

Vitreotomy for Management of Ocular Trauma



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Evaluation of the Patient Following Ocular Trauma

■ History:

How to expect posterior segment affection ?

■ Examination:

- Avoid more damage
- Under anesthesia
- VA - IOP - APD
- Ant. Segment (entry site)
- Fundus

■ Investigations:

- B-scan (when ?)
- CT
- MRI : wood and certain types of plastic



Remember

An eye with **minimal or no anterior damage** may have a **severe posterior injury**.



Indications of Vitrectomy in Ocular Trauma

- Vitreous Hemorrhage
- Retinal tears or detachment
- Dislocated lens
- Tractional RD
- Posttraumatic Macular Hole
- Intraocular Foreign Bodies
- Posttraumatic Endophthalmitis



Benefits of Vitrectomy

- Reconstruction of the posterior segment
- Clears vitreous opacities
- Controls the healing process & decreases the incidence of tractional RD
- Prevents endophthalmitis

Timing of Vitrectomy

(Controversy)

**Early
Vitrectomy**

(within 2d)

**Delayed
Vitrectomy**

(7-14d)



Timing of Vitrectomy

- Have very little effect on the final outcome and the final VA is determined by the type and extent of trauma.
- **In earlier vitrectomy**, we could have higher risk of intraoperative complications
- **In late vitrectomy**, there is higher incidence and severity of postoperative complications such as PVR

**Primary wound closure
should not be delayed**



Immediate vitrectomy

- **Indication**: endophthalmitis or IOFB with high risk of infection.
- **Advantages**: decreases the chance of PVR and retinal tears.
- **Disadvantages**: higher rate of bleeding, wound leakage and increased difficulty to detach the posterior hyaloids

Delayed vitrectomy

- **Indications** : choroidal hemorrhage and large posterior wound in perforating globe injuries
- **Aim:**
 1. To decrease the risk of intraoperative hemorrhage in acutely inflamed and congested eyes
 2. To allow the cornea to clear and improve intraoperative visualization
 3. To permit spontaneous PVD

Eye Injury Vitrectomy Study (EIVS)

- EIVS : the epidemiology and prognosis of severe eye injury with intervention of vitreoretinal surgery.
- Favorable outcome is defined as anatomically restored eye whose final BCVA is 4/200 or better after 6 months of follow-up.
- 4:1 ratio of boys to girls.
- Closed globe injuries account for 13.5%

EIVS

- No difference in the outcomes of closed and open-globe injuries.
- **Predictive factors of unfavorable outcome:**
 1. Choroidal damage
 2. Large scleral wound
 3. Endophthalmitis
 4. Afferent pupillary defect
 5. Zone of injury
- not associated with the timing of vitrectomy.

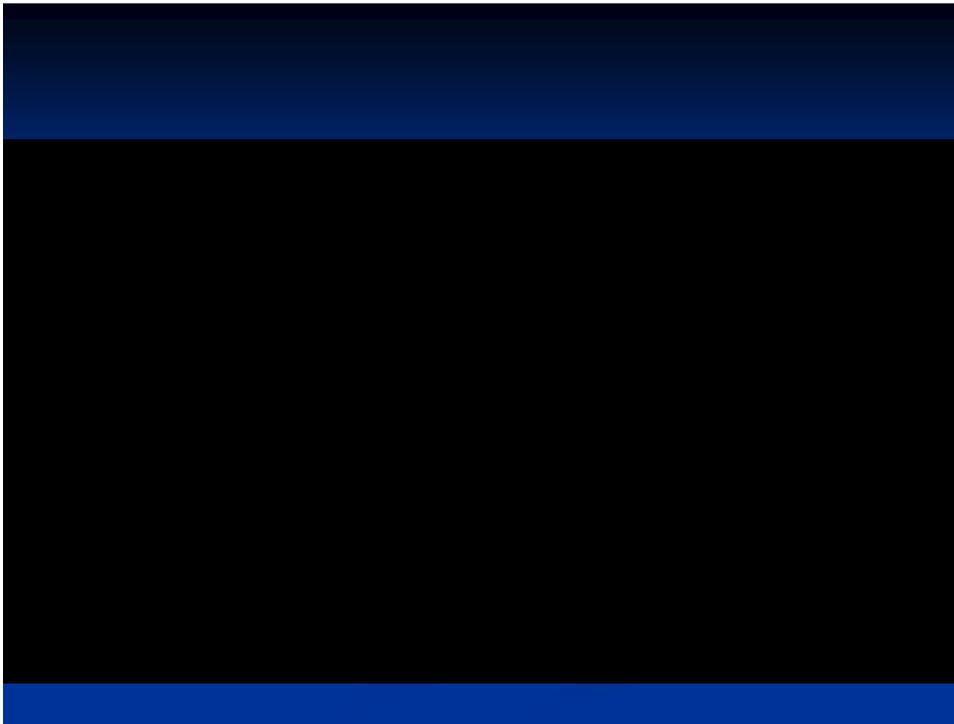
The Problem of Visualization

1. **Temporary keratoprosthesis.**
2. **Endoscopy**
 - Endoscopy allows earlier diagnosis and treatment of occult pathology and requires less time and fewer procedures to implement than the temporary keratoprosthesis.

