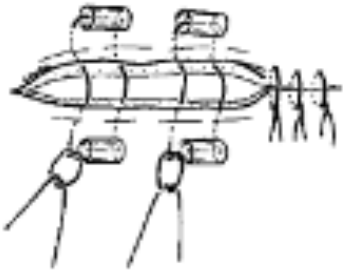
Ocular Emergencies
8/18 Board Review

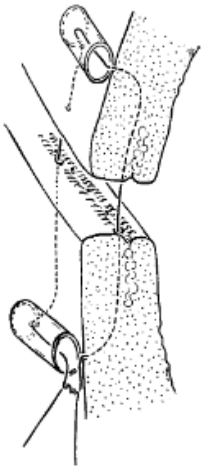
Key Points

1. Luxation of the globe needs immediate protection either by retracting lids over the globe or covering with a lubricating oil
2. Lid lacerations require near-perfect appositional technique
3. Intraocular FB may not need to be retrieved (bullets/pellets)

Luxation of the globe

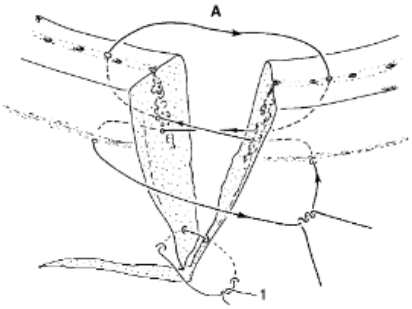
- Luxation: diaplacement of the globe between the palpebral fissures
- Proptosis: forward displacement of the globe
- Exophthalmos: abnormal protrusion of the globe
- Arterial supply typically remains intact, while the venous drainage is severed
    - Results in conjunctival edema and erythema
- Severe damage to the cornea due to lack of tear film, exposure to the environment, and physical irritation of entropined haired palpebral contact
- Therapy
    - Owners to pull palpebrae over the globe or apply salad oil/lubricant and discourage self-mutilation
    - Lateral canthotomy (with or without anesthesia pending mental state)
    - Temporary tarsorrhaphy with mattress sutures and simultaneous globe replacement
        - Do not need to clip hairs around the globe
    - Removal of sutures (medial to lateral) in 10-12 days
        - If evidence of re-luxation, leave remaining sutures in place for an additional 1-2 weeks
        - Abx, anti-inflammatories, atropine if needed post suture removal





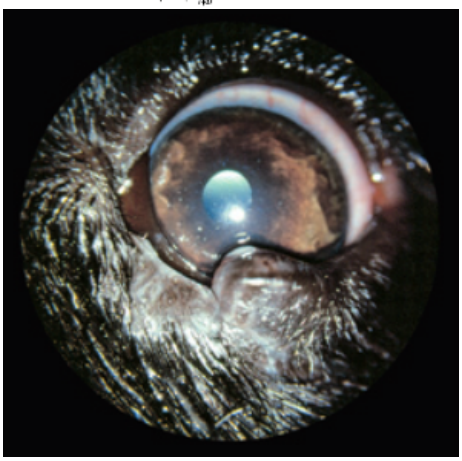
- Tearing of the ocular muscles and damage to the optic nerve is not uncommon
    - Do not try to find and repair torn ocular muscles as likely will not be possible and may result in more trauma
- Prognosis for vision is favorable if luxation present <1-2h (<15m for Pekingese)

- Complications that may lead to blindness, pthisis bulbi
    - Avulsion of the medial extrinsic muscles or the optic nerve
    - Retinal detachment
    - Hyphema
    - Contusion of the globe
- If very severe damage to the muscles and the optic nerve is present, direct enucleation is usually the best solution



Lid Laceration

- If full-thickness, the wound will increase in size due to contraction of the orbicularis oculi mm
- Near-perfect apposition is required
- General anesthesia, thorough irrigation of the wound margins and globe
- Minimal debridement indicated due to already scant amount of tissue present
- Figure-of-eight suture pattern, using 5-0 or 6-0 non-absorbable monofilament with a tapered needle
- 1-2mm from lid margin and exiting via the meibomian glands
    - Absorbable only if aggressive patient or significant risk with anesthesia
- Conjunctival lacerations seldom need surgical repair
- Abx (topical or systemic)



Penetrating Ocular FB

- Commonly thorns, splinters, claws or teeth
- If corneal perforation present, then Ophthalmologist referral is warranted for possible object retrieval, corneal suturing and treatment of uveitis
- If corneal wound is not present (older lesion), consider treatment for uveitis only

