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Case Report

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Management of severe penile swelling associated with urethropexy in an English bulldog

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Abstract: A 10-month-old, unilateral cryptorchid, male English bulldog underwent urethropexy for the treatment of urethral prolapse. Six hours after surgery the dog developed dysuria, haematuria, discomfort, severe penile oedema, inflammation, and inability to extrude the penis from the prepuce. Urethral patency was restored by placing an indwelling catheter into the urethral lumen. Penile swelling was managed with cold and warm compresses for 2 days, and antibiotics, nonsteroidal anti-inflammatory drugs, and opioids for 4 days. Complete resolution of the swelling was evident by 3 days after surgery. One year after surgery the dog was reported to be in good health.

Key words: Dog, urethral prolapse, urethropexy, complication, swelling

1. Introduction

Prolapse of the distal urethral mucosa through the external urethral orifice of the penis is an uncommon condition that occurs mainly in young, intact, male brachycephalic breeds, with English bulldogs overrepresented (1–3). Increased intra-abdominal pressure related to brachycephalic airway obstructive syndrome, abnormalities in urethral development, dysuria secondary to infection, urolithiasis, or sexual excitement are considered predisposing factors for the development of urethral prolapse (4–6). Treatment of urethral prolapse depends on the condition of the prolapsed tissue, the severity of clinical signs, and the presence of other abnormalities including respiratory distress, infection, urolithiasis, or congenital abnormalities. Surgical treatment includes manual reduction, surgical resection, or urethropexy (1–3,6).

The aim of the present report is to describe for the first time in the literature the management of severe penile swelling and inflammation associated with urethropexy for the treatment of urethral prolapse in an English bulldog.

2. Case history

A 10-month-old male, unilateral abdominal cryptorchid, English bulldog weighing 16 kg underwent urethropexy (Figure 1) for the management of urethral prolapse. The dog also underwent, in the same anaesthetic time, overlong palate excision, everted laryngeal saccule removal, and widening of stenotic nares for the treatment of brachycephalic airway obstructive syndrome and laparoscopic assisted unilateral cryptorchidectomy and castration. Urethropexy was achieved by placing 2 equally spaced horizontal mattress sutures of 2/0 polydioxanone in a taper cut V-34 needle (PDS-II, Johnson and Johnson) around the penile circumference from the external surface the penis into the urethral lumen and back from the lumen to the external surface of the penis (Figure 2). The dog recovered uneventfully from anaesthesia and 6 h after surgery developed dysuria, haematuria, discomfort, severe penile oedema, inflammation, and inability to extrude the penis from the prepuce (Figure 3). A soft 8 Fr indwelling urethral catheter was inserted into the urethral lumen to restore patency and secured in place with interrupted sutures placed through the preputial skin and adhesive tape encircling the catheter. Cold compresses were applied to the prepuce to help oedema resolution for 24 h followed by hot compresses for another 24 h. The dog was given pethidine (Petidina Cloridrato; Molteni Farmaceutici) at a dose of 1 mg/kg intramuscularly and carprofen (Rimadyl; Pfizer) at a dose of 2 mg/kg per os for 4 days. Cefoxitin (Mefoxil; Vianex) at a dose of 20 mg/kg intravenously was also administered for 4 days. Swelling and inflammation were significantly reduced 24 h after surgery, allowing penile extrusion from the preputial cavity (Figure 4). Complete resolution of the swelling was evident by 3 days after surgery and haematuria was noted for 5 days after surgery. The dog was discharged from the hospital 4 days after surgery. The dog was re-examined at 10 days and 1 month after surgery and found to be free of clinical signs of urethral prolapse. Respiratory function also was significantly improved. One year after surgery, telephone

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Figure 1. Urethral prolapse is evident in an English bulldog.

Figure 3. Urethropexy was performed by placing 2 evenly spaced polydioxanone sutures into the urethral lumen from the external surface of the penile wall. A grooved director inserted into the urethral lumen to prevent penetration by the needle of the opposite urethral side can also be seen.

communication with the owner revealed that the dog was urinating normally and no signs of penile swelling or prolapse were present.

3. Discussion

Increased intra-abdominal pressure related to upper airway obstructive syndrome may have played a role in the development of urethral prolapse in the dog in the present report (5,6). Urethropexy is a procedure that has been recently described for the surgical reduction of urethral prolapse in 5 dogs (3,7). Urethropexy is considered a simple technique with low morbidity that requires less surgical and anaesthetic time and minimal equipment compared to the previous resection technique (3). Postoperative complications of this technique include mild swelling,

Figure 2. Severe penile swelling and inflammation associated with urethropexy 8 h after surgery. Extrusion of the penis from the preputial cavity was not possible. An indwelling urethral catheter was placed in the urethra.

Figure 4. Marked resolution of the swelling was noted 24 h after surgery.

minor haemorrhage at the surgical site, and prolapse recurrence in 2 of the 5 cases reported (3,7). In the case presented here, severe oedema and inflammation of the penis associated with urethropexy are reported. It seems that severe penile swelling may be attributed to significant trauma to the pars longa glandis and corpus spongiosum penis by the big taper cut V-34 needle that penetrated this part of the penis to achieve urethropexy, in contrast to other reports where a taper-point needle used for urethropexy resulted in mild swelling (3,7). Taper point needles are less traumatic to adjacent tissues and vessels compared to taper cut needles (8). This penile traumatisation in the present study may have resulted in oedema formation of the penis and urethra leading to stranguria and dysuria due to possible urethral obstruction (9). Urinary catheter placement restored urethral patency. Based on the findings of the study presented here, an indwelling urethral catheter should be placed in every urethropexy procedure for 24 h. Medical treatment provided also contributed to oedema

resolution within 3 days of surgery. Surgical correction of abnormalities related to brachycephalic airway obstructive syndrome and castration were also performed in the dog in the present report to reduce the likelihood of recurrence as these factors are considered predisposing for urethral prolapse (6).

In conclusion, severe penile swelling and inflammation should be included in the complications of urethropexy in the dog. This complication resolved with medical management. Urinary catheterization was deemed necessary to restore urethral patency.

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