Algorithm for Evaluation and Management of the Ruptured Globe in an Adult

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Ruptured globe/open globe = full thickness disruption of sclera or cornea

History

When returning the consult call:
- mechanism of injury
- non-ocular injuries? Ensure patient is stabilized prior to any transfer.
- need for neuro clearance? (head/neck trauma, LOC, decreased mental status)

Exam

Signs:
- penetrating lid injury
- chemosis, bullous subconjunctival hemorrhage
- shallow anterior chamber
- hyphema
- peaked pupil (points towards the wound)
- loss of red reflex (vitreous hemorrhage, retinal detachment)
- prolapsed uveal tissue
- vitreous streaming just posterior to lens (posterior rupture)

- check for APD (traumatic optic neuropathy, visual prognosis)
- consider Seidel test to identify corneal or scleral lacerations (perform with caution)
- if clearly a ruptured globe: do not place pressure on the eye (avoid checking EOMs, IOP, gonio, B-scan), defer further exam until time of surgical repair
- examine the other eye, including dilation

First Steps

- **place Fox shield (no patch) at all times**
- ask about time of last meal; keep NPO
- tetanus immunization (if not up to date)
- bed rest; no bending/lifting/Valsalva
- consent/pre-op paperwork for OR; if patient sedated or unable, attempt to discuss with family member

- IV pain medication PRN
- IV anti-emetics
- IV antibiotics (see below) – do not delay until after repair
- Note: ok to initiate First Steps on the phone with ER/transferring MD

Imaging

CT scan of brain and orbits with thin cuts (1.5mm or less) (**NOT MRI**) to evaluate for:
- intraocular foreign body (IOFB) – if wood suspected, obtain MRI after CT
- orbital fractures
- other head trauma

If CT not immediately available, obtain plain X-ray of orbits pre-operatively and CT (as above) post-operatively.

No IOFB

Antibiotic Guidelines:[Ŧ]
- IV fluoroquinolone x 2-3 days (unless contraindicated – allergy, myasthenia gravis) **OR** IV vancomycin and ceftazidime x 2-3 days (unless contraindicated – allergy, renal function)
- then PO cipro/levofloxacin x 7 days

IOFB

Antibiotic Guidelines:[Ŧ]
- consult retina; intravitreal antibiotics per retina recommendations
- IV vancomycin and ceftazidime x 2-5 days (unless contraindicated – allergy, renal fxn)
- then PO cipro/levofloxacin x 7-10 days

Surgery and Admission

- Surgical repair: Emergent. General anesthesia preferred. Use Jaffe-style eyelid speculum.
- Admission x 2-3 days at least (for IV antibiotics)[Ŧ]

Note: If no view posteriorly, obtain B-scan within 1 week post-op, once eye stabilized, to determine presence of vitreous detachment, vitreous or choroidal hemorrhage, or RD. Perform through closed lids, no undue pressure.