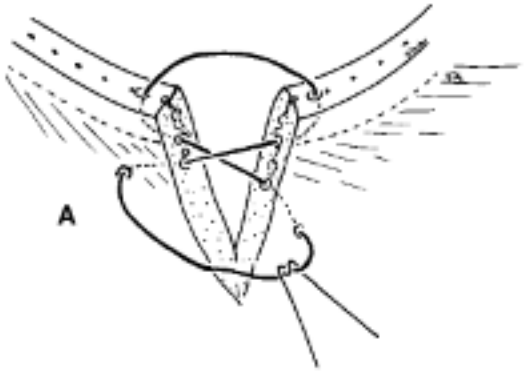
Chemical burns

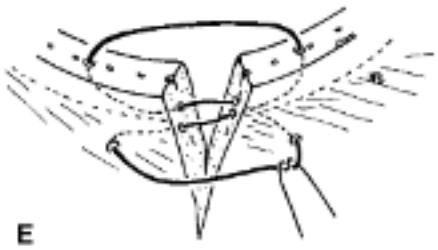
- Acids and alkalis, such as battery acid, detergents, and quick-lime, can cause very severe corneal burns
- Profuse, diffuse edema of the cornea
- Conjunctiva is edematous and has hemorrhagic defects
- Acids are slightly less dangerous because they cause precipitation of protein which hinders a deeper penetration into the cornea
- Alkalis penetrate quickly and cause severe damage to the cornea and the deeper structures
    - Results in irreversible damage to those structures involved, leading to complete scarring of the cornea and irreparable damage to the anterior uvea

- Immediate irrigation the eye with liberal amounts of lukewarm tap water, or any other water available
    - *******The first seconds/minutes are the most important
- With alkali burns, vinegar or boric acid solutions may be useful
- In clinic: apply local anesthesia and then irrigate the eye for 5–10 minutes with lukewarm 0.9% NaCl or with an EDTA solution
    - Examine the conjunctival sac for possible residues of the injurious material
- Rx abx , atropine eye drops and (if fluorescein staining is negative) topical steroids

