



CASTRATION GUIDELINES

These guidelines from the American Association of Bovine Practitioners serve to assist veterinarians with enhancing the welfare of their clients' cattle by providing guidance related to castration of calves on beef and dairy operations. Essential to this process is that consultation occur between the Veterinarian of Record and the client to develop operation-specific castration protocols that consider age of castration, castration technique, pain mitigation strategies and appropriate recordkeeping for the use of extralabel drugs. Adequate education and training should be provided so that the producer and any caretakers are comfortable and competent, particularly if they are involved in the procedure. The use of written, herd-specific protocols to document these discussions is encouraged. Protocols should be reviewed and modified as needed on a regular basis. Training and education should also be consistently reviewed and updated or revisited when appropriate.

Regardless of age or castration method, castration is understood to be a painful procedure. In the North American beef industry, the benefits of castration typically outweigh the potential negative implications, particularly when care is taken to appropriately mitigate pain and decrease stress through timely age selection, competent castration technique, proper handling, and adequate facilities. Castration lowers testosterone levels, typically resulting in reduced aggressiveness toward other animals and humans, decreased sexual activity/behavior, and improvements in both carcass characteristics and overall quality grade.

AGE

Performing castration at the earliest age possible reduces both stress and pain associated with the procedure and decreases healing time. It may also result in less risk of injury to the personnel involved with the castration procedure(s). Castration prior to three months of age is encouraged or at the first practical opportunity after three months of age.¹ This age will vary between production systems and should be based on recommendations of the Veterinarian of Record and discussions with farm/ranch management. Castration should not be delayed for the purpose of enhancing growth as there are no proven growth benefits associated with this practice.^{2,3}

RESTRAINT

Calves should be restrained for castration in a way that minimizes stress and the risk of injury to the animal and the operator. The use of a squeeze

chute, tilt table, calf cart, lariat or halter are examples of tools that may be used to achieve this goal. Facilities specifically designed for proper cattle handling should be used to ensure employee safety and calm and effective cattle handling. Chemical restraint may be included in the procedure to further minimize stress to the animal as well as the humans involved. Personnel involved with cattle handling should be trained appropriately and be provided the time and resources necessary to achieve low-stress handling.

METHOD

Surgical removal of the testicles or the use of a rubber ring are the preferred methods of castration. The most appropriate method should be determined by the Veterinarian of Record in consultation with farm/ranch management based on the best interest of the health and well-being of the animal within the environment in which it is



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being raised. Both methods result in acute and chronic pain, which should be mitigated in the most appropriate and practical ways possible. Additionally, administration of tetanus prophylaxis and/or antitoxin should be considered the standard of care for banding.

PAIN MANAGEMENT

All methods of castration cause pain. The AABP recommends that pain management be considered the standard of care during all castration procedures. It is critical that producers work with their Veterinarian of Record to develop the most appropriate, individualized pain management protocol for their operation. Beyond the critical benefits to animal welfare, scientific evidence supports castration pain management's positive impact on average daily gain and feed intake. There are currently no approved drugs in the United States for use in cattle with an indication to provide analgesia associated with castration pain. Animal Medicinal Drug Use Clarification Act (AMDUCA) regulations allow extralabel drug use provided a valid veterinarian-client-patient relationship (VCPR) exists and the drug selection process, records and withholding times outlined in the AMDUCA regulations are followed.

LOCAL ANESTHESIA Use of a local anesthetic immediately prior to castration mitigates the acute pain associated with the procedure and provides up to five hours of post-procedural analgesia. Testicular blocks, spermatic cord blocks, and epidurals can minimize pain associated with castration. The use of sedatives prior to administration of local anesthetics can make the procedure safer and less stressful. The use of local anesthetics and sedatives

requires a prescription and should be administered in the context of a valid VCPR. It is critical that adequate records are kept regarding the extralabel use of drugs and that farm/ranch personnel are educated about potential risks or hazards associated with specific medications.

SYSTEMIC PAIN RELIEF Systemic pain relief should be used to provide additional and longer lasting pain relief. Systemic pain mitigation protocols may include opioids, alpha 2 agonists, gabapentin and non-steroidal anti-inflammatory drugs (NSAIDs). These medications may be used alone or in combination to effectively mitigate post-procedural pain associated with castration. Meloxicam has been shown to mitigate post-castration procedure pain for up to 48 hours following a single dose of the drug,⁴ which promotes improved short-term weight gain and feed intake compared to calves that were not administered meloxicam.¹ The use of NSAIDs for pain mitigation following castration in calves older than seven days of age has been shown to reduce the risk of bovine respiratory disease.⁵ Topical NSAID applications make the administration of NSAID therapy at the time of castration practical in most instances when oral or injectable administration is not possible. Additional doses during the healing process should be considered where practical and are encouraged especially when the procedures are delayed beyond three months of age.

For a list of references regarding castration pain management, see Castration Pain Management References at https://aabp.org/committees/resources/Castration_References_2024.xlsx.



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DEFINITIONS

ANALGESIA Alleviation of pain, patient is alert.⁶

ANESTHESIA Without sensation, patient is asleep and cannot be awakened, amnesia and loss of reflexes.⁶

SEDATION Slight depression, patient is awake.⁶

REFERENCES

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- ⁴Coetzee J F, KuKanich B, Mosher R, Allen PS. 2009. Pharmacokinetics of intravenous and oral meloxicam in ruminant calves. *Vet Ther* 2009;10:E1-E8.
- ⁵Coetzee JF, Edwards LN, Mosher RA, et al. Effect of oral meloxicam on health and performance of beef steers relative to bulls castrated on arrival at the feedlot. *J Anim Sci* 2012;90:1026-1039.
- ⁶*Handbook of Clinical Veterinary Pharmacology*, 4th edition. Dan W Upson. 1993.