CASE REPORT

ISSN Online 1678-4456

Surgical correction of congenital phimosis in a cat: a case report

Correção cirúrgica de fimose congênita em gato: relato de caso

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ABSTRACT

Phimosis is a rare condition in dogs and cats, characterized by difficulty in penile exposure due to the narrowing of the preputial ostium. This condition may be congenital or acquired as a result of trauma. Clinical signs range from asymptomatic narrowing of the preputial orifice to complete obstruction, potentially leading to symptoms such as stranguria and pollakiuria. The diagnosis of congenital phimosis is made during physical examination by identifying a stenosis of the preputial orifice. Treatment is surgical and may involve various techniques to reconstruct or enlarge the preputial ostium. This study reports a case of congenital phimosis in a domestic feline, corrected surgically. The patient, a 30-day-old mixed-breed male, was presented at the Veterinary Clinic of PUC-Campinas with symptoms of dysuria and dribbling urination. After diagnosis, a preputioplasty was performed, involving the excision of preputial tissue through a 360-degree incision, followed by mucocutaneous sutures. Preputioplasty proved to be a practical and quick approach, providing excellent recovery for patients with congenital phimosis.

Keywords: Preputioplasty. Preputial stenosis. Congenital phimosis. Feline. Male reproductive system.

RESUMO

A fimose é uma condição rara em cães e gatos, caracterizada pela dificuldade de exposição peniana devido ao estreitamento do óstio prepucial, que pode ser congênita ou adquirida resultante de trauma. Os sinais clínicos variam de um estreitamento assintomático do orifício prepucial a uma obstrução completa, podendo levar a sintomas como estranguria e polaciúria. O diagnóstico de fimose congênita é feito durante o exame físico, ao identificar uma estenose do orifício prepucial. O tratamento geralmente é cirúrgico e pode envolver diferentes técnicas para reconstruir ou ampliar o óstio prepucial. Este estudo relata um caso de fimose congênita em um felino doméstico, corrigido cirurgicamente. O paciente, um macho sem raça definida, de 30 dias, foi atendido na Clínica Veterinária da PUC-Campinas com sintomas de disúria e micção em gotejamento. Após o diagnóstico, foi realizada a prepucioplastia, que envolveu a excisão do tecido prepucial por meio de uma incisão em 360 graus, seguida por suturas mucocutâneas. A prepucioplastia revelou-se uma abordagem eficaz e de rápida execução, proporcionando uma excelente recuperação para pacientes com fimose congênita.

Palavras-chave: Prepucioplastia. Estenose prepucial. Fimose congênita. Felino. Sistema reprodutor masculino.

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Received: November 29, 2024
Approved: July 24, 2025

How to cite: Payão TS, Pinhotti NR, Pellegrini V, Sarri BM, Ferruccio CA, Barros MA, Biazzo LES, Pascoal L.B. Surgical correction of congenital phimosis in a cat: a case report. Braz J Vet Res Anim Sci. 2025;62:e227803. https://doi.org/10.11606/issn.1678-4456.bjvras.2025.227803.

Phimosis is a rare condition in pets such as dogs and cats, characterized by the inability of the penis to protrude due to narrowing of the preputial fold. This condition can be congenital or acquired, with the acquired form often associated with trauma or neoplasia. According to the literature, despite its low incidence, phimosis can lead to significant complications if not diagnosed and treated promptly, including pain, discomfort during urination, irritations, and preputial infections secondary to urine retention as well as lacerations or abrasions of the prepuce (Volpato et al., 2010).

Current literature, including studies by Ospina (2023) and Vlaming et al. (2019), supports surgical intervention as an effective treatment for this condition. Surgical correction of phimosis in dogs and cats can be performed using various preputioplasty techniques, with the choice of method depending on the severity of the condition and the surgeon's preference. The goal of the surgery is to reconstruct or enlarge the preputial orifice, allowing for proper retraction and unrestricted movement of the penis in and out of the prepuce. The most commonly employed techniques include a complete incision on the craniodorsal aspect of the prepuce or a 360-degree incision, which removes the tip of the prepuce and the preputial orifice (Bastos et al., 2020; Fernandes et al., 2021; Fossum, 2005; Gonçalves, 2021; Slatter, 2007). Additionally, castration is recommended for patients with congenital phimosis (Fossum, 2005).

This case report discusses the history, diagnosis, and treatment of a young male feline presenting with symptoms and physical signs of congenital stenosis of the preputial orifice. The patient, a male domestic cat (Felis catus), mixed breed, approximately 30 days old, and weighing 0.580 kg, was referred to the Veterinary Clinic of Pontifical Catholic University of Campinas (PUC-Campinas) for an abdominal ultrasound and surgical correction of preputial stenosis. According to the owner, symptoms of dysuria and dribbling urination had been observed since the cat's adoption, which occurred about a week before the appointment.