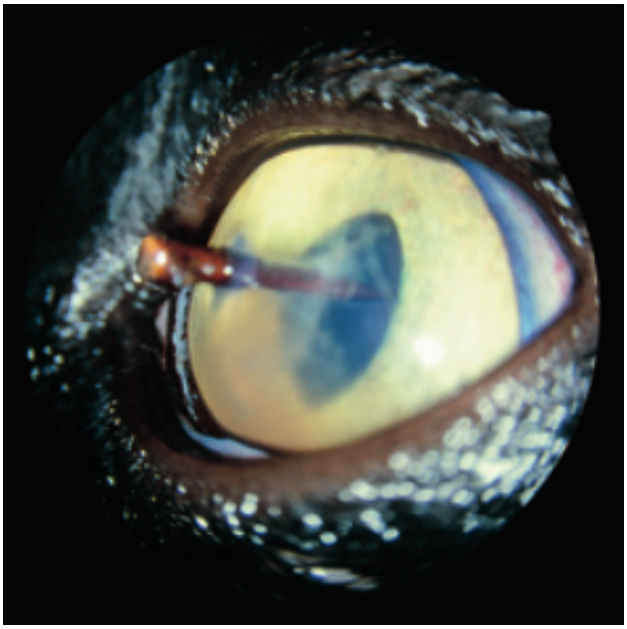
Questions

1. What are the errors with each of the following lid laceration repairs?

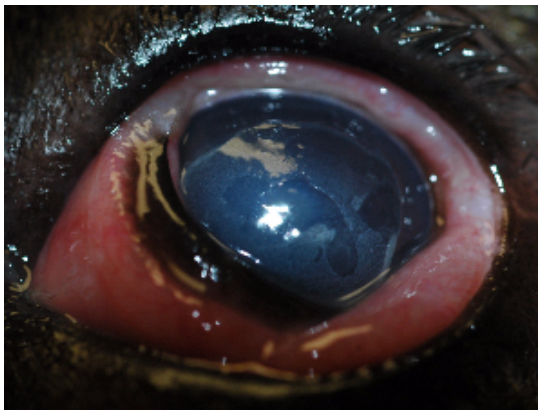




2. What is your recommendation for this patient?

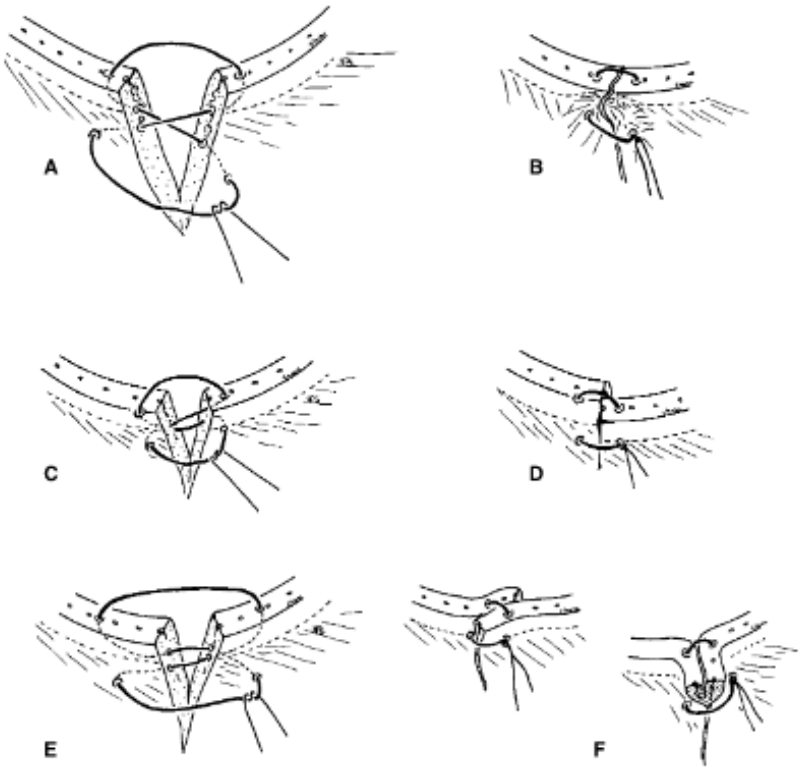


3. A patient (adult mc mixed breed dog) presents to you with a history of acute onset eye abnormalities following unsupervised time in the garage. His looks like this:
    a. What are the abnormalities present?
    b. What do you suspect happened?
    c. What are your recommendations for treatment?

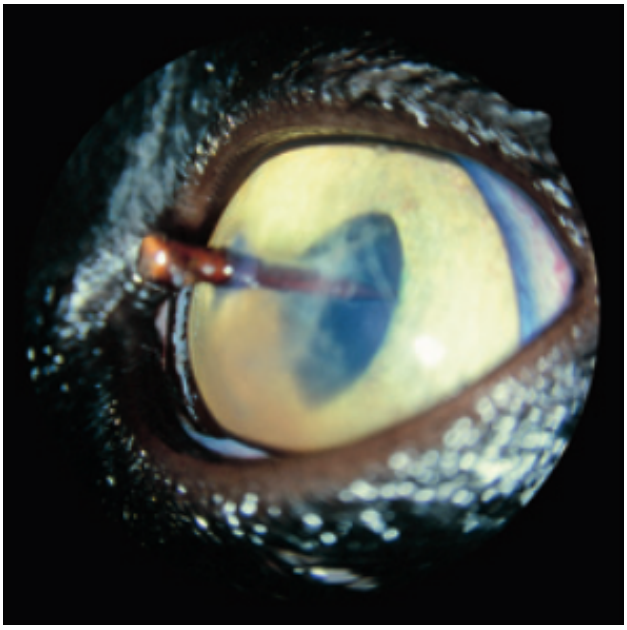


Answers

1. What are the errors with each of the following lid laceration repairs?
    a. Unequal distance of FO8 suture from lid margin
    b. Unequal distance of suture from globe
    c. Suture too far from wound margin



2. What is your recommendation for this patient?
    a. Referral to an Ophthalmologist for anesthetized removal and immediate suturing of corneal wound



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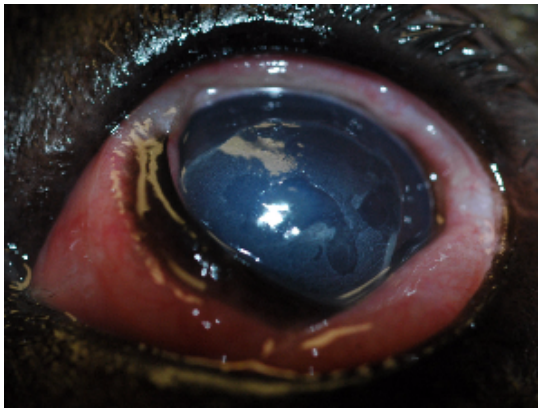

    a. What are the abnormalities present?
        i. Chemosis- severe
        ii. Corneal edema
        iii. Corneal ulceration
        iv. Palpebral swelling
        v. Conjunctival hyperemia
        vi. Epiphora
    b. What do you suspect happened?
        i. Chemical burn
    c. What are your recommendations for treatment?
        i. Topical anesthesia
        ii. Copious irrigation with 0.9%NaCl
        iii. Fluorescein dye test
        iv. Topical anti-inflammatories
        v. Atropine topical