

Urethral Prolapse in three American Pit Bull dogs and its Surgical Management

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ABSTRACT

Three American Pit Bull male dogs were presented with blood spotting from the penile region and a pink/red mass at the tip of the glans penis over a period of 6 months. All were young and had no history of breeding. The condition was diagnosed as urethral prolapse on physical examination. The condition was surgically managed by reduction, resection and urethropexy along with urinary catheter fixation. All the dogs recovered without recurrence or any major complications.

Keywords: American Pit Bull, Prolapse, Urethropexy, Purse string suture

INTRODUCTION

Urethral prolapse is uncommon and mainly affects young male brachycephalic breed dogs, although it can occur in dogs of other breeds too (Huppel *et al.*, 2011). Brachycephalic breeds have an 80% overrepresentation of urethral prolapse (Grewal *et al.*, 2024). The dog breeds in which this condition is more prevalent are American Pit Bull, Terriers, and Pugs (Santos *et al.*, 2018 and Shafiuozama *et al.*, 2013). There is a protrusion of urethral mucosa beyond the tip of the penis, leading to bleeding. Contributing factors include masturbation due to sexual arousal, excessive licking, urinary tract infections, urinary calculi, prostatic dysfunction, or developmental abnormalities (Kirsch *et al.*, 2002). Urethral prolapse can be surgically managed through mucosal reduction and purse string suture; resection and anastomosis (R&A); urethropexy and combined R&A and urethropexy technique (Healy *et al.*, 2024 and Carr *et al.*, 2014). The

present study reports the surgical management of urethral prolapse in three American Pit Bull dogs.

CASE HISTORY AND OBSERVATION

Three young male dogs of American Pit Bull dogs, aged 8 months, 12 months and 24 months, weighing 16 kg, 28 kg, and 28 kg, respectively, were presented with a history of blood spotting from the penile region and licking of the preputial region lasting from one to twenty days. Dog 1 (C1) had pink-coloured tissue (Fig. 1a), while dog 2 (C2) had dark red-coloured tissue (Fig. 1b), and dog 3 (C3) had light pink-coloured prolapsed tissue. The physical and haemato-biochemical parameters were normal in all the dogs.

TREATMENT AND DISCUSSION

Pre-anaesthesia was given through injecting xylazine hydrochloride (@ 1mg/kg) and atropine (@ 0.04mg/kg) intramuscularly. Intravenous fluid therapy was given, and the penile region was aseptically prepared for surgery. Induction of anaesthesia was done using injection propofol (@ 2-4mg/kg, till effect), intravenously. The anaesthesia was maintained using isoflurane 2-4% mixed in 100% oxygen using a partial rebreathing circuit.

The dogs were positioned in a ventrodorsal position for surgery. The preputial cavity was flushed with 1% betadine 2-3 times. The penis was manually extended from the prepuce, and a catheter was inserted into the urethra.

In C1, the urethropexy was done using 3-0 monofilament polydioxanone suture (3 sutures) (Fig. 3a). In C2, the prolapsed urethra was dark red/black in colour so resection was done, followed by urethropexy

(single suture) (Fig. 3b and c). In C3, where the prolapsed tissue was small and was presented early, the catheter was passed to repose the urethra, and the catheter was fixed to the glans penis using nylon sutures.

Urethropexy was done by inserting the needle through the full thickness of penile tissue caudal to intraluminal surface and taking out from the urethral orifice (Fig. 2a). The needle was then passed back from the urethral orifice and out of penis close to the first bite (Fig. 2b). A knot was applied (Fig. 2c). Similarly, 1-3 sutures were applied in different directions as per the requirement. The urinary catheter was fixed (which acted as a second suture for urethropexy) and left in place for one week in all 3 dogs.

Post-operatively, the cases were treated with antibiotic injection cefotaxime (@ 20mg/kg) twice daily for 5 days, analgesic injection meloxicam (@ 0.2mg/kg) once daily for 3 days intramuscularly, and application of soframycin and lignocaine jelly on the glans penis. An Elizabethan collar was advised to prevent self-mutilation.

All the dogs recovered uneventfully. Mild blood spotting was reported in the C2 dog for 2 days, which stopped spontaneously. No recurrence of prolapse was seen in any of the cases during the one-to-3-month follow-up period.

Brachycephalic breed dogs are prone to urethral prolapse due to abnormal urethral development and increased intra-abdominal pressure from respiratory efforts. This, in turn, impairs venous return in the pudendal vein, causing engorgement of the corpus spongiosum tissue surrounding the distal urethra (Rabidi *et al.*, 2014). Another reason quoted is that intact young male dogs may have increased sexual behaviour, which makes them prone to urethral prolapse (Carr *et al.*, 2014). Reoccurrence of urethral prolapse after surgical resection is reported to be common, but the follow-up period was shorter in this study. Castration may also be recommended to reduce excessive sexual

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behaviour in young males (Bleedorn and Bjorling, 2011), but it is reported to have no significant effect on recurrence. Recurrence can be reduced by the use of potent analgesics and sedative postoperatively. In C3, where the condition was fresh, only catheter fixation was successful, while in C2, where there was necrosis of prolapsed urethral tissue, resection was successful, and in C1, with pink coloured chronic prolapse, only urethropexy was helpful (Kirsch *et al.*, 2002). Recently, the combined resection-anastomosis and urethropexy technique has been proven to significantly reduce the recurrence rate (Grewal *et al.*, 2024).

