

**PREPUTIAL REPAIR AS AN ALTERNATIVE TO PENECTOMY IN DOGS -
REPORT OF TWO CASES**

**RECONSTRUÇÃO PREPUCIAL COMO ALTERNATIVA À PENECTOMIA EM
CÃES – RELATO DE DOIS CASOS**

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ABSTRACT

Extensive foreskin and penile lesions are the main indications of penectomy in the dog. Such a surgical approach results in high morbidity and risk of infection. A viable alternative to penectomy comprises preputial reconstruction after resection of extensive benign lesions. The aim of this study was to report the case of two dogs with extensive preputial lesions submitted to different reconstructive foreskin techniques. In both cases there were no postoperative complications, the animals did not present difficulty for penile exposure or retraction. Therefore, the techniques used in the present study are viable as alternative techniques to replace the penectomy.

Key-words: Reconstructive Techniques; extensive injuries; preputial lesions.

RESUMO

Lesões extensas em prepúcio e pênis constituem as principais indicações de penectomia no cão. Tal abordagem cirúrgica resulta em elevada morbidade e risco de infecção. Uma alternativa viável à penectomia compreende a reconstrução prepucial após a ressecção de lesões extensas benignas. O

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objetivo deste estudo foi relatar o caso de dois cães com lesões prepúciais extensas, submetidos a diferentes técnicas reconstrutivas de prepúcio. Nos dois casos não foram verificadas complicações pós-operatórias, os animais não apresentaram dificuldade para exposição ou retração peniana. Diante disso, as técnicas utilizadas no presente estudo são viáveis como técnicas alternativas em substituição à penectomia.

Palavras-chave: Técnicas reconstrutivas; lesões extensas; lesões prepúciais.

INTRODUCTION

Reconstructive plastic surgery in veterinary medicine is performed primarily to repair anatomical defects secondary to trauma, and to correct or improve congenital and acquired abnormalities (PAVLETIC et al., 2010; GAVIOLI et al., 2014).

Extensive lesions in the prepuce and penis are the main indications of penectomy in dogs (MARTINS et al., 2015). The resection of penis, however, is usually associated to prescrotal urethrostomy, which can cause post-surgical complications and consequently reduces quality of life and survival time of the affected animals (GROSSMAN & BALTZER, 2012; GAVIOLI et al., 2014; MARTINS et al., 2015). The main surgical complications of penectomy associated to prescrotal urethrostomy include hemorrhage, suture dehiscence, urethral stenosis, and local tumor recurrence in oncological patients (GAVIOLI et al., 2014; MARTINS et al., 2015).

