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| **Four Point Retrobulbar Nerve Block** | |
| **Uses** | * Used for peri-operative analgesia for enucleation surgery which is performed standing in cattle. * Retrobulbar injection of local anesthetic desensitizes the structures of the eye and paralyses the external ocular muscles, providing a globe which is anesthetized, immobile and central. |
| **Restraint** | Crush, halter with head tied up  Occasionally sedation with Xylazine or Detomidine is required in fractious animals, but this can result in recumbency. |
| **Materials Required** | Four (4) 19 gauge 3 ½ inch spinal needles – curve by hand to approximate curvature of the bony orbit. These needles become incredibly blunt if you try to re-use them.  10 ml syringe  Procaine or Lidocaine are usually used. |
| **Site Preparation** | Clip peri-ocular skin. Prepare skin and conjunctival sac with aqueous povidone-iodine solution. |
| **Procedure** | 1. Introduce a 19 gauge 3 ½ inch curved spinal needle through the skin laterally, medially, dorsally and ventrally (if the eye was a clock face at 12, 3, 6 and 9 o’clock) either through the eyelids or via the conjunctival fornices, to a depth of 7-9 cm. 2. The needle is directed away from the eyeball until the point is beyond the globe and then turned inward to penetrate the muscle cone with the needle running along the bony orbit. 3. When no blood is obtained after aspiration, 5-10ml of local anesthetic is deposited behind the eye at each site. 4. Protrusion of the eyeball is suggestive of successful blockade. |
| **Advantages** | * Provides excellent peri-operative analgesia. * The use of four sites makes a successful blockade more likely than using only one site as occurs with the Peterson block |
| **Disadvantages** | * Risk of globe trauma if performed incorrectly. * Risk of trauma to local tissues. * Risk of initiation of oculocardiac reflex. |
| **Potential Complications** | * Incorrect technique may result in globe perforation, local tissue trauma, hemorrhage. * Rapid injection of a large volume of local anesthetic solution, especially if cold, can result in stimulation of the oculo-cardiac reflex. * Standing animals, especially if already sedated, may become recumbent as heart rate and then cardiac output falls. * Inadvertent injection of local anesthetic agent into a blood vessel could lead to sudden death. * Inadvertent injection of local anesthetic agent into the cerebrospinal fluid surrounding the optic nerve could lead to collapse, seizures and respiratory arrest (followed by cardiac arrest) due to brainstem anesthesia. * Although the Peterson block Peterson block is technically more challenging, the risk of these complications is less, but it is also said that the success rate is less. |