

## Evaluation of Frenulum in A Bull

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**Abstract:** Penile frenulum can be defined as the fusion between the epithelial surface of the penis and the preputium seen in animals and humans. In this study, the clinical diagnosis and operative treatment of penile frenulum encountered in a male Brown Swiss cattle were shared. A 2-year-old Brown Swiss cattle brought to Atatürk University, Faculty of Veterinary Medicine, Department of Surgery was examined. The animal was preoperatively prepared and kept for the operation for 12 hours. The animal was sedated with a combination of xylazine (0.05 mg/kg) and ketamine (1 mg/kg), and the penis was removed from the prepuce. Penile tissue and preputium junctions were dissected under local anesthesia. Both preputium and penis were ligated separately. Bleeding was controlled and the bull was raised. The bull was followed for 5 days postoperatively and antibiotic treatment was given. As a result, the operative treatment of the penile frenulum was successful and the bull was able to maintain a fertile life.

**Keywords:** Bull, Frenulum, Infertility, Penis, Surgery

## INTRODUCTION

The frenulum is among the most common anomalies that interfere with the reproductive health of the penis, foreskin or sheath of young bulls (1). The epithelial surfaces of the penis and preputium are fused in newborn calves. When the calf is 4 months old, the penis and preputium begin to open with the effect of testosterone and are completed between 9 and 11 months (2). The skin fold connecting the preputium on the ventral surface of the glans penis is called the frenulum of the penis. This situation pulls the cranial part of the penis down during mating and prevents it from being directed to the vagina, causing difficulty in mating (3). In a study by Carroll et al. (4) it was reported that the highest incidence of frenulum was found in Beef Shorthorn and Aberdeen Angus cattle on 10,940 bulls, the success of operative treatment was high and the prognosis was good. The frequency of frenulum is reported to vary between 3.64 and 5.2/1000 bulls in other studies (5, 6). In one study, it is stated that the rate of the permanent penile frenulum is 0.5% (7).

## CASE PRESENTATION

A two year old Brown Swiss breed bull, brought to Atatürk University, Faculty of Veterinary Medicine, Department of Surgery, was examined and a frenulum was diagnosed.



**Figure 1.** Penis Frenulum in a bull

Xylazine (0.05mg/kg) was used intramuscularly as premedication. Ketamine hydrochloride (1 mg/kg) was used intravenously as a solid anesthetic for induction. After induction, the animal was restrained and laid in the lateral position. Preputium and surrounding tissues were prepared with razor. (No. 10 (1.5 mm, Heiniger, Saphir, Switzerland). Chlorhexidine and povidone iodine were used for penile tissue and foreskin antiseptis. Local anesthesia with 2% infiltration of lidocaine was applied to the prepuce and penile attachment points. Decapitation was performed by performing a dissection between ligations after the large vessels were ligated bilaterally by holding the penis with gauze. Penicillin procaine (10000 IU/kg) and dihydrostreptomycin sulfate (10 mg/kg) were administered intramuscularly for 5 days postoperatively.

#### DISCUSSION and CONCLUSION

In this case report, it was aimed to provide information about the diagnosis and treatment of penile frenulum encountered in a bull. In previous studies, information was given about the diagnosis and treatment of penile frenulum in bulls (8). In the study, it was stated that after the penile frenulum operation, the bull can start mating activity in 14-21 days. According to our findings, normalization was observed in the bull after the 5th day. However, the fertility rate was not determined because the desire for mating and fertilization were affected by many factors such as the completion of the spermatogenesis cycle. It is stated that the thin connective tissue that does not break in the penile frenulum does not prevent penile elongation, but may prevent intromission (9). In our findings, the penis has the capacity to lengthen. However, the thin connective tissue that did not rupture was pulling the penis ventrally. In this case, it is thought that the bull will be forced to mate. In the frenulum of the penis, the tissues can be easily separated, but bleeding is common (10). In addition some studies have reported that the frenulum may be hereditary and these animals should not be used as commercial or breeding stock (11). Nonetheless, this situation is neglected in determining the fertility rate of the bull

(12). In the semen collection process, it will be useful to examine the animal in terms of frenulum (13). In this respect, it was concluded that animals with penile frenulum should be treated operatively, but these animals should not be used in herds.

#### CONFLICT of INTEREST

There is no conflict of interest between the authors.

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