

LARGE ANIMAL CLINICS

CLINICAL REPORT

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“Castration of piglets”

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Summary

The castration process is necessary to perform in the piglets not wanted for breeding. Although it can be stressful and painful for the animals, therefore we should do it as quick as possible to mineralize the stress. The age of the piglet is also crucial; we should perform the procedure in the earliest age possible.

Definition of castration

Also referred as: gelding, neutering, orchiectomy, orchidectomy, and oophorectomy is any action, surgical, chemical, or otherwise, by which a male loses the functions of the testes. Castration is commonly performed on domestic animals not intended for breeding. Domestic animals are usually castrated in order to avoid unwanted or uncontrolled reproduction; to reduce or prevent other manifestations of sexual behavior such as territorial behavior or aggression (eg. fighting between groups of entire (uncastrated) males of a species); or to reduce other consequences of sexual behavior that may make animal husbandry more difficult, such as boundary/fence/enclosure destruction when attempting to get to nearby females of the species.

The reasons of castration

Castration of male pig livestock intended for meat production is a long standing management practice. In North American swine production, castration is essentially universal and only a select few male pigs are left intact as potential breeder boars. There are two primary reasons for feeding out barrows rather than boars in pork production. The first is behavioral. As the age and body size of sexual maturity is reached, boars tend to be more aggressive with pen mates and more difficult to handle than barrows of similar age and weight. The second and perhaps most important reason is that meat from boars that are nearing sexual maturity (about 100kg. body weight) has high potential for an odor and flavor problem commonly called "boar taint." Boar taint refers to objectionable odor and flavor characteristics that many consumers detect in cooked pork from intact males.

Boar taint in pork is associated with two compounds produced in the live animal: androstenone and skatole. Androstenone is a steroid produced by the testes and concentrated in the salivary glands where it is converted to a pheromone involved in eliciting sexual behavior in gilts and sows during the mating process. Androstenone is also deposited in the fat tissue and can be released in response to heat during cooking thus contributing to boar taint. Skatole is a compound produced by bacteria in the hindgut of the boar. It is absorbed across the intestinal wall into the blood stream, is metabolized by the liver and may be excreted or absorbed into fat tissue where it may cause boar taint.

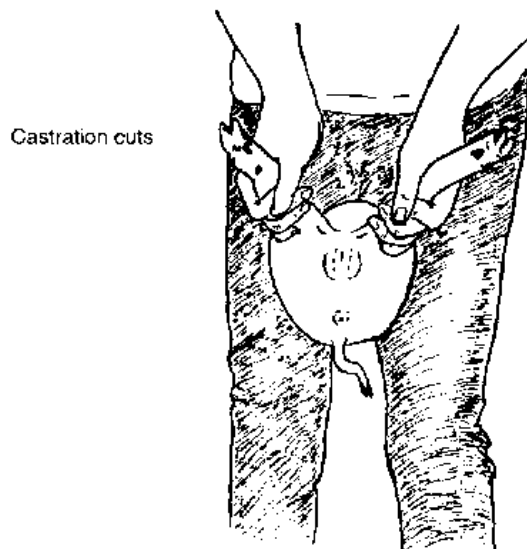
Welfare

There is substantial evidence that castration is painful and highly aversive to pigs and so is a significant welfare concern. The most painful part of castration appears to be the severing of the cords and vessels supplying testis. Fewer behavioral changes are seen in younger piglets after castration (2wks) than in older piglets (7wks) although both classes of piglets show pain related behavior. An assumption is often made that the procedure is less traumatic to younger piglets although the contrary maybe true.

In 2004 a recommendation from the Council of Europe has been made that the castration of the pigs aged over 7 days has to be done under anesthesia- prolonged analgesia by a vet or skilled operator.

Techniques

The most common technique for castration is surgical castration whereby the scrotum and membranes surrounding the testis are cut, the testis is removed from the scrotal sac and the vessels and structures travelling to the testis are severed by cutting, clamping or tearing.



Few other common methods of castration such as elastic rubber bands or burdizzo 'bloodless' castrators can be used on the pig due to shape and position of the testes in the male.

Alternatives to painful physical castration could benefit both pig welfare and address the management and meat quality issues raised by uncastrated male pigs. One study has investigated the possibility of using a hormone (GnRH) to suppress the production of male hormones from the testes and so the compounds which cause boar taint and 'male' behavior. A potentially more promising product is in use in Australia and New Zealand, 'Improvac' (CSL Animal Health) is a vaccine which stimulates the male pig's immune system to make antibodies against its own male tissues. The testis therefore does not develop and the compounds causing boar taint are not produced. Because the product is a vaccine it is not present in the pigs at the time of slaughter and should not pose any threat to human health. The manufacturers claim that the product has no genetically modified ingredients; can reduce the incidence of PSE; improve the colour of the meat; increase marbling fat in the meat and therefore succulence and flavour; improve the growth rate of pigs; reduce the injuries and stress associated with aggression and sexual behaviours and improve the manageability of pigs.

The technique preformed in classes

On the 5th of December 2007 we castrated 8 piglets in class. To anesthesia we used 0,2ml of lignocaine injected directly into the testis area. Two persons were needed to perform the castration. One was the surgeon, the other the helper. The helper held the pig by its hind limbs, with the head facing the ground. We used a scalpel, haemostatic forceps, surgical threads and gauzes.

The steps

-we cleaned the scrotum with warm water and soap

-disinfected it with betadine

-inserted lignocaine into the testis and waited for 2-3minutes for the analgesia to start working

- moved the testicle into the scrotum with finger and then firmly griped the scrotum below the testicle between the thumb and index finger

- made a cut 1 - 2 cm long in the bottom of the scrotum and afterwards the tuica albuginea. The testicle popped out through the cut

- pulled the testicle out of the scrotum and cut through the white cord leaving the red blood vessel uncut

-pulled the testicle out slightly further and twist it around several times and placing the haemostatic forceps before cutting the twisted blood vessels. This helped to reduce bleeding.

-below the forceps we preformed a castration loop using the surgical thread, and cut the loose ends of the thread

-cut the testis under the forceps and releasing them afterwards

-we preformed the same steps with the second testicle

After the castration we cleaned the peritoneal region and replaced the pig on a clean bedding.

Postoperative care

After the castration we should pay attention to the wound and inspect the piglets daily for the next week. We should look out for infection sings such as bleeding, swelling, hyperemia and pus gathering. If any of those appear antibiotic therapy will be needed.