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Perineal urethrostomy for management of congenital and acquired stenosed urethral orifice in two domestic short-hair cats

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Abstract

Two domestic short-haired cats two- and four-month-old were presented with a history of dribbling of urine. Both the animals were hyporectic and one animal showed vomiting. Physical examination revealed a distended urinary bladder in both cases. The urethral orifice was found to be very small with urine dribbling upon abdominal compression. From the history and physical examination the condition was diagnosed as a stenotic urethral orifice. Perineal urethrostomy under general anaesthesia was resorted to. The animals were stabilised with fluid therapy and antibiotics before surgery. An elliptical incision was made including scrotum and prepuce. Blunt and sharp dissection was employed to free the penile urethra from underlying structures. The urethra was split longitudinally to expose the lumen. Urethral mucosa was apposed to the skin using PDS 5-0 in an interrupted manner. Post-operatively antibiotic therapy was advised for 5 days. Diuretics and anti-inflammatory therapy were administered for 3 days. A review after 10 days revealed intact sutures, a patent perineal stoma and an active patient.

Keywords: *Perineal urethrostomy, stenotic urethra, urethral obstruction*

A diverse array of conditions associated with feline lower urinary tract is collectively referred to as feline lower urinary tract disease (FLUTD) (Bass *et al*., 2005). Recognised causes of feline lower urinary tract disease include uroliths, bacterial, fungal, or parasitic urinary tract infections (UTIs), congenital or acquired anatomical abnormalities, urethral crystal and/or matrix plugs, iatrogenic or traumatic injuries, and neoplasia. The narrow distal portion of the urethra is the most common site of urethral obstruction or stenosis in male cats which often occurs as sequelae to FLUTD (Osborne *et al*., 1996). However congenital anomalies like narrow urethra, absence of urethral opening and acquired stricture of urethra due to trauma require surgical intervention and the most commonly employed technique is perineal urethrostomy.

Since the long and narrow penile urethra is the common site of obstruction, male cats are overrepresented (Bass *et al*., 2005). Male cats usually suffer from distal urethral disease, including recurrent urethral obstruction

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from intraluminal plugs (Aspinall, 2004). Obstructions unamenable to catheterisation, as well as urethral strictures resulting from trauma or neoplasia may necessitate surgical interventions aimed at establishing a permanent stoma in the pelvic urethra (Hauptman, 1984). Wilson and Harrison, in 1971, described the procedure of perineal urethrostomy which is still the most employed technique. This technique involves amputating the narrow penile urethra and creating a new stoma close to the broad pelvic urethra by suturing the urethral mucosa to perineal skin (Wilson and Harrison 1971). This case report aims to reveal the effective management of urethral stricture in two male kittens through perineal urethrostomy.

Two Domestic Short Hair (DSH) cats, three and four months of age respectively, were presented with symptoms of stranguria for the past one month. The history of the older patient revealed anuria and vomiting for the past four days which was treated at a nearby veterinary hospital. Anamnesis of the second patient revealed a history of a maggot wound close to the penile area one month back. Physical examination of the patients revealed a distended urinary bladder, swollen penis, and stenotic urethral orifice. The condition was tentatively diagnosed as stenotic urethral orifice and perineal urethrostomy (PU) was resorted to as the surgical correction. The patients were initially stabilised with intravenous fluids. Antibiotic therapy was initiated with Amoxycillin sulbactam @ 20 mg/kg, pantoprazole @ 1 mg/kg, and anti-inflammatory meloxicam @ 0.3 mg/kg.

The surgery was performed under general anaesthesia using dexmedetomidine @ 2 mcg/kg, butorphanol and midazolam @ 0.2 mg/kg each, and ketamine @ 8 mg/kg. Anaesthesia was then maintained using 1-2% isoflurane in 100% oxygen through a non-rebreathing circuit. The animal was positioned in ventral recumbency and the perineum was lifted using a positioner bag. Perineum was shaved and placed a purse string suture around the anus. The surgical site was prepared by alternate scrub with povidone-iodine and alcohol. An elliptical skin incision (Fig. 1) was made around the prepuce and scrotum. The penile urethra was freed from its ventral attachments by sharp and blunt dissection to the level of paired ischiocavernous muscle (Laura and Aiden, 2013). The ventral penile ligament which is the fibrous connection between the penile body and pubis was identified and severed to free off the urethra (Fig.2). The right and left ischiocavernous muscles were incised using iris scissors at their ischial attachment to make the urethra more free. The incision was continued until paired bulbourethral glands were identified. The narrow penile urethra was amputated. The urethral lumen was thus identified and confirmed by passing a tom catheter to drain out the urine. After evacuating the entire urine, the urethra was incised on its dorsal midline up to the level of the bulbourethral

Fig.1

Fig.2

Fig.3

Fig.4

Fig.5 (Cat 1)

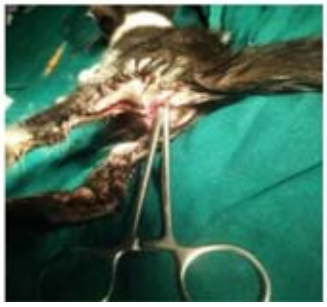

Fig.6 (Cat 2)

Fig.7 (Cat 1)

Fig.8 (Cat 2)

(Fig.1- Elliptical incision, **Fig.2**- Detached penile urethra, **Fig.3**- Dorsally incised urethra, **Fig.4**- Urethral mucosa sutured to skin, **Fig.5 & Fig.6**- Haemostat forceps to the level of box lock)**, Fig.7 & Fig. 8-** Review after 10 days**)**

gland using an iris scissor to get a spatulated strip of urethra (Fig.3). Interrupted stay sutures encompassing urethral mucosa and skin was initially placed in the proximal and distal end of the spatulated urethra using 5/0 PDS (Fig.4). Assessed the patency and size of the newly created stoma by passing a haemostat forceps which would accommodate up to the level of forceps hinge (Catriona MacPhail, 2007) (Fig. 5 and 6). Additional sutures were placed on either edge to appose the urethral mucosa with the skin. An Elizabethan collar was advised to prevent self-mutilation. Post-operatively, oral antibiotic and anti-inflammatory therapy were continued for five and three days respectively.

On day ten, the surgical site appeared clean, and the sutures were intact. The owner reported normal defaecation and urination, and the animal had a healthy appetite with normal water intake. The newly created stoma was intact and showed no signs of scalding. A follow-up phone call six months later confirmed that the animals were urinating through the new stoma. Overall, the surgical management through perineal urethrostomy was successful, and both kittens recovered without any complications.

Summary

Congenital and acquired stenosed penile urethra in two DSH kittens and its successful surgical management by perineal urethrostomy is reported.

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Conflict of interest

The authors declare that they have no conflict of interest.

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