



A Case Report of A Urinary Bladder Marsupialization to correct Obstructive Urolithiasis in a 3-Month-Old Boer Goat (*Capra hircus*)

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ABSTRACT

A 3-month-old intact male Boer caprine kid weighing 22.3Kg, presented to the Large Animal Hospital, School of Veterinary Medicine (SVM), with a primary complaint of stranguria for approximately 8 days. The animal had been treated one week prior to presentation by a private clinician who amputated the vermiform appendage which offered temporary resolution of the clinical signs. Within two days however, the animal was once again observed with stranguria and the clinician referred the animal to the SVM for further treatment. On presentation, the patient had multiple anomalies including, paraphimosis, a swelling at the base of the penile shaft and tachycardia. Radiographic examination revealed a distended bladder. No radio-opaque calculi were noted along the urethra. The patient required urgent surgical intervention during which he was maintained under anaesthesia using a continuous rate infusion of ketamine and lidocaine to which xylazine was subsequently added after a cystotomy was performed. The patient recovered with minimal post-operative complications. Although not a common procedure in farm animals due to its aftercare, bladder marsupialization was deemed feasible in this case since the patient was reared with some sentimental value rather than entirely for production. This procedure should thus be considered for pet livestock animals or in salvage situations where a perineal urethrostomy is deemed non-curative.

SIGNALMENT

A 3 month old, male, intact, Boer, Caprine, weighing 22.3Kg.

HISTORY

- A veterinarian saw the patient 10 days prior and performed a urethral process amputation who reobstructed the next day.
- Patient became diarrheic this morning.
- The veterinarian unsuccessfully attempted to pass a urinary catheter in retrograde fashion the previous day (23/01/19).
- This particular animal was brought as the 1st of his breed on the farm to which he belongs. The owner views him as a pet as opposed to a production animal.



Figure 1. Lateral pelvis flexed hip radiograph



Figure 2. Dorsoventral abdominal radiograph



Figure 3. Lateral abdomen hip extended radiograph

PHYSICAL EXAMINATION ANOMALIES

Distance:

- The patient was excessively vocalizing & dribbling few drops of urine
- Paraphimosis
- Swelling at the base of the penis and caudal abdomen

Hands on:

- A painful turgid mass detected on palpation of the caudal abdomen.
- Ventral oedema of the caudal abdominal tissues.
- Soft tissue swelling of the proximal 1/3 of the hindlimbs.
- Ventral edema of the soft tissues at the base of the penis and caudal abdomen.

DIFFERENTIALS

- Obstructive Urolithiasis
- Urethral rupture
- Urethral stricture
- Prostatic enlargement
- Occlusive/ compressive prostatic/ paraprostatic cysts

DIAGNOSTICS

- Radiographs (Figures 1, 2, 3)
- Pre-surgical CBC & Biochemistry (Tables 1 & 2)

Table 1. CBC Anomalies

Parameter	Result	Range	Interpretation
WBC	14.45x10 ⁹ /L	6.0-14.0x10 ⁹ /L	High end of normal
Segs	8.25x10 ⁹ /L	1.20-7.20x10 ⁹ /L	Mildly elevated
Bands	0.28x10 ⁹ /L	Rare	Mildly elevated

Table 2. Biochemistry Anomalies

Parameter	Result	Range	Interpretation
Urea	50.5	4-8.6mmol/L	Significantly elevated
CK	1538	0-100U/L	Moderately elevated
Creatinine	1127	54-123mcmol/L	Significantly elevated
GGT	49	0-30U/L	Moderately elevated
Glucose	7.25	2.4-4.0mmol/L	Moderately elevated
Magnesium	1.90	0.8-1.3mmol/L	Mildly elevated

Table 3. Urinalysis Anomalies (Routine Analysis)

Colour	Blood	Protein	pH	Specific Gravity
Brown, cloudy	++++	+++ (3g/L)	8.0	1.011

Table 4. Urinalysis Anomalies (Microscopic Analysis)

RBC	WBC	Epithelial Cells	Crystals	Other
TNTC	8-10/hpf	0-1/hpf	Struvite	Amorphous cellular debris

TREATMENT

- Perineal urethrostomy

DISCUSSION

- Another study conducted in India found that in a population of 300 goats over 3 years, 4.66% were diagnosed with obstructive urolithiasis. Out of those, 100% were male and 71.42% were castrated.^[6]
- Another study conducted by the Faculty of Veterinary Sciences and Animal Husbandry of Sher-e- Kashmir in India found that out of all the reported incidents of obstructive urolithiasis in India over 5 years, that 49.83% were in goats.^[7]
- Although a perineal urethrostomy was decided upon, the presence of gritty material blocking the proximal urethra led to bladder marsupialization. Because of this switching and being a teaching case the procedure took 2 hours but can be completed in 30 minutes or less.
- Aetiology of obstructive urolithiasis is multifactorial however diet plays a major role.^[1]
- The total cost of the procedure including all drugs and materials was approximately \$25USD.
- Patient is alive and thriving currently 1 year later with diet modification.

CONCLUSION

- Obstructive urolithiasis is a prominent issue resulting in heavy economic losses to the livestock industry.^[8]
- Bladder marsupialization using continuous rate infusion anaesthesia is a quick and cost effective method of salvaging productivity in otherwise fatal obstructive urolithiasis cases in small ruminants.



Figure 4. Post-op perineal urethrostomy site.



Figure 5. Bladder marsupialization & Perineal urethrostomy site 2 weeks post op.



Figure 6. Perineal urethrostomy site 2 weeks post op showing tissue contraction.

Contact

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