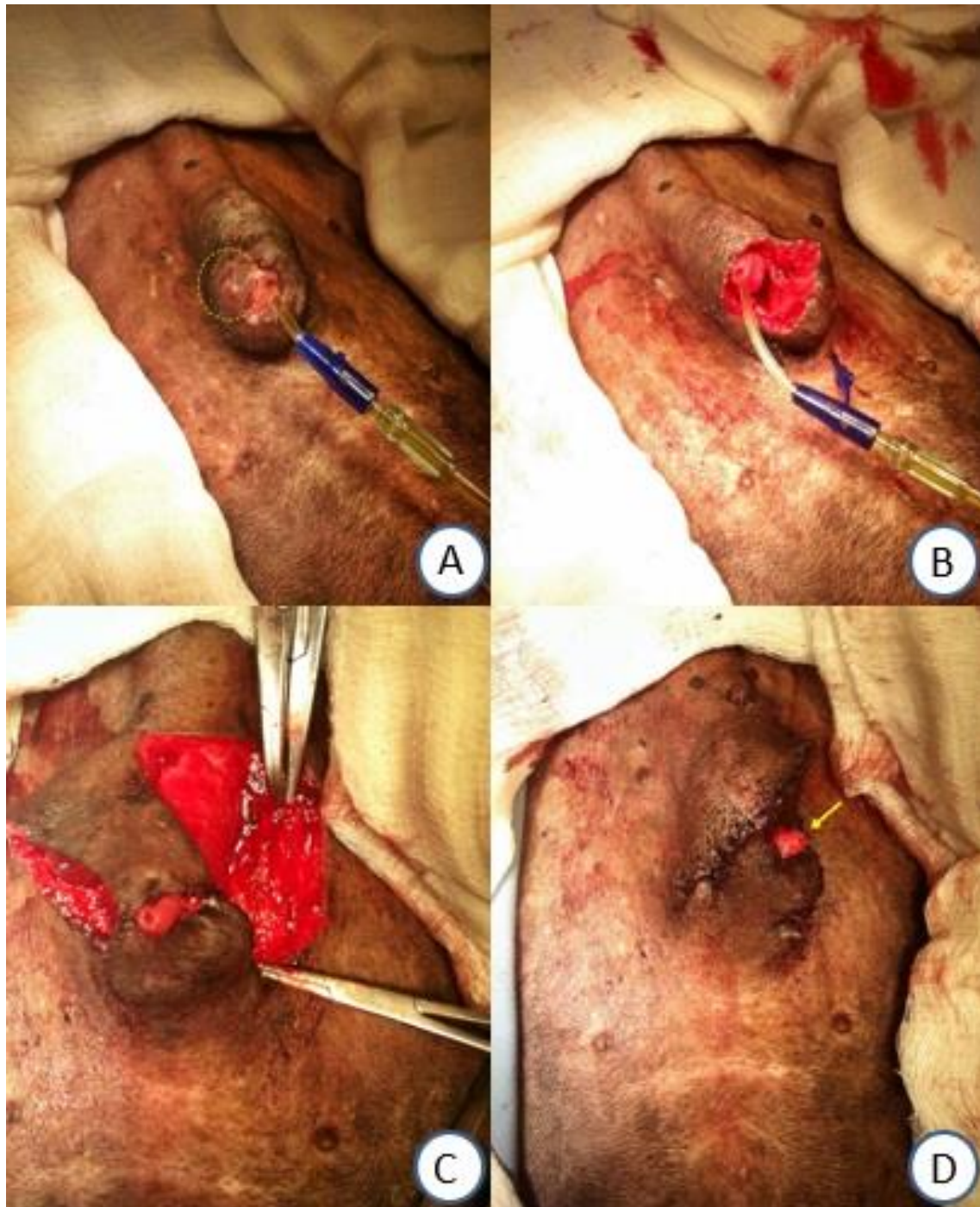
An alternative to penectomy, rarely performed in dogs, consists of preputial repair after the resection of extensive lesions (BURROW et al., 2011). According to the literature, many reconstructive techniques are described with satisfactory results for the treatment of preputial lesions, characterized by tissue healing without postoperative complications (GROSSMAN & BALTZER, 2012; MARTINS et al., 2015).

The aim of this study was to report the case of two dogs with extensive preputial lesions, both submitted to different reconstructive techniques using subcutaneous pedicled flap.

CASE REPORTS

Case Report 1

A seven years-old mongrel dog was attempted for evaluation with a nodule of 1.5 cm in diameter in the ventral edge of the preprucial ostium (Figure 1 A). The cytopathologic examination was suggestive of a malignant neoplastic lesion. Due to



this, it was performed the surgical approach for the resection of the lesion and posterior preputial repair.

Figure 1: Dog with a preputial lesion submitted to reconstructive surgery. A) Note the lesion involving the preputial ostium (circumscribed line). B) After excision of the

lesion. Note the quadrangular full thickness defect. C) After cranial mobilization of the flap. D) Immediate postoperative appearance with reconstruction of the preputial ostium (arrow).

For this, the lesion was submitted to a quadrangular resection with lateral and deep safety margins of 1 cm, including the preputial mucosa, which resulted in a full thickness defect of 3 cm length x 3 cm width. After the lesion resection, the preputial repair was performed by a subcutaneous pedicled advancement flap of 6 cm length x 3 cm width. For this, it were realized two full thickness incisions, both parallel to the prepuce and continuous to the caudal edge of the defect (Figure 1 B). The flap was then mobilized in the cranial direction until cover the entire defect without tension (PAVLETIC et al., 2010).

For the suture of the flap it were realized two simple interrupted suture patterns, respectively, using 3-0 polyglactin 910 in the mucosa and 2-0 nylon in the skin (Figure 1 C). For the preputial ostium repair, the skin of the cranial edge of the flap was sutured to the subjacent mucosa using 3-0 polyglactin 910 in a simple continuous pattern (Figure 1 D).

The animal received at postoperative cephalothin (30 mg/kg, every eight hours), ranitidine hydrochloride (2 mg/kg, every eight hours) and tramadol hydrochloride (4 mg/kg, every eight hours). In addition, the surgical wound was cleaned daily with saline 0.9% and 0.02% chlorhexidine solution.