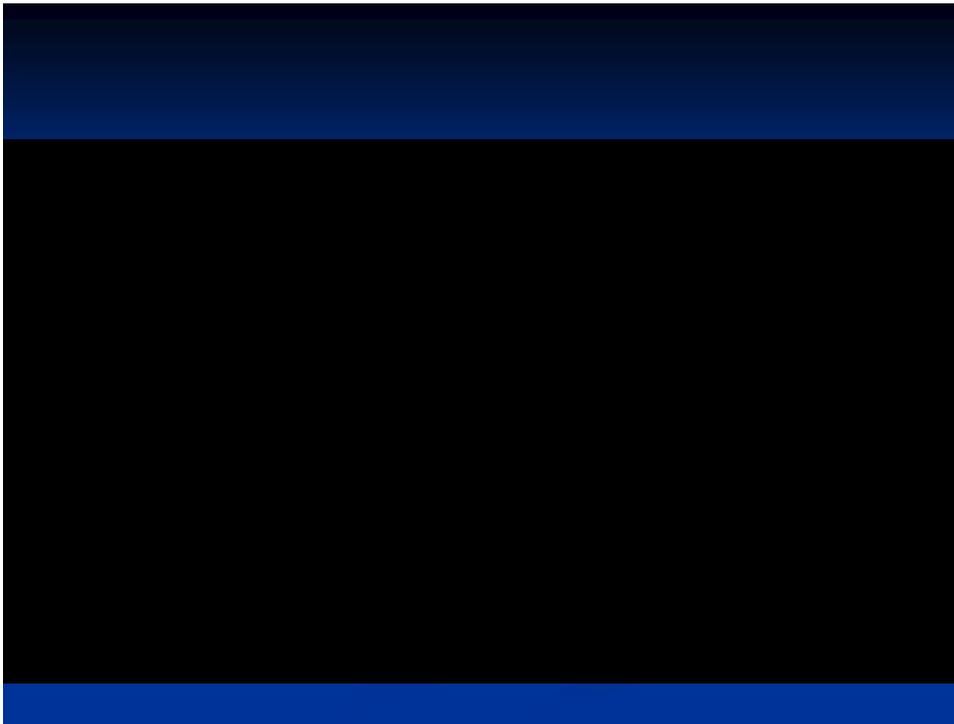
Case 1

IOFB

(Hand Shake technique)

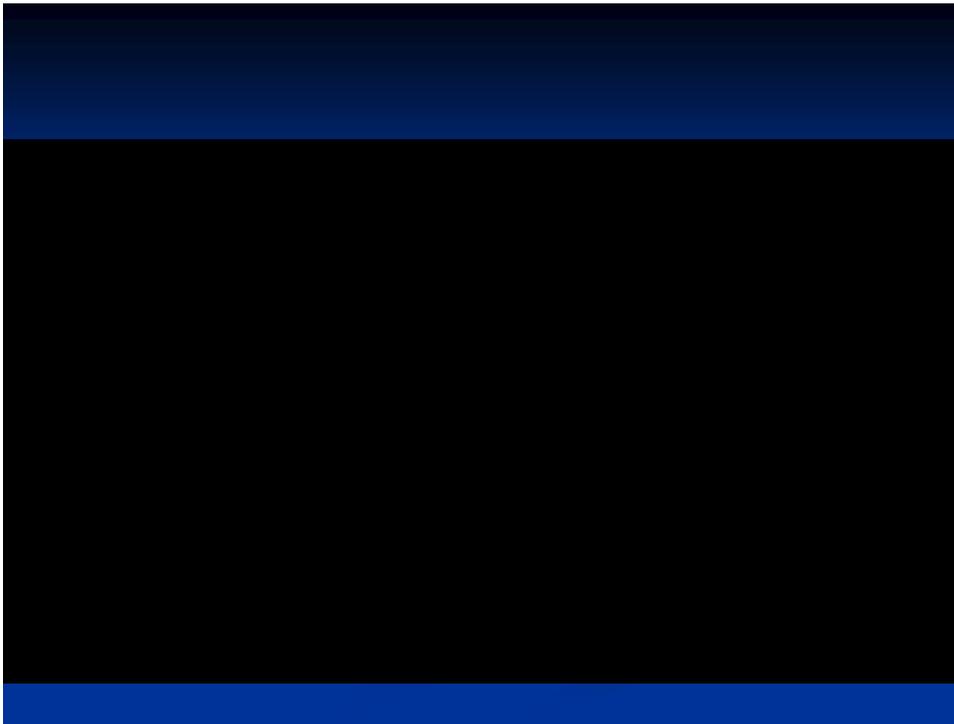


Case 2
IOFB
**Direct removal through
sclerotomy**



Case 3

Traumatic Posteriorly Dislocated lens



Case 4

Traumatic Endophthalmitis (Neglected Rupture Globe)

