

## Equine Standing Ophthalmic Surgery

### 1. Overview of standing ophthalmic procedures and complexity

- I Minimally Invasive-
  - a. Aqueous paracentesis, intravitreal injections, episcleral, CSA implant, diamond burr debridement
  - b. Quick & minimally invasive
  - c. No draping
  - d. No retrobulbar block
- II Simple
  - a. Enucleation, 3<sup>rd</sup> eyelid excision, eyelid mass removal
  - b. Laser treatment- photodynamic therapy, iris/uveal cyst ablation, transscleral cyclophotocoagulation
  - c. More advanced instrumentation
  - d. Longer duration
  - e. Retrobulbar block & local anesthesia
  - f. Sterile draping
- III Advanced
  - a. Superficial Lamellar Keratectomy (SLK), grafting procedures, conjunctival, amnion, intrastromal (corneal) injections
  - b. Suture materials often required
  - c. Precise tissue dissection
  - d. Microsurgical skills - essential
- IV Complicated
  - a. Suprachoroidal CSA implantation, lamellar keratoplasties (DLEK, PLK, CCT), gonio-shunt placement
  - b. Highly specialized
  - c. Requires significant experience/expertise, patience and intuition
  - d. Advanced microsurgical skills necessary

### 2. Pre- Operative Considerations

- Patient Selection
  - a. Diagnosis
  - b. Procedure?
  - c. Category (I,II,III, IV)
- Signalment , Vitals, & Demeanor
  - a. Consider age, breed, excitability
  - b. Most horses are amenable to standing ophthalmic surgery
  - c. Fractious or uncooperative horses are not good candidates but there are always exceptions.
- Prepare for the unexpected, Be ready for anything
  - a. Inform owners of risks involved in procedure
  - b. Assistant to manually restrain horse and surgical assistant (ideally, these are two different individuals)

### 3. Sedation

- Bolus Injections of IV Detomidine/Butorphanol
  - a. Detomidine 0.01-0.02 mg/kg
  - b. Butorphanol 0.005-0.01mg/kg
- IM Butorphanol 0.02-0.04 mg/kg
- SQ Detomidine for exceptionally difficult horses.
  - a. Give 30 min prior to surgery

### 4. Technician's Role

- Anticipate complications and surgeon's needs
  - a. Plan ahead of time.
  - b. Gather all surgery items, drugs, and instruments necessary
  - c. Be as prepared as possible for procedure.
- If horse goes down
  - a. Remain calm
  - b. Check for injuries
  - c. Decide with surgeon if able to proceed or not
- Make sure horse is at an adequate level of sedation.
  - a. Watch for ear twitching and head movement
  - b. Re-dose sedation as necessary

### 5. Head Positioning

- Safe and quiet location
- Stable head support
- Cushions or other soft material - best
  - a. Horse pillow/pads
  - b. Hay bales/wrapped shavings
  - c. Trash can w/towels
- Might have to be creative if in the field...

### 6. Local Anesthesia/Analgesia

- Eyelid Blocks/Nerve Blocks
  - a. Palpebral (motor)
  - b. Frontal (sensory)
  - c. 2% Mepivacaine s.c. (1 ml palpebral & 0.5 ml frontal)  
25g needle
  - d. No prep<sub>rd</sub>
- Line block or 3<sup>rd</sup> eyelid block
  - a. 2% Mepivacaine  
E.g., enulceation, eyelid mass removal, eyelid laceration, etc.
- Topical anesthesia
  - a. 0.5 % Proparacaine HCL 0.5 ml
  - b. Pull up in 1ml syringe with 25g needle broken off
- Retrobulbar Block
  - a. Supplies- clean/sharp #40 clipper blade, Prep: dilute baby shampoo & dilute iodine solution (1-5%), Dry as needed with Sterile gauze

- b. Cat. II-IV: Clip (#40 clipper blade) generous margin around surgical area.
    - c. “Dirty” Prep with dilute baby shampoo & iodine solution (1-5%)
    - d. “Sterile” Prep- irrigate cornea, conjunctiva, and lids with dilute iodine, wipe lid margins, conjunctiva, 3<sup>rd</sup> eyelid with iodine soaked CTA.
  - Complications
    - a. Incorrect needle placement
    - b. Toxic reaction to local anesthetic (usu. Lidocaine)
  - Going Down in the stocks
    - a. Older horses temporarily become GA cases
    - b. Complete procedure and recover
7. General Anesthesia
- Advantages
    - a. Provides complete immobilization
    - b. Consistent head positioning
    - c. Surgeon able to use operating microscope
  - Disadvantages
    - a. Increased risk of injury/death
    - b. Increased recovery time
    - c. Increased duration of hospital stay
    - d. Increased cost
    - e. Increased number of personnel/staff involved
8. Standing Surgery
- Advantages
    - a. Less stressful for the horse
    - b. Less personnel/staff involved
    - c. Recovery time is minimal to NONE
    - d. Less costs involved
    - e. Decreases hospital stay after surgery
  - Disadvantages
    - a. Patient movement throughout procedure
    - b. Patient may need subsequent doses of sedation
    - c. Risk of going down in the stocks
9. Questions??