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Urethral process excision to relieve urinary obstruction in castrated male goats: A case study

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Abstract

Four castrated male goats about 2-5 years old with the history of anuria, signs of colic, frequent getting up and lying down were presented. All the clinical parameters were slightly elevated from the normal range. The haematological parameters were within the normal limits. Radiographic examination was proved better for confirmation of location of obstructive urolithiasis. All the male goats were surgically managed by excision of urethral process along with post-operative medicinal management. All the cases were recovered uneventfully without complications.

Keywords: Goat, urethral process, urolithiasis

1. Introduction

Obstructive urolithiasis is a disorders of small ruminants which is frequently seen in castrated males. In castrated male goat probably due to feeding of large amount of grains leading to increase sediments in urine. The urethra of the male ruminant is tortuous and narrow, thus facilitating lodging of uroliths at the sigmoid flexure, but more commonly in the urethral process of small ruminants (Radostits *et al.*, 2000) [6]. Such cases of obstructive urolithiasis in castrated male goats are discussed in detail.

2. Materials and Methods

A 2-5 years old four castrated male goats were presented with history of anuria since 2-12 hours with signs of colic like kicking at belly, frequent getting up and lying down. On clinical examination all the clinical parameters i.e. rectal temperature (102.8-104.0 °F), heart rate (62-78 beats/min.) and respiration rate (23-32 breaths/min.) are slightly elevated from the normal range. The haematological parameters were within the normal limits. Kidney function parameters *viz.* Blood urea nitrogen (42-78 mg/dl) and Creatinine (1.6-2.3 mg/dl) were slightly elevated. On palpation of abdomen the urinary bladder was found distended in all the cases. The B-mode ultrasonography using 3.5 - 5.0 MHz convex probe on right side left paralumbar fossa revealed distended urinary bladder in all male goats, but urinary calculi does not recognized. However, radiography showed one or more calculi lodged into urethral process (Fig.1). Hence, the cases were confirmed for urolithiasis. The animal were restrained in lateral recumbency and the penis was grasped through the skin at the base of scrotum and then forced cranially to expose the glans penis. The 2% lignocaine hydrochloride gel was used for surface anaesthesia in all cases. Then using the aseptic precautio the urethral process was excised along with calculi (Fig. 2 & Fig. 3). Immediately the urine flow was started in all animals and they were relaxed. Post-operatively male goats received antibiotic, analgesic and anti-inflammatory drugs for three days. Ammonium chloride @ 200 mg/kg b.wt. were given orally for 15 days in all the cases. All the male goats were recovered uneventfully without any complications.

3. Results and Discussion

In the present study, all the cases of urinary obstruction were reported in castrated male goats, this finding was similar with study of Tamilmahan *et al.* (2014) [7]. This may be due to reduced production of testosterone after castration which leads to hypoplasia of urethral orifice (Belknap and Pugh, 2002) [2]. Vitamin A deficiency along with decreased water intake due to shortage of green fodder might have contributed to urolith formation (Radostits *et al.*, 2000; Gugjoo *et al.*, 2017) [6, 5]. Kidney function parameters were not severely altered that might be due to early presentation of the cases after anuria.

The diagnosis of urolithiasis was based on a complete history and physical examination, complemented by ultrasonography (Gazi *et al.*, 2014) [4]. Besides these diagnostic approaches Radostits *et al.* (2000) [6] included radiography as tool for diagnosis of urolithiasis, which is in agreement with present study. Radiography was proved better to locate the exact site of calculi. In the current study, the uroliths were lodged into the urethral process in all the animals. Similarly, Ewoldt *et al.* (2006) [3] reported in a retrospective study that 86% of the cases had the uroliths located in the urethral process. Local anaesthetic effect of lignocaine HCL gel was found good in order to alleviate pain. In the current study, urethral process was simply amputated after exposing from penile sheath while Amarpal *et al.* (2004) [1] carried out amputation of urethral process by subcutaneous incision. Immediately after amputation of urethral process the urine flow was started in all animals while Gugjoo *et al.* (2017) [5] noticed resumption of urination in 50% of animals. Urinary acidifier was given in all the cases in order to decrease the chances of recurrence. In the present study, no recurrence of urolithiasis was observed up to one year post-operatively.

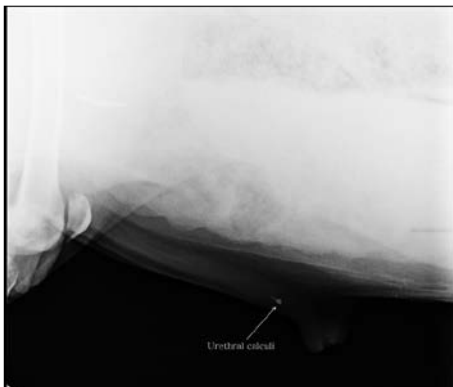


Fig 1: Radiograph showing urethral calculi



Fig 2: Excision of urethral process



Fig 3: Calculi inside urethral process

4. Conclusion

Our findings indicated that urethral process excision is a quick, easy, field applicable and reliable method for management of obstructive urolithiasis in male goats if uroliths are found only within urethral process. Post-operative medicinal management also play an important role for prevention of further uroliths formation.

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