



## Endonasal Management of Retrobulbar Hematoma, A Case Report

### KEYWORDS

endoscopic, orbitotomy, retrobulbar, transnasal.

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**ABSTRACT** *Retrobulbar hematoma is a rare complication of blunt periorbital trauma with a potential risk of visual impairment and blindness. One such rare case of post-traumatic retro-bulbar hematoma with compromised vision which was decompressed through endoscopic transnasal transethmoidal orbitotomy is discussed here. This is most effective method in orbital decompression for retrobulbar hematoma especially in cases where it is necessary to gain space for the orbit in addition to evacuating space occupying blood clots.*

### Case report:

A 15 yr. old boy presented to the ophthalmology clinic with a complaint of gross protrusion of left eye with compromised vision. Patient had a history of fall from bicycle 7 to 8 days before, with a small abrasion on the same side of the forehead. There was no history of nasal bleeding, nausea, vomiting and loss of consciousness. Patient was admitted in a government hospital & was under observation. On the third day of trauma patient & his relatives noticed slight protrusion of left eyeball which progressed in couple of days to severe protrusion with inability to close the eye & compromised vision.

The boy was eventually referred to ophthalmic clinic for opinion. He was conscious, well oriented to time & space. On examination the left eye vision was 6/24, there was severe nonaxial downward & lateral proptosis with severe lid oedema & tightness of the lids. Severe conjunctival chemosis & ecchymosis was present with exposure keratitis.

**Fig.1 : Post traumatic left eye proptosis**



Pupillary reaction was normal & there was no relative afferent pupillary defect [RAPD]. The fundoscopic examination was within normal limits, the extraocular movements were restricted in all quadrants. Depigmented patches of abrasion were seen on left zygomatic & cheek region. CT scan of the orbit in coronal & axial sections was taken which revealed a homogenous opacity in the superio-nasal & posterior aspect of the orbit in extraconal peripheral space.

**Fig.2 : CT orbit coronal section showing opacity in orbit**

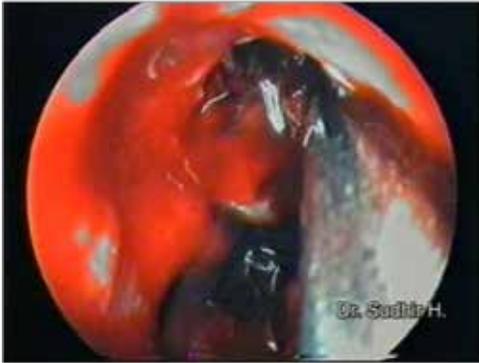


There was no evidence of fracture of the orbital wall displaced or undisplaced. Blood investigations were within normal limits, which ruled out bleeding disorders.

Patient was posted for surgery under general anaesthesia.

Uncinectomy was done with sickle knife; wide middle meatal anastomy was done with specific reason that the prolapsed orbital fat would not obstruct the maxillary ostium in future. Thorough clearance of the middle ethmoidal air cells was done so as to expose the lamina papyracea. Lamina was then drilled to thin out with diamond burr, which was then broken with ball probe & removed with straight Blakeslee Wild forceps to expose the orbital periosteum. With a sickle knife periosteum was incised from posterior to anterior with evident prolapsing fat. A curved cannula was negotiated first superior- medially & then laterally along the bony orbit & suddenly a gush of dark brown coloured blood was seen.

**Fig.4 : Intraoperative drainage of hematoma**



About 15 to 20 cc of it was thoroughly drained. The proptosis was reduced to some extent on table. Nasal cavity was packed with merocele.

The movements of the eye were tested in immediate recovery period. He was kept on inj. Ceftriaxone, amikacin, metronidazole, diclofenac with oral diamox & topical antibiotic ointment with lubricating eye drops in the post operative period. The merocele pack was removed on the second post operative day. The proptosis started regressing gradually & it took a week for the complete closure of the lids; however complete regression of the proptosis & healing of exposure keratitis took another two weeks.

**Fig.5 : Postoperative photograph after 3 weeks**



At one month follow up faint nebular grade opacity was present & patient's vision was improved to 6/6.

#### Discussion:

Retrobulbar haematomas have been reported as a complication following surgical reduction of facial fractures,<sup>1,2,3</sup> eyelid surgery,<sup>4</sup> endoscopic sinus surgery,<sup>5</sup> regional anaesthesia via retrobulbar injection,<sup>6</sup> dacryocystectomy<sup>7</sup> and as a consequence of facial trauma.<sup>8</sup>

The formation of retrobulbar hematomas is a known complication following facial trauma. Hislop,<sup>8</sup> reported an incidence of 0.6 % in fractured zygomas involving the orbit and Gerbino,<sup>9</sup> identifying an incidence of 0.45% after reviewing 1971 cases of orbital trauma. The incidence of retro-bulbar hematoma in the above study is more in cases of undisplaced fractures of the orbit and this is due to inability of the blood to drain into the paranasal sinuses. In the present case however there was no evidence of even undisplaced fracture.

Signs and symptoms consistent with a retrobulbar haematoma include painful proptosis and a stony eyeball with restricted movements & impaired visual acuity & loss of light reflex in some cases. Computed tomography (CT) imaging often confirms the diagnosis. Medical therapies described in the literature include the administration of mannitol, acetazolamide.<sup>10</sup> Definitive treatment is often provided by surgical decompression. Early detection and adequate appropriate treatment of orbital hematomas is mandatory to achieve an acceptable outcome of eye function.

The best treatment plan for retrobulbar hematoma remains controversial as indications for surgical decompression are still unclear. In the presented case there was altered visual acuity with exposure keratitis along with severe, progressive proptosis and these were the deciding factors in favour of surgical intervention despite of normal light reflex & absent RAPD [ Relative apparent pupillary defect ].

The literature reviews suggest different surgical modalities of intervention like a) lateral canthotomy-inferior cantholysis if the the proptosis is rapidly developing to relieve the growing intra orbital pressure & can be performed as a bedside procedure or in operation theater, b) medial canthotomy through Lynch external ethmoidectomy<sup>11</sup> c) lateral orbitotomy<sup>12</sup>. In this case we opted for planned orbital decompression as it was slowly progressive proptosis but through endoscopic transnasal, trans-ethmoidal medial orbitotomy. This approach avoids external scar & the morbidity associated with medial or lateral orbitotomy.

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