During the initial evaluation, clinical parameters were within normal limits for the cat's breed and age, except for the preputial orifice, which was found to be minimally open (Figure 1A). Additionally, abdominal enlargement was noted, along with discomfort on palpation. Abdominal palpation revealed feces retained in the intestine. Based on the physical examination findings and the patient's age, a diagnosis of phimosis due to congenital stenosis of the preputial orifice was confirmed.

Following the physical examination, blood samples were collected for hematological and biochemical analysis, including tests for urea and creatinine, which revealed slight deviations from the normal range for the species. Additionally, a coproparasitological examination was requested and returned a negative result. Attempts to perform an abdominal ultrasound were unsuccessful due to poor visualization of the abdominal structures caused by a large amount of feces in the animal's intestines.

The chosen treatment was surgical correction of the preputial stenosis. Due to the animal's low body weight, absence of pain, and docile behavior, pre-anesthetic medication was not necessary. To induce anesthesia, propofol (2 mg/kg) and Remifentanil (8 mcg/kg/h) were administered. After the loss of eyelid and laryngeal reflexes, as well as a reduction in jaw muscle tone, endotracheal intubation was performed, followed by the placement of a pulse oximeter, electrocardiogram, esophageal thermometer, non-invasive oscillometric pressure monitor, and capnograph for intraoperative monitoring. Anesthesia was maintained with sevoflurane in combination with continuous intravenous infusions of remifentanil (10-12 mcg/kg/h), lidocaine (2 mg/kg/h), and ketamine (1 mg/kg/h).

The patient was positioned in dorsal recumbency, followed by trichotomy of the inguinal, preputial, and perianal regions. After antisepsis using degreasing chlorhexidine (Riohex 2%®), lidocaine (2 mg/kg) was administered to the preputial region and pudendal nerve, followed by definitive antisepsis with alcoholic chlorhexidine (Riohex 0.5%®). The surgical field was then draped (Figure 1B).

Before commencing the surgical procedure, attempts at urethral catheterization were made using a 24-G intravenous catheter (0.7x19 mm) to empty the patient's urinary bladder and improve visualization of the penis and urethra during the preputial incision, with no success (Figure 1C).

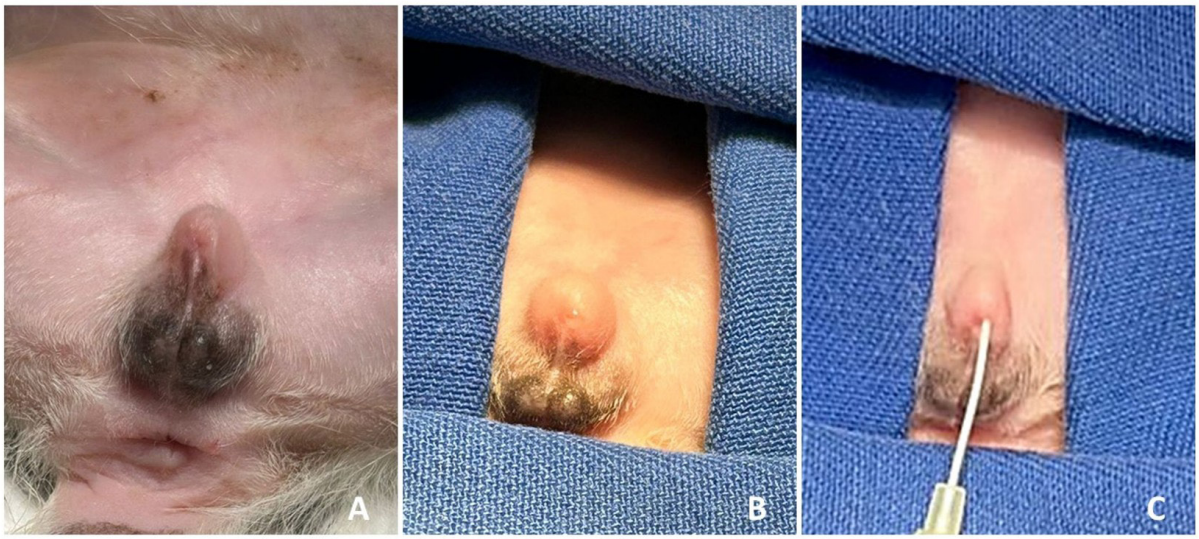

Figure 1 – Phimosis due to congenital stenosis of the preputial orifice in a 30-day-old feline. (A) Image of the preputial region showing anatomical alterations in the preputial ostium, indicating stenosis that prevents exposure of the penis; (B) Accumulation of urine in the foreskin and dripping of urine through the stenosed ostium, characteristic of phimosis; (C) Attempted urethral catheterization using a 24-G (0.7x19 mm) yellow intravenous catheter during the preoperative period, without success.

