International Congress on Economics, Management and Business Studies
Hosted Online from New York, USA
Date: 23rd June , 2026
Website: https://econferencia.com

EVALUATION OF THE COMPARATIVE EFFECTIVENESS OF BLOODY AND BLOODLESS CASTRATION METHODS IN DOGS

Turabayev Nurpulat Jamalovich, PhD,
Associate Professor (Scientific Supervisor)
Shonazarov Mirjalol Shokir oglu, Master's student.
Xonkeldi Hasanovich Eshquvatov, PhD, Assistant

Samarkand State University of Veterinary Medicine,
Husbandry and Biotechnology

Abstract

This article compares the clinical effectiveness of bloody and bloodless castration methods used in dogs. The study was conducted on 10 clinically healthy male dogs, and the animals were divided into two groups of 5. The first group received bloody (surgical) castration, and the second group received bloodless castration using a ZAN clamp. The general condition of the animals, pain response, wound healing process, and observed complications were evaluated in the postoperative period. According to the results of the study, despite the presence of an operational wound in the bloody castration method, wound healing and clinical recovery were relatively fast. The bloodless castration method was technically simple and convenient to perform, and was distinguished by a low risk of bleeding. At the same time, it was observed that the postoperative pain reaction lasted longer in the bloodless method. The results showed that when choosing a castration method in dogs, it is important to take into account the postoperative recovery process, pain level, and animal well-being.

International Congress on Economics, Management and Business Studies
Hosted Online from New York, USA
Date: 23rd June , 2026
Website: https://econferencia.com

Keywords: Dog, castration, bloody method, bloodless method, ZAN clamp, surgery, pain response, wound healing, veterinary surgery, animal welfare.

Introduction

Today, the issues of increasing the number of dogs, their maintenance and control of reproduction are one of the most relevant areas of veterinary practice. Castration of male dogs is one of the most widely used methods for controlling reproductive activity, preventing certain diseases of the reproductive system, and reducing aggressive and undesirable behavior of animals. In veterinary practice, castration of male dogs is recognized as one of the most effective and widely used methods for controlling reproductive processes. This operation is important not only for limiting the uncontrolled increase in the animal population, but also for preventing the development of certain diseases associated with the influence of sex hormones. Therefore, castration is considered an integral part of modern preventive veterinary surgery. In recent years, scientific research has extensively studied the effect of this operation on the physiological state of the organism, metabolic processes, and behavioral characteristics. According to Urfer and Kaeberlein (2019), assessing the long-term effects of castration is an important scientific area in veterinary practice.

After castration, the endocrine function of the testicles decreases, resulting in a sharp decrease in the secretion of the hormone testosterone. As a result, functional changes occur in the hypothalamic-pituitary-gonadal system, which leads to a decrease in physiological and behavioral reactions associated with reproductive activity. Researchers have noted a decrease in the instinct to protect the territory, the desire for dominance, and uncontrolled mating behaviors in neutered dogs. Farhoody et al. (2018) noted in their study that the degree of manifestation of these changes directly depends on the age, breed, housing conditions, and

individual temperament characteristics of the animal. Therefore, when assessing the impact of castration on behavior, it is important to take into account the individual biological characteristics of each animal.

In veterinary practice, bloody and bloodless methods of castration are used. The bloody castration method is based on the surgical removal of the testicles and is characterized by its high efficiency in completely eliminating reproductive activity. However, this method is associated with the formation of an operational wound and requires postoperative care and antiseptic measures.

Bloodless castration methods are performed by crushing the testicular system using special clamps. This method is technically simple, characterized by a short operation time and a low risk of bleeding. At the same time, in some cases, a longer postoperative pain reaction may be observed.

A comparative study of the advantages and disadvantages of bloody and bloodless castration methods in dogs, assessing the impact on the postoperative recovery process and animal welfare is of important scientific and practical importance for veterinary practice.

The purpose of the study is to compare the clinical effectiveness of bloody and bloodless castration methods in dogs, determine the postoperative pain response, wound healing process, and recovery time.

Relevance of the topic. Today, ensuring animal welfare, reducing postoperative complications, and increasing economic efficiency are among the most important tasks in veterinary practice. A comparative study of the advantages and disadvantages of bloody and bloodless castration methods in small animals, namely dogs, and determining the most optimal method for practice is of urgent scientific and practical importance.

Materials and methods. The research was conducted in a veterinary clinic. As the object of the study, 10 clinically healthy male dogs of similar age and body weight were selected. The animals were divided into two groups of 5 dogs based on the principle of analogues.