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Table I: General signalment, surgical management and outcome					
Case No.	Age	Body weight	Presentation	Surgical management	Outcome
C1	8	16	Pink colour prolapsed tissue (20 days)	Catheterization and Urethropexy	Excellent with no recurrence for 3 months
C2	12	28	Dark red /black colour prolapsed tissue	Resection and Urethropexy	Excellent with no recurrence for 1 month
C3	24	28	Light pink colour prolapsed tissue (1 day)	Repositioning and Catheterization	Excellent with no recurrence for 1 month



Fig. 1a: Prolapsed urethra in C1

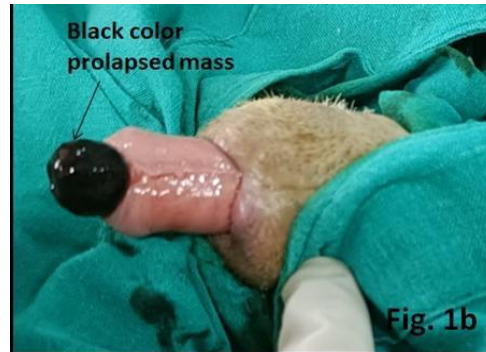


Fig. 1b: Prolapsed urethra in C2

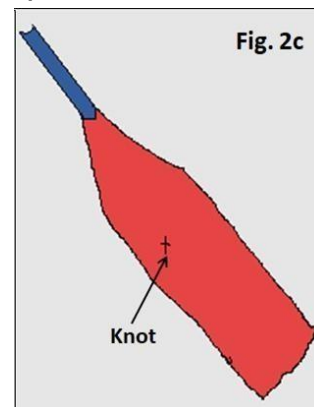
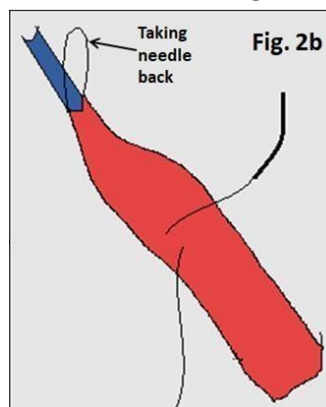
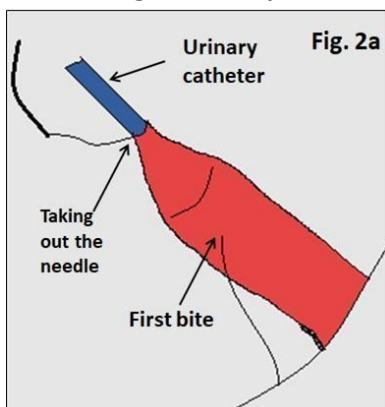


Fig. 2: Technique of urethropexy performed; Urinary catheter passed through urethral orifice to reposition the urethra. PDS 3-0 suture with a swaged-on needle inserted at first bite; Fig. 2a: through penile tissue and taken out at urethral orifice; needle back inserted from orifice and taken out near first bite (Fig. 2b); A knot was tied and sutures were cut (Fig. 2c).

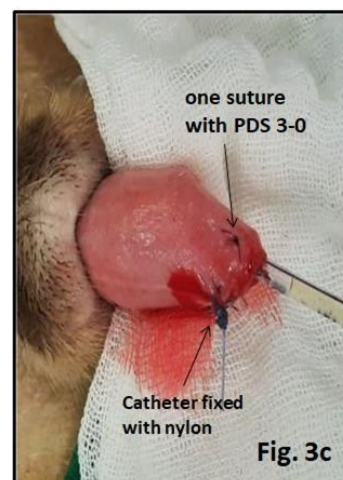
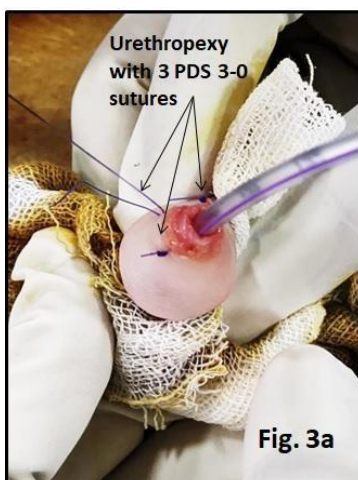


Fig. 3: Urethropexy in C1 with 3 sutures applied (Fig. 3a). Resection of prolapsed urethra in C2 (Fig. 3b) and later urethropexy with a single suture (Fig. 3c).