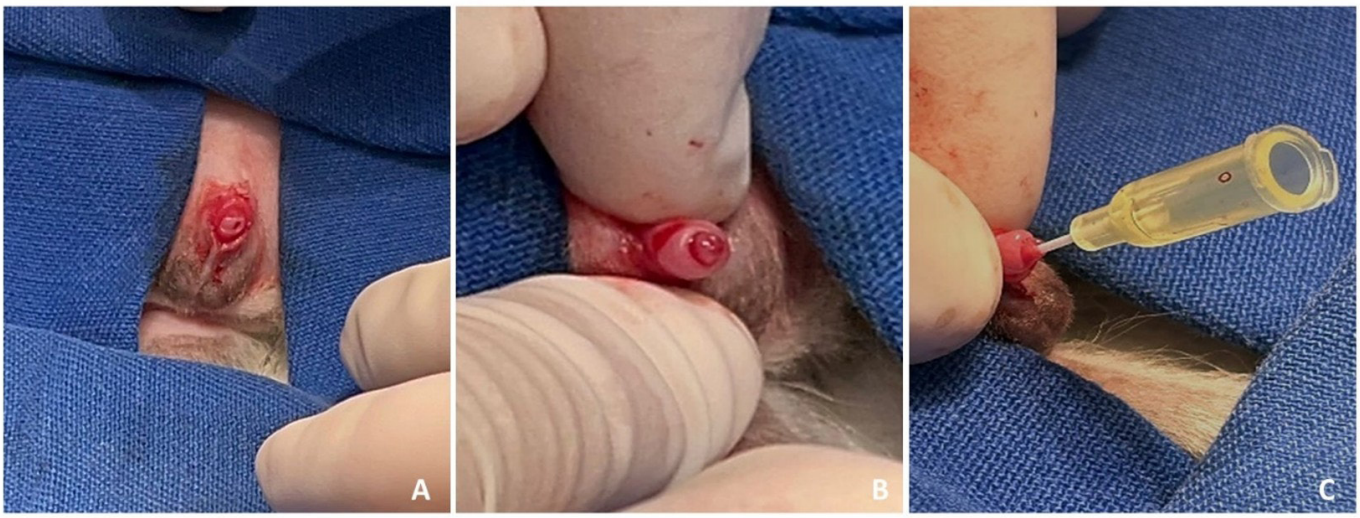

Figure 2 – Images of the surgical procedure for correction of congenital phimosis using the preputial circumcision technique. (A) Appearance of the preputial orifice after performing a 360º incision, showing careful excision to avoid excessive shortening of the foreskin and injury to the penis; (B). After excision of 3 mm of preputial tissue, it was possible to perform exposure of the penis; (C) Exposure of the penis and access to the urethral orifice allowed urethral catheterization by using a 24-G (0.7x19 mm) yellow intravenous catheter.

The selected surgical procedure was the circumferential preputioplasty technique, classified by Vlaming et al. as the preferred method for felines with type I phimosis. This technique is indicated in cases where generalized edema is present in the preputial area, typically due to urine accumulation in the prepuce and the absence of penile-preputial adhesions.

A 360-degree incision was made around the preputial orifice, with care taken to avoid excessive widening of the orifice and to prevent exposure of the penis. Approximately 4 mm of tissue was excised (Figure 2A). The preputial mucosa was then carefully retracted to fully expose the penis and urethral orifice (Figure 2B). This approach allowed for the evaluation of the penis, catheterization, and subsequent relief of the urinary bladder (Figure 2C).

To conclude the procedure, a thorough inspection of the penis was performed to identify any anomalies, lesions, or adhesions. After confirming the absence of these conditions, the mucosa of the ipsilateral edge of the prepuce was sutured to the skin using a simple interrupted suture pattern with non-absorbable 6-0 monofilament nylon (Figure 3A).

