

# Ocular Injuries

Ocular injuries in MWDs in deployed settings will likely include irritant conjunctivitis, corneal ulceration, eyelid lacerations, and penetrating foreign objects. Clinical signs of ocular and periocular injury include eyelid lacerations, swelling of the periorbital tissues or conjunctiva, exudate in the conjunctival sac or on the eyelids, blepharospasm, intense redness of the conjunctiva, epiphora, photophobia, and rubbing the eye. Penetrating foreign objects may be present.

## Evaluations of Ocular Injuries

1. Sedate the MWD as needed to allow detailed but safe examination of the affected eye (See [Chapter 16](#)).
2. Flush the affected eye and adjacent tissues with copious amounts of sterile saline or ophthalmic rinse.
3. Topically anesthetize the affected eye to facilitate examination, using 3-4 drops of topical ophthalmic anesthetic solution (e.g., proparacaine) on the cornea.
4. Remove exudate from the affected eye, if present, using saline-soaked cotton balls.
5. Examine the conjunctival area for foreign objects (e.g., particles, grass, plant seeds, thorns).
6. Stain the cornea of any affected eye using fluorescein stain to evaluate for ulceration.
7. Apply stain to the cornea, allow stain to dwell for at least 1 minute, and then rinse copiously with sterile saline or ophthalmic rinse.
8. Examine the eyes for symmetry, anisocoria, abnormal PLRs, or lens abnormalities.
9. While specific treatment of these problems is beyond the scope of practice for HCPs, the presence of these findings may suggest additional injury (e.g., TBI), that may need to be managed by the HCP.
10. Apply a bucket to the dog's collar to prevent self-trauma in ALL cases of ocular or periocular injuries in MWDs until the problem has resolved (See Figure 21 and Figure 22).

## Treatment of Ocular Injuries

### 1. Irritant conjunctivitis

- Noted by varying degrees of conjunctival hyperemia, mild-to-moderate chemosis, and absence of other ocular signs.
- Flush eye and adjacent tissues with sterile saline/ophthalmic rinse 1-2 times daily.

- Apply bland ophthalmic antibiotic ointment (preferable) or solution (e.g., bacitracin-neomycin-polymyxin), q8h for 5 days.
- If corneal ulceration is present, DO NOT USE topical corticosteroids, as the risk of worsening the ulcer is high.
- If corneal ulceration is not present, the ophthalmic ointment can include topical corticosteroids. The eye MUST BE examined daily and fluorescein stain applied daily to ensure ulceration has not developed. Discontinue use of topical ophthalmic corticosteroids if any evidence of corneal ulceration is noted.

## **2. Corneal ulceration**

- Noted by varying degrees of conjunctival hyperemia, mild-to-moderate chemosis, and presence of fluorescein dye uptake on the affected cornea.
- Flush eye and adjacent tissues with sterile saline/ophthalmic rinse 1-2 times daily.
- Apply bland ophthalmic antibiotic ointment (preferable) or solution (e.g., bacitracin-neomycin-polymyxin), q8h for 5 days.
- DO NOT USE topical corticosteroids, as the risk of worsening the ulcer is high.

## **3. Penetrating or embedded foreign object.**

- Noted by the presence of a foreign object on the surface of or embedded in or through the cornea, with varying degrees of corneal edema. If the injury is chronic, neovascularization of the cornea may be present.
- Flush the eye and adjacent tissues with copious amounts of sterile saline/ophthalmic rinse 1-2 times daily.
- If the object is on the surface of or embedded on the outer cornea, attempt cautious removal after topically anesthetizing the eye.
  - If the object is removed, apply topical bland ophthalmic antibiotic ointment (preferable) or solution (e.g., bacitracin-neomycin-polymyxin) to the affected eye, q8h for 5 days.
  - DO NOT USE topical corticosteroids, as the risk of worsening the injury is high.
- If the object cannot be removed from the surface of the cornea, or appears to penetrate the cornea or globe, do not attempt to remove the object.
  - Apply topical bland ophthalmic antibiotic ointment (preferable) or solution (e.g., bacitracin-neomycin-polymyxin) to the affected eye, q8h for 5 days.

- DO NOT USE topical corticosteroids, as the risk of worsening the injury is high.
- Do not attempt to bandage the eye/head. The anatomy of the canine head is such that attempts to bandage the eye generally are unsuccessful and bandages tend to worsen ocular injuries. Although it is counterintuitive, leave the affected eye unbandaged.
- Evacuate the MWD to a veterinary facility on an URGENT basis once feasible.

#### 4. Eyelid and peri-orbital lacerations.

- Noted by the presence of lacerations or abrasions affecting the peri-orbital tissues.
- Deeply sedate or anesthetize the MWD (See [Chapter 16](#)).
- Close subcutaneous tissues in 1 or 2 layers, using absorbable 3-0 or 4-0 monofilament simple interrupted sutures.
- Close the skin using nonabsorbable 3-0 nylon.
- Apply topical bland ophthalmic antibiotic ointment (preferable) or solution (e.g., bacitracin-neomycin-polymyxin) to the affected eye, q8h for 5 days.

## Ocular Injury References

Hollingsworth, SR and Holmberg, BJ. Ocular disease in the intensive care unit. In: Small Animal Critical Care Medicine, Silverstein DC and Hopper K, eds. Saunders/Elsevier, St Louis, MO, 2015;815-820.