In dogs in group I (control group), the bloody (surgical) castration method was used. Before the operation, the animals were injected intramuscularly with xylazine at a dose of 1–2 mg/kg for sedation. The operation was performed in compliance with the rules of aseptic and antiseptics. In the postoperative period, amoxicillin was administered intramuscularly at a dose of 15 mg/kg once a day for 3–5 days for antibacterial protection. To reduce pain and control the inflammatory process, meloxicam was administered at a dose of 0.2 mg/kg once a day for 3 days. The surgical wound was treated with an antiseptic with iodine solution or chlorhexidine solution 1–2 times a day for 5–7 days.

In dogs of group II (experimental group), a bloodless castration method was used. In this case, the scrotum was mechanically compressed using a ZAN clamp while maintaining the integrity of the external tissues. Before the operation, the drug xylazine was administered intramuscularly at a dose of 1–2 mg/kg. After the operation, amoxicillin was administered at a dose of 15 mg/kg for 3–5 days. Meloxicam was administered as an anti-inflammatory and analgesic agent at a dose of 0.2 mg/kg for 3 days. In order to improve the general condition of the body and support regeneration processes, the drug Trivit was administered intramuscularly at a dose of 0.5–1 ml once every two days, a total of three times. The surgical site was treated with an antiseptic for 5–7 days.

During the study, the general clinical condition of the animals, body temperature, heart rate and respiratory rate, postoperative pain response, local inflammatory signs, wound healing process, and recovery time were regularly monitored. The

results were compared between groups and the clinical effectiveness of bloody and bloodless castration methods was assessed.

Research results and their analysis. A total of 10 clinically healthy male dogs participated in the study. The animals were divided into two groups of 5. The dogs in the first group were castrated using a bloody (surgical) method, and the dogs in the second group were castrated using a bloodless ZAN clamp. In the postoperative period, the general clinical condition of the animals, pain response, changes in the surgical field, and the recovery process were monitored.

In dogs in group I (bloody method), mild swelling and local pain were observed around the surgical field during the first 1–2 days after the operation. However, as a result of the use of amoxicillin, meloxicam, and antiseptic treatments, the inflammatory process was brought under control. Primary healing was observed in most of the wounds within 7–10 days. The appetite and general activity of the animals recovered in a short time. No serious complications were noted in the dogs in the group.

In dogs in group II (bloodless method), bleeding and open wounds were not observed due to the absence of an operative incision. Castration was performed by crushing the vas deferens using a ZAN clamp. However, in the days after the operation, some animals experienced discomfort, decreased walking activity, and a longer duration of pain reaction. Pain symptoms persisted longer than in dogs undergoing the bloody method. At the same time, the simplicity of the surgical technique and the short duration of the operation were considered one of the important advantages of this method.

Analysis of the results showed that, despite the presence of an operational wound in the bloody method, wound healing and general clinical recovery of the animals were relatively faster. Although the bloodless method was distinguished by its

simplicity of implementation and the absence of the risk of bleeding, the postoperative pain reaction lasted longer.

Based on the results of the study, it can be said that both methods are suitable for practical veterinary use. However, when choosing a method, it is advisable to take into account, in addition to the technical aspects of the operation, the postoperative well-being of the animals, the level of pain, and the recovery period.

Summary

1. Bloody and bloodless castration methods in dogs are considered effective methods for eliminating reproductive activity, and positive clinical results were achieved with both methods.
2. Despite the presence of an operational wound in the bloody castration method, wound healing and clinical recovery of animals were faster than in the bloodless method.
3. Although bloodless castration performed using a ZAN clamp was technically simple and convenient to perform, it was characterized by a longer postoperative pain reaction.

Practical recommendations

1. When choosing a castration method for dogs, it is necessary to take into account the technical convenience of the operation, as well as the level of postoperative pain and recovery time.
2. When using the bloodless castration method, it is recommended to use analgesic and anti-inflammatory drugs to reduce postoperative pain.

3. In the case of blood castration, strict adherence to the rules of asepsis and antiseptics and regular postoperative care accelerate the wound healing process and prevent the development of complications.

List of used literature

1. Farhoody P., Mallawaarachchi I., Tarwater P.M. et al. "Aggression toward Familiar People, Strangers, and Conspecifics in Gonadectomized and Intact Dogs" Frontiers in Veterinary Science. 2018. Vol-5:18.
2. Urfer S.R., Kaeberlein M. "Desexing Dogs: A Review of the Current Literature" Animals. 2019. Vol-9(12):1086.
3. Narziyev B.D., Yulchiyev J.B., Ravshanov M.A., //Mayda hayvonlar xirurgiyasi: o'quv qo'llanma. – Samarqand, 2026. – 164 b.