The surgical wound healing was verified at seven days postoperatively. During this period, it were not verified postoperative complications. In addition, the animal did not present difficulty for exposure and retract the penis or even to urinate. The result of the histopathological examination was consistent with a granulomatous nodular dermatitis.

Case Report 2

A 15 years-old german shepherd dog breed was attempted for evaluation with a deep myiasis in the ventral portion of the preputial sheath, without compromising the preputial ostium.

After the debridement of the wound it was verified a full thickness defect of 6 cm in diameter, which was resected and then repaired with a subcutaneous pedicled interpolation flap of 8 cm length x 6 cm width.

For the flap configuration, it were realized two full thickness incisions, both parallel to the prepuce. One of the incisions was continuous to the left caudal apex of the defect. The flap was then mobilized without tension towards the cranial aspect of the defect with a deviation of approximately 90 degrees in relation to the left side of the prepuce (PAVLETIC et al., 2010).

For the suture of the flap it were realized two simple interrupted suture patterns, respectively, using 3-0 polyglactin 910 in the mucosa and 3-0 nylon in the. It was not necessary to repair the preputial ostium.

The animal received at postoperative cephalothin ampicillin (22 mg/kg, every eight hours), metronidazole (40 mg/kg, once a day), ranitidine hydrochloride (2 mg/kg, every eight hours), tramadol hydrochloride (4 mg/kg every, eight hours) and dipyrone (25 mg/kg, every eight hours). In addition, the surgical wound was cleaned daily with saline 0.9% and 0.02% chlorhexidine solution.

The surgical wound healing was verified at 10 days postoperatively. During this period, it were not verified postoperative complications. In addition, the animal did not present difficulty for exposure and retract the penis or even to urinate.

DISCUSSION

The exposure of the penis secondary to the creation of full thickness preputial defects after the resection of extensive lesions or trauma can results in bleeding and penile necrosis (VOLPATO et al., 2010).

Due to this, the most common indication is the realization of the penectomy associated to prescrotal uretrostomy, which is related to high postoperative morbidity and complications, such as bleeding, infection, suture dehiscence and urethral stenosis (MARTINS et al., 2015). In addition, the procedure can result in severe anemia due to excessive intraoperative bleeding and consequently prolong the postoperative recovery (GAVIOLI et al., 2014).

In fact, both animals reported in the present study showed surgical wound healing in seven to 10 days without complications. This may be justified to the repair of not only the cutaneous defect of the prepuce, but also the repair of the underlying mucosa (PAVLETIC et al., 2010). Do not repair the preputial mucosa could result in infection and necrosis of the above located skin segment due to the exposure of its bed to the urine and other penile secretions (VOLPATO et al., 2010).

In addition, do not repair the preputial mucosa could result in more fibrosis deposition and the adherence of the penis to the newly repaired preputial sheath, which consequently can compromise the penile exposure or retraction (GAVIOLI et al., 2014; MARTINS et al., 2015). In the present study, it was not verified the adherence of the penis to the preputial sheath in both reported cases, since the animals presented adequate exposure of the penis.

The reconstruction of the preputial mucosa was possible due to the characteristics of elasticity and extensibility of the underlying mucosa of the skin donor areas, localized adjacent to the defect (MACHADO & PAPA, 2010). This allowed the mobilization of the mucosa together with the skin located above without tension towards the defect to be repaired (PAVLETIC et al., 2010).

Additionally, the results verified in the present study can be justified by the highly vascularized preputial region that allowed the support of oxygen and nutrients to the subcutaneous pedicled flaps, even obtaining long skin segments in relation to the width of the pedicles (PAVLETIC et al., 2010; SCHEFFER et al., 2013).

Another advantage of the subcutaneous pedicled flap is related to the fact that they can be used to immediately repair the defects newly created, since they are widely available and do not require a granulated bed to allow the tissue healing and the satisfactory overcome of the flaps (PAVLETIC et al., 2010; SCHEFFER et al., 2013), as verified in both reported cases of the present study.

At least, reconstructive techniques for preputial repair can be more aesthetics and less mutilating in comparison to penectomy and, therefore, more accepted by most of the tutors.

CONCLUSION

Considering the results verified in the present study, we can conclude that the reconstructive techniques performed in the reported cases may be a viable alternative to penectomy.

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