Luxation of Eye ball following trauma: Novel simple treatment

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Luxation of the eye globe is a rare occasion but it carries a risk of threat to permanent vision loss especially when associated with very high intraocular pressure. Appropriate intervention should be undertaken instantly. Predisposing factors include; eyes as in shallow orbital sockets, floppy eyelid syndrome, and exophthalmos. Prompt reduction results in restoration of full anatomical and visual recovery in otherwise healthy eyes. We report a case of globe luxation following trauma by door handle in a 65-year-old female, who recovered completely after reposition of the globe using Desmarres Lid Retractors.

**Key words:** Blunt trauma, Desmarres lid retractors, globe luxation

Luxation of the eye globe is a rare condition but it carries a risk of permanent visual loss. Globe luxation has generally been categorized as spontaneous, voluntary or traumatic. Luxation occurs when the equator of the globe is allowed to protrude anterior to the eyelid aperture. The orbicularis muscle contracts, voluntarily or involuntarily, causing further anterior displacement and the globe is caught outside the eyelid aperture. Spontaneous luxation occurs without conscious effort, with or without a precipitating factor.[3] Voluntary luxation is the ability to luxate one's globe at will, without any precipitating trigger. Traumatic luxation occurs without conscious effort after trauma as a result of a dynamic interplay of forces,[2] Pro-pulsing the globe forward after entering an elongated object to the medial orbit.[8] Immediate reduction is warranted if the globe is still intact to minimize the ischemia to ocular structures.[8] We report a patient who developed traumatic globe luxation caused by a door handle, which rarely occurs in adults, that was treated simply by using Desmarres Lid Retractors under topical anesthesia.

**Case Report**

A 65-year-old woman presented to the emergency department with severe ocular pain in the right eye; the patient gave a history of trauma sustained from a door handle three hours back. On examination, her visual acuity in the right eye was hand motion (HM), upper and lower lids behind the luxated globe, IOP 54 mmHg, corneal edema, deep quite anterior chamber and hazy view to the retina [Fig 1]. Left eye examination was unremarkable. The case was diagnosed as retro bulbar hemorrhage by the emergency resident on call, in which urgent brain and orbit computed tomography (CT) scan revealed only globe luxation with retracted swollen eyelids and no evidence of intracranial or intraorbital hemorrhages or orbital wall fractures [Fig 2], while B scan revealed no evidence of optic nerve avulsion.

Topical benoxiate drops were administered to the right eye and a trial to reposition the globe with the help of a cotton tip applicator was unsuccessful. Desmarres Lid Retractors was used in which we inserted the curved tip of the retractor between the upper lid and the globe and by pulling the retractor up and superior the globe retracted back to its place [Fig 3]. The patient felt immediately relieve of pain and reduction of IOP to 21 mmHg without anti-glaucoma medications and associated with improvement of corneal clarity [Fig 4]. Vision improved up to 20/80 and her Fundus examination did not show any abnormality.

During follow up ptosis was observed in the right eye for the first three weeks, however, this improved gradually and got resolved 6 weeks after the trauma. In the last visit, after 6 months of trauma, the patient presented with visual acuity of 20/60 and IOP of 16 mmHg.

**Discussion**

Complications associated with spontaneous globe luxation may include exposure keratitis, corneal abrasion, blurred vision, pain, blepharospasm, and anxiety.

Door handles ocular injuries rarely occurs in adults but has been reported to cause significant ocular and periorcular injuries among young children.[5] Incidence of optic nerve avulsion is also increased in these patients.[9] Brain and orbital CT scans are required to exclude intracranial bleeding, optic chiasmal injury and bone fractures.[7]

The luxated globe should be managed as an emergency because most cases end with no light perception vision.[9]

A procedure has been described to reduce a luxated globe by patient relaxation and reclining to allow the orbicularis oculi muscle to relax and make globe manipulation easier then rolling back the lids out around the front part of the globe using a finger of cotton swab while gently pushing the globe back into place.[9] In our case we tried a similar approach unsuccessfully and therefore introduced a Desmarres lid retractor as a good option to reposit the globe.

Three cases of unilateral neurogenic blepharoptosis secondary to trauma with complete recovery within the first 3 months which simulates part of our patient presentation has been reported.[1] Our patient ended with good vision and recovered from traumatic ptosis.

**Conclusion**

Although globe luxation is a devastating consequence to a
blunt trauma to the globe, in some instances patients can end up with a favorable outcome with good vision. In our patient early intervention with globe repositioning led to prevention of a well known complication of optic disc damage and can be a key factor to regain good vision. This can be achieved by different maneuvers depending on the location settings and patient cooperation.

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Figure 1: Right eye with visual acuity of HM
Figure 2: Intraorbital hemorrhages or orbital wall fractures
Figure 3: Desmarres Lid Retractors applied to upper lid
Figure 4: Patient eye after treatment

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