

# CASTRATION OF CAMELIDS: WHEN, WHERE, WHY

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## Preface by Erik van Shreven Bv.Sc.

There is a school of thought that castration of alpaca should not be carried out until the fighting teeth have erupted. This normally occurs sometime between 18 months and three years and also indicates a corresponding close of growth plates. Therefore, it has been assumed that castrating alpaca before the growth plates have closed could result in abnormally large alpaca. However, actual research and evidence of this happening has been elusively difficult to find and many alpaca have been castrated in New Zealand before 12 months without record of any adverse effects. Castration of alpaca prior to 12 months is a far simpler procedure than when attempted at an older age. The risk of fatty tissue escaping through the incisions is dramatically reduced if animals are castrated younger and this can be further minimised by the blunt dissection of fat at the incision site and the application of Aerotet Forte on to the incision. There are a large number of methods of castration from the use of local anaesthetic only, to the completely anaesthetised animal with full surgical removal and closure. The best review of procedures can be found here:

**P**racticing veterinarians offering service to clients owning camelids are routinely asked for advice on castration of pet quality males. Superficially, this might appear to be a simple question, but there has been significant debate on this issue. At the center of the debate is a concern for musculoskeletal maturation of males after prepubertal castration. Breeders would prefer to castrate males at 4 to 6 months old so that they may be sold as pets soon after weaning. Veterinarians would prefer to see camelids castrated at 18 to 24 months after they have reached skeletal height maturity.

## EFFECTS OF PREPUBERTAL CASTRATION:

Castration of males at an early age has been shown in several species to delay the closure of long-bone physes. Therefore, geldings may develop a tall, straight legged stature (particularly of the hind limbs). In llamas, lateral patellar luxation and early onset of degenerative osteoarthritis of the stifle joints have been seen as complications of this posture. Historical data usually reveals that affected males were castrated at an early age (e.g. 4 months).

## CASTRATION TECHNIQUES:

Basically, any castration method that has been used in other livestock and pet animals has been done successfully in camelids. However, two methods have become standards of practice: scrotal castration (similar to horses and swine) and pre-scrotal castration (similar to canine). I prefer to administer tetanus toxoid vaccination {At least make sure their vaccinations are current} and procaine penicillin G (22,000 U/kg, q24h x 3 d) to each animal. All food should be withheld for 12 hours prior to castration in case general anesthesia or heavy sedation becomes necessary.


**Scrotal castration** can be done with the animal standing or recumbent (I prefer recumbent). For standing castration, the camelid is sedated with xylazine (0.2 mg/kg body weight, IM) and butorphanol (0.1 mg/kg, IM) and an epidural is administered (2 ml, 2% lidocaine; or 10 mg xylazine in 2 ml sterile normal saline). The scrotum is prepared for aseptic surgery and, if an epidural was not used, 2 ml lidocaine is injected as a line block along the median raphe. A 2 cm incision is made on either side and parallel to the median raphe along the ventral most aspect of the scrotum. Each testicle is removed and excised either using an emasculator or after transfixation ligation with No 0 chromic gut (I prefer transfixation ligation). Topical antiseptic and fly spray are applied. For recumbency, xylazine (0.2 mg/kg, IV), butorphanol (0.1 mg/kg, IV), and ketamine (1 to 2 mg/kg, IV) are used.

**Pre-scrotal castration** is done with the animal recumbent. Strict aseptic technique is critical to ensure that infection of the castration site does not develop. A 2 cm incision is made on ventral midline immediately cranial to the ventral base of the scrotum. Each testicle is removed through this incision and excised after transfixation ligation. After hemostasis has been achieved, the skin incision is closed using a subcuticular or subcutaneous suture pattern. I prefer not to place skin sutures so that removal of sutures is not necessary.



## POSTOPERATIVE MANAGEMENT:

I recommend that camelids be confined to a small pen for 24 to 48 hours after scrotal castration. Confinement is not needed after pre-scrotal castration. Owners should monitor the incision for bleeding, swelling, exudative discharge, fly infestation, difficulty urinating, and any other problems. Although complications are uncommon, the consequences of postoperative problems can be devastating to the owner.

"I should say that we see a difference between alpaca and llamas. Alpacas castrated after 12 months do not seem to have changes in their skeletal development and do maintain great fibre. Castration at less than 12 months is hard on their development. This issue here is development of early onset osteoarthritis or patella luxation. If you are making males as terminal livestock for fibre production only this is probably an acceptable risk, but if they are likely to be maintained for many years, castration at 12 months or older is preferable. Alternatively in llamas, castration must be performed after 18 to 24 months to avoid negative effects on skeletal development". 

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