KALRO
Kenya Agricultural & Livestock Research Organization

KCSAP
Kenya Climate Smart Agriculture Project

CASTRATION OF LIVESTOCK FOR CONTROLLED BREEDING

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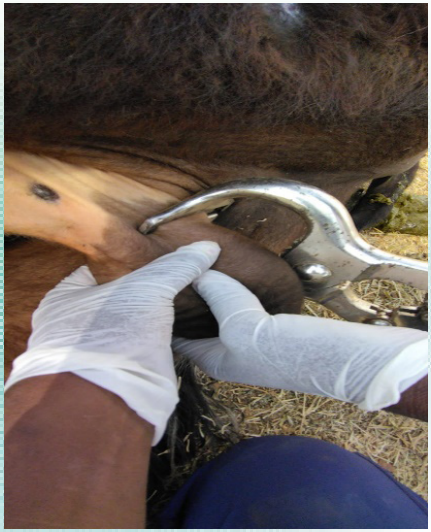


Introduction

Castration refers to the rendering male animals sterile (unable to reproduce). The approach and method used depends on the anatomy of the species involved. For example, the bull and the ram/buck have pendulous scrotum as opposed to the boar thus making the castration approach different.

Reasons for castration

- **Fattening**- once castrated, such males gain weight as well as fat cover since they remain inactive in mating. These can later be sold for slaughter.
- **Controlling breeding**- based on selection, male animals that are not chosen for breeding can be castrated to avoid incidences of unwanted mating.
- **Managing odours in meat (e.g. in goats and pigs)** - castrated boars/bucks have less odour in their meat compared to intact males.

- **Reduce aggressiveness**- castrated animals are docile compared to intact males.
- **Aesthetic reasons** (beauty).

Castration methods

The approach and method of castration may vary across species. The method may be physical, chemical or hormonal but physical methods are the most common.

Cattle and goats/sheep

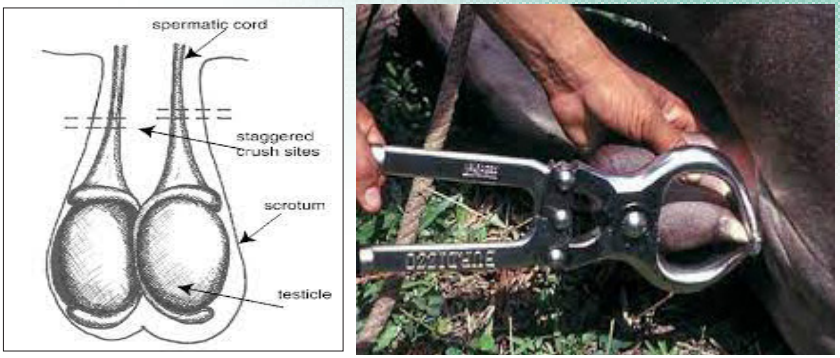
In these species, two methods are commonly used:

- ***Closed castration (most common)*** - this is done using an equipment called emasculatome (burdizzo). This non-invasive procedure (bloodless) involves crushing of each of the spermatic cord independently at the level of scrotal neck. In cattle it is done between the age of 4-8 weeks.

Things to consider

i. Care should be taken to ensure the spermatic cords do not slip and fail to be crushed.

ii. Avoid crushing the entire scrotal neck which may cause it to slough off. This method is simple and less risky.



The crushing spot (left) and closed castration in a bull (right)

- ***Open castration (less common):*** Involves surgery to remove the testicles. It requires specialized personnel to undertake and has the risk of evisceration, post-operative bleeding and infections. In cattle, it is done at very young calves (below 8 weeks). Administration of tetanus toxoid (in goats and sheep) and fly repellent is key in the prevention of tetanus and fly strike.

  Note: Castrating goats younger than 6 months predisposes them to urethral obstruction by kidney stones (calculi).

- ***Elastrator and rubber ring***: This method is used in very young lambs (1-7 days). Older ones can be castrated at 2 months using a burdizzo.Tetanus toxoid is administered to avoid infection and death of the kids/lambs. Also, fly repellent may be applied on the wound to prevent fly strike.

Procedure

1. Select a rubber ring and ensure the pins of the elastrator are fully closed (the handles of the elastrator will be fully open).
2. Roll the rubber ring over the pins of the elastrator until the ring is at the base of the pins).
3. Gently grasp the scrotum near the abdomen between the thumb and finger of your non-dominant hand then gently press to move both testes down into the base of the scrotum.
4. With your dominant hand, close elastrator handles to open the pins to their full capacity to open/stretch the rubber ring while still securing the testes within the scrotum with your other hand.
5. With the free end of the elastrator pins pointed towards the scrotum, slide the elastrator and ring over the scrotum towards the lamb's abdomen until the ring has passed all the way over both testicles.
6. Release the elastrator handles to close the ring around the scrotum then palpate that both testicles are in the scrotum.
7. Carefully ease/roll the rubber ring off the pins of the elastrator

and close the handles of the elastrator to open the pins and slide the elastrator off the scrotum.

Things to consider

i. Always check that both testicles are in the scrotum below to the ring and check that neither of the nipples has not been accidentally included. If either of the above is incorrect, the ring will need to be removed using a curved scalpel blade or a pair of scissors.

ii. Always ensure the bond between the ewe and lamb has been established before doing castration.

Pigs

Castration in pigs can be done early (4-14 days) but most farmers chose to do it at 3-6 weeks of age. The anatomy of the pig scrotum is different from that of a bull/ram and therefore an emasculatome (burdizzo) cannot be used. The semi-open technique often referred to as closed technique is used in this species.

A piglet with scrotal hernia before castration (left) versus after castration and herniorraphy

Procedure

1. Thoroughly clean the scrotal area using an antiseptic such as iodine.

2. Cut open scrotal skin directly above the testis but leave the inner thin layer covering the testis intact.
3. Pull gently the spermatic cord to expose considerable length of the cord.
4. Wrap the spermatic cord around your index finger and gently but steadily apply traction to tear it (this prevents bleeding).
5. Alternatively, after exposing an appropriate length of the cord, scratch gently but repeatedly (to prevent bleeding) until the cord tears.
6. Repeat the same for the other testis.
7. Apply antibiotic spray onto the incision areas to prevent fly strike and infection.

What to consider

i. Avoid cutting (incising) open the inner layer covering the testis. This may lead to evisceration (internal organs such as intestines coming out via that opening).

ii. Always check for inguinal/scrotal hernia before castration to avoid evisceration.

Complications resulting from castration

- **Evisceration**- this complication happens in cases where open castration has been done or excessive force has been applied while tearing the spermatic cord. It is also common in cases of castration of animals, which have a hernia.

A case of evisceration in a piglet

- Bleeding **(Haemorrhages)** can happen if proper measures to control it were not effective. To achieve that, use of ligature (for open castration in cattle and buck/ram), traction and scarification is necessary. It is important to monitor animals post castration to ensure that there is no bleeding that can lead to death.
- **Infection:** In some instances, the castration wound may become infected especially if the procedure was done in an unhygienic manner or exposed to wet unhygienic conditions. It is important to constantly monitor the wound and initiate treatment where necessary.
- **Excessive swelling (edena)**: The scrotal skin is somehow sensitive and therefore after castration some animals may exhibit excessive reaction. Constant monitoring and administration of anti-inflammatories maybe considered in such cases.

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