ocular injuries to a private ophthalmological practice found 57 with corneal abrasion, 48 with TI, 45 with lid or orbital contusions and 43 with conjunctival hemorrhages. Basketball and racquet sports were the leading causes of ocular trauma. Baseball/softball and football were other sports associated with high incidence of ocular trauma. Hyphema was the main reason for hospital admission. Permanent sequelae occurred in 37 patients (29%) with 8 suffering some degree of permanent visual loss. In their reported cohort most of the injuries occurred while participating in unsupervised sporting activities.²

The mechanism of TI in combat sports is usually a direct blow (punch) to the eye (blunt force trauma) or an accidental eye poke. An eye poke may occur when the 2 combatants are engaged in grappling. The design of some MMA gloves may also predispose to incidental contact between the eyes and the opponent's fingers. In boxing blunt trauma to the eye may occur when a blow is delivered with a partially open hand. The affected combatant usually presents with complaints of blurred vision, decreased visual acuity, photophobia, ocular pain and floaters. In the author's experience the injury may at times cause transient interruption in the course of the bout due to discomfort and tearing in the affected eye. The referee calls a time out and the ringside physician is summoned to examine the injured combatant. The ringside physician should perform penlight exam to assess pupils, redness, and/or discharge. Visual acuity testing should be performed to detect vision changes. Open globe (penetrating injury to the eye) should be ruled out. Treatment in the cage or ring is conservative and involves giving the combatant time to recover from the acute pain and tearing. The Association of Boxing Commissions recently passed by vote a rule allowing fighters who have suffered an eye poke as much as five minutes to recover. With this change in rule now eye pokes are treated the same way as groin strikes when such a foul occurs in MMA.³

Treatment of TI is usually supportive as mild cases resolve without any active intervention. The combatant should be discharged from the arena with instruction to follow up with an ophthalmologist if symptoms persist. First line of treatment is usually administration of topical cycloplegics to dilate the pupil and prevent synechiae formation. By stabilizing the blood-aqueous barrier they prevent further protein leakage (flare response). Topical steroids help to alleviate inflammation but should be avoided if there is a corneal epithelial defect. Prednisolone acetate 1% four times daily is generally

prescribed for several days. Topical beta blockers are used to treat secondary glaucoma.^{1,4} While most combatants respond well to the above standard treatments, complications including decreased visual acuity, blindness, secondary glaucoma, cataracts, irregular pupil, band keratopathy and cystoid macular edema may occur in some necessitating specialized ophthalmological care.

Conclusion

Traumatic iritis is a not so uncommon ophthalmological injury in combat sports. Sports glasses are not allowed to be worn during professional boxing and MMA bouts but use of protective glasses should be encouraged during training and sparring sessions. Early identification and proper management of TI ensures good outcome in most fighters, helps preserve vision and prevent long-term disability.

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Conflicts of interest

Authors declare that there is no conflict of interest.

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