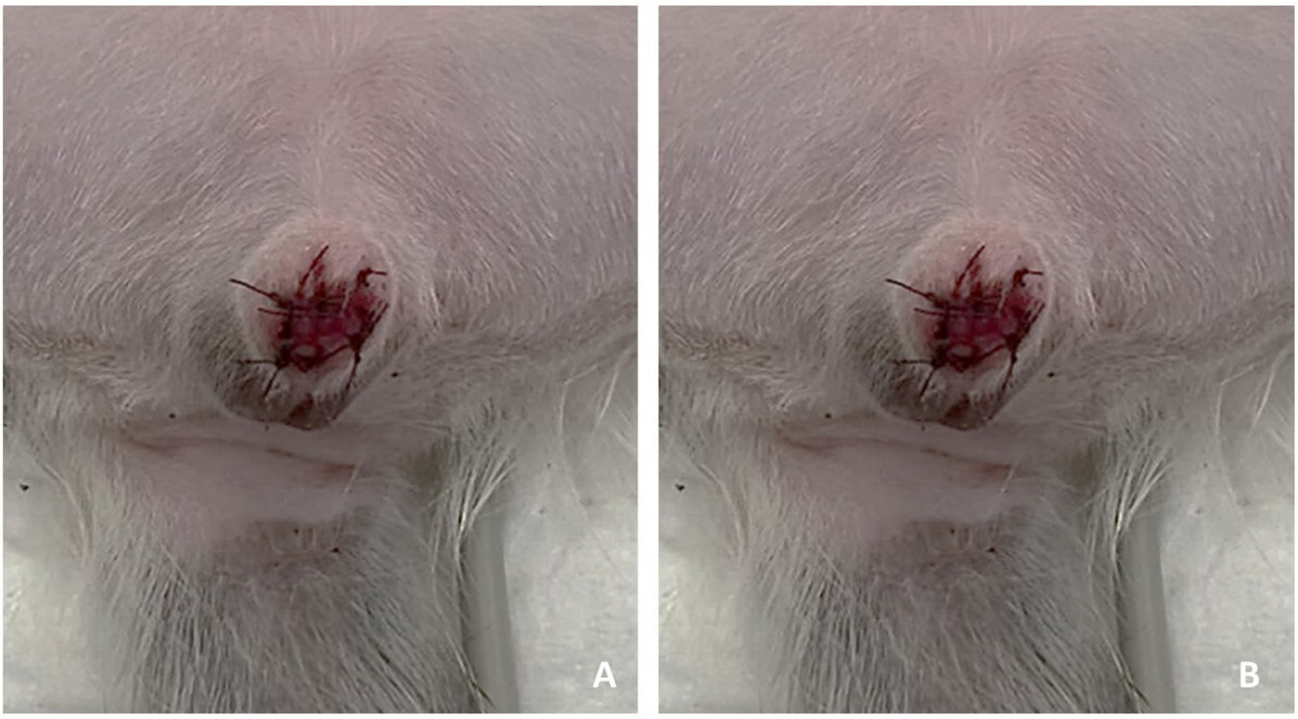

Figure 3 – Appearance of the feline's preputial region after the surgical procedure. (A) Image of the new preputial ostium, showing the suture of the preputial mucosa to the skin with 6-0 monofilament nylon thread; (B) Photo of the preputial ostium taken during the postoperative follow-up, 4 months after surgery.

No complications occurred during the surgical procedure. Post-operative medications included amoxicillin + clavulanic acid (12.5 mg/kg) and tramadol (1 mg/kg). Following surgery, the animal exhibited a rapid and uncomplicated recovery. Ten days later, the patient returned to the Veterinary Clinic of PUC-Campinas for a follow-up evaluation. During this visit, the surgical wound stitches were removed, and a thorough clinical examination was performed, revealing a weight gain of 0.340 kg. Clinical parameters were within normal limits, and improvement in quality of life was noted. The owner reported that the animal's urination and defecation were normal, with no episodes of vomiting.

The clinical signs observed at the initial consultation included dysuria and dribbling urination. These findings align with those reported by Ospina (2023), who mentions stranguria, pollakiuria, hematuria, and inflammation as potential signs. Ospina also notes that some patients with mild stenosis may be asymptomatic. In contrast, others may present with preputial ulcerations in cases of more severe narrowing, or even a complete absence of the orifice.

The choice of surgical technique for phimosis correction should be based on a thorough clinical evaluation of the case, the severity of the condition, and the animal's overall health. Consulting with an experienced surgeon is crucial to determine the most appropriate approach. It is also important to note that a second surgical procedure may be necessary after the animal has matured (Fossum, 2005).

In this case, the surgical treatment was successfully performed—the multimodal anesthesia protocol provided cardiovascular stability and effective intraoperative pain control. Post-operative recovery was smooth and without complications, as confirmed by subsequent clinical monitoring. Orchiectomy was not performed at this time; however, it was agreed with the owner that castration would be scheduled once the patient reached 8 months of age. Considering the high likelihood of stenosis and feline lower urinary tract disease (FLUTD) development, it is important to monitor the patient closely. In addition to orchiectomy, when the anatomical structures are more developed, penectomy and perineal urethrostomy may be necessary to ensure proper urinary function and prevent future complications (Fernandes et al., 2021; Fossum, 2005).

This approach highlights the importance of accurate diagnosis and appropriate treatment to prevent complications and ensure the well-being and continued health of patients. It also underscores the effectiveness of surgical intervention for congenital phimosis in young animals.

Conflict of Interest

We declare that this work does not present any conflict of interest for the authors.

Ethics Statement

Not applicable.

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Financial Support: None.