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Guest Editorial

Posterior segment manifestations of ocular trauma

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Trauma can lead to devastating effects on the posterior segment of the eye. Even trivial injuries can have vision threatening complications involving the retina and surrounding structures. With several advancements in posterior segment surgeries it is possible to salvage the eye and get reasonably fair visual outcomes in most cases. A basic knowledge of the common posterior segment manifestations of trauma is extremely important when it comes to management or referral of these cases.

The most common manifestation that we encounter is Berlin's edema (Comotio Retinae).¹ It can be identified as a greyish-white discolouration of the retina which happens due to disruption of outer segment photoreceptor layer after trauma. It may be accompanied with macular oedema or haemorrhages. Usually it completely resolves on its own or may lead to some scarring resulting in vision loss.

Trauma may lead to stretching and breakage of the Choroid, Bruch's Membrane and Retinal Pigment epithelium commonly referred to as Choroidal rupture. The overlying neuro-sensory retina is usually intact. It can be clinically observed as a sub-retinal yellowish-white crescentic streak on the posterior pole. There may be several such streaks of choroidal rupture and when involving the fovea may lead to severe vision loss which is not amenable to treatment. Para-foveal choroidal rupture is usually without any visual impairment.²

Trauma may lead to retinal detachment through a variety of retinal breaks. There may be small holes, macular holes or large dialysis. The patient may present with hazy media due to vitreous haemorrhage in blunt trauma or hazy cornea in case of penetrating injuries. A meticulous Ultrasonography should be performed to assess the extent of underlying retinal damage. Hazy cornea due to a corneal tear, corneal scar or a corneal abscess may need a combined approach. Such cases require the use of a temporary keratoprosthesis to achieve a clear media while operating on the retina.³ Damaged lens may need lensectomy and secondary IOL implantation at a later stage. The choice of tamponade depends on the location, extent and duration of detachment. Long standing, large breaks in the inferior quadrant with PVR changes fair better with silicone oil tamponade and less severe cases with breaks only in the superior quadrant may only need a gas tamponade.

Traumatic Macular Hole is another sight threatening manifestation of trauma. It can be easily identified clinically or on Ocular Coherence Tomography. Small sized holes may be observed for spontaneous closure, larger holes require Vitrectomy with Internal Limiting Membrane Peeling and injection of SF6 or C3F8 with prone positioning.⁴ Usually the visual prognosis is guarded in such cases.

Retained intra-ocular foreign bodies may lead to devastating ocular complications like vitreous haemorrhage, retinal detachment, endophthalmitis etc. Such cases require

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prompt diagnosis, identification and localisation of the foreign body and surgical removal. Broad-spectrum antibiotics in the vitreous cavity at the end of the surgery help in preventing enophthamitis if it hasn't already occurred. The right instruments should be kept handy to grab and remove the foreign body as repeated falling of the foreign body on the retina may damage the retina further.⁵

Injuries that involve the posterior segment are usually of grave nature and an extremely traumatic experience for the patient and a challenging one for the surgeon. Patients need to be counselled with empathy regarding the severe nature of the trauma and that several surgeries may be required and despite best efforts optimal visual outcomes may not be achieved. It's important to have a balanced approach while dealing with these patients and keep them informed about each step of repair.

Conflict of Interest

None.

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