

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, 3rd 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_{rd}
- Line block or 3rd 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, 3rd 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??