Key Points

- Castration may be the most common surgical procedure that large animal practitioners are called upon to perform on camelids.
- Castration may be performed in the standing or recumbent patient.
- The castration site may be left open to heal by second intention or closed for primary healing.
- Cryptorchidism is occasionally seen in camelids.

Castration

A good protocol for standing castration is 0.1 mg/kg butorphanol IV followed by injection of local anesthetic directly into the testicles. For more intractable animals you may use 0.1 mg/kg xylazine IV in combination with 0.05 mg/kg butorphanol IV. The combination increases the chance that the animal will become recumbent. For general anesthesia with recumbent castration, 0.25 mg/kg xylazine IV and 2.5 mg/kg ketamine IV usually works well. Alternatively, one may use a combination of 0.44 mg/kg xylazine and 4.0 mg/kg ketamine administered IM. IM administration may require 15 minutes to achieve recumbency. Local anesthetic in the testicles may still be used if the anesthetic plane is not adequate.

Standing castration is best performed with camelid chute restraint. Lacking this, other methods of preventing movement would include securing the animal’s head to some stationary object and providing lateral stability in the form of a wall, doorway, or assistant. The testicles should be held steady within the scrotum and incisions should be made approximately 1 cm lateral to the median raphe over each testicle. The incision is continued until the vaginal tunic is exposed but not incised. The castration is more easily completed if the vaginal tunic is not opened. The scrotal fascia and fat is bluntly dissected from the cord as tension is applied to the testicle. At this point the cord may be either crushed with emasculators or ligated with absorbable suture. Many practitioners find that a ligature achieves better hemostasis than emasculators. Any fat that protrudes from the scrotal incision is removed. The scrotal incision is lengthened if needed to assure good drainage. Post-operative exercise decreases swelling. One should also be sure the surgical site remains relatively clean and free of flies.

If the animal lies down during an intended standing castration, one can simply perform the local block and continue with the procedure. Many practitioners will position the camelid in lateral recumbency; however, some prefer a frog-legged position that has the hindquarters of the animal in nearly dorsal recumbency. This position provides added restraint and is critical if the prescrotal incision and primary closure technique is being performed. Some practitioners also find it helpful when performing standard recumbent castrations. Other than positioning, the recumbent castration is no different than the standing technique when the scrotal incision is left open to heal by second intention.

Castration by use of a prescrotal incision and primary closure has been described. This technique is useful if immediate post-operative aesthetics is very important to the owner or if control of flies around the incision is a management concern. The primary closure requires less than 10 minutes and should not require additional anesthetic. The incision is made 3 cm on either side of the ventral midline approximately 15 cm cranial to the scrotum where the testicle
can be easily displaced cranially. The skin and subcutaneous tissue is incised to expose the vaginal tunic. The cord is stripped of fascia and ligated as with the other techniques. It is imperative to use ligatures to assure absolute hemostasis. The contralateral testicle is then pushed cranially and deep to the penis to be exteriorized through the initial incision with the aid of blunt dissection. The testicle is then ligated and excised in the same manner as the first. The incision is closed using 3-0 absorbable suture in simple continuous subcutaneous then subcuticular layers. The animal should be exercised as with the standard castration. Local swelling tends to be less with the primary closure than with the standard castration left open to heal by second intention.

Summary

Accurate body weights must be determined any time camelids are given drugs for sedation or general anesthesia. Castration of camelids is one of the most common surgical procedures performed in this species. Standard castration can be safely and efficiently done in a standing or recumbent animal. Prescrotal castration and primary closure is a useful technique if owner demand for aesthetics or fly control management is a concern. Cryptorchidism is uncommon in camelids but does occur.

References