

SURGICAL INTERVENTION OF HYPOSPADIAS ASSOCIATED WITH URETHRAL DIVERTICULUM IN A MALE GOAT KID: A CASE REPORT

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ABSTRACT

A four-month-old male goat kid weighing about 18kg was brought to the Surgery Section, University College of Veterinary and Animal Sciences, The Islamia University of Bahawalpur, Pakistan with a complaint of oliguria, dysuria and stranguria accompanied by urethral pouch swelling. The owner noticed that kid was vocalizing and straining on urination. Physical examination revealed formation of a penile urethral diverticulum. On diverticulum palpation subcutaneous leakage was noticed from fluctuating pocket. Incision on the skin of diverticulum revealed penile hypospadias condition. Permanent type of urethrostomy and urethral diverticulectomy was carried out. Simple interrupted sutures were applied to approximate the urethral layer with the skin using Mersilk (2-0). Urethrostomy site was healed without any post-operative complication and goat kid was reported urinating properly.

Keywords: Goat kid, Urethral diverticulum, Hypospadias, Urethrostomy

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INTRODUCTION

Hypospadias is an infrequently occurring inherited anomaly of urethra which has been documented in many animal species. Hypospadias is classified as penile, perineal, scrotal and anal ones on the basis of location of abnormal urethral opening. In a few cases penis may be undersized and abnormal (Alam et al. 2005). However, congenital defects of the urinary tract are very rare in farm animals (Dennis and Leopold 1979). In hypospadiac condition external male urethra is imperfectly closed (Radostits et al. 2007).

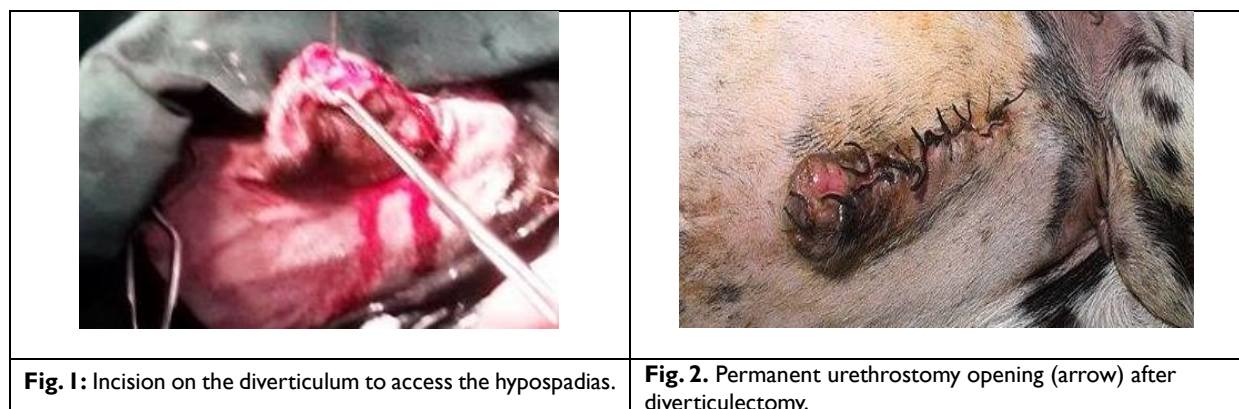
The etiology of the hypospadias is not so clear, it seems to be multi-factorial, may be linked with genetics, certain hormonal fluctuations and environmental factors in affected animals (Silver 2000). Hypospadias is also considered to be related with defects of androgens production and timing of receptor functioning during the period of male sexual differentiations at early periods of gestation. In majority of ailments the cause of this congenital anomaly is not fully known. Treatment with progesterone during gestation period may also be involved in its occurrence (Sakhaee and Azari 2009). Some other conditions may also be found with hypospadias in which genitals are positioned abnormally in male animals. Hypospadias conditions are generally linked with forward curvature of penis, referred to as chordee (King S and Beasley 2012). Risk of occurrence of hypospadias and other associated genetic problems may be increased due to certain endocrinological defects, such as malfunction of the fetal testes to produce sufficient level of testosterone or stoppage of body to react to that hormone (Brouwers et al. 2006). One of the genetic factors may be linked with increased occurrence of this condition in males with specific genetic defects found on X chromosome which is contributed from maternal side (Loes et al. 2010).

Surgical intervention is considered for treatment of the hypospadias in affected species (Boothe 2002). In male animals single or multiple urethral diverticula may be present. Under local anesthesia surgical intervention is carried out to correct the condition (Ali et al. 2013, Bokhari 2013). The present case report illustrates a typical case of hypospadias associated with urethral diverticulum in a male goat kid which achieved complete recuperation with surgical intervention.

Case History and Clinical Findings: A four-month-old male Beetle breed goat kid of weighing about 18 kg was brought to the Surgery Section, University College of Veterinary and Animal Sciences, The Islamia University of Bahawalpur, Pakistan with a complaint of oligouria, stranguria and dysuria accompanying ventral urethral swelling. The goats were housed under standard environmental conditions. Urethral diverticulum was found on the ventral area

of the penis just caudal to the preputial opening (Fig. 1). Dribbling of urine from the urethral orifice was observed by manual pressure on diverticulum. Physical examination revealed that rectal temperature, pulse rate and respiration rate (TPR) was in normal range. The kid was sedated by administering xylazine hydrochloride (Xylaz®, Farvet) at dose rate of 0.05 mg/kg IM. Before sedation atropine sulphate was administered intramuscularly at the dose rate of 0.25 mg/kg body weight, in order to avoid bradycardia and also to decrease the gastric and the tracheal secretions.

The surgical site around the skin of the swollen area was clipped, shaved and was aseptically prepared using Pyodine® (Pyodine Antiseptic Solution, Brookes Pharmaceutical Lab., Pakistan, Ltd.) and finally draped with surgical shroud for surgery. Surgical intervention was carried out in dorsal recumbency. An elliptical incision on skin was made on ventral side of urethral diverticulum. After separation of subcutaneous tissue, an intense dissection was made upto preputial sheath. Urethral diverticulum was exposed up to its caudal end and resected with scalpel blade. Penile urethrostomy was done at the caudal end of the defect by applying simple interrupted sutures on urethral epithelium with skin by using 2-0 mersilk. The skin after diverticulectomy was closed by applying simple interrupted sutures (Azari et al. 2010) using 2-0 Mersilk (Fig. 2).



RESULTS AND DISCUSSION

Post-operative antibiotic therapy, i.e., Velocef® 1g deep I/M for 7 days along with anti-inflammatory drug, Loxin® (Selmore Pharma., Pakistan) were administered daily. The suture line was daily cleaned with Pyodine® (Brookes Pharmaceutical Lab., Pakistan, Ltd). Skin sutures were removed 12th day after surgery. Anamnesis and follow up data regarding the case was collected from owner of animal. After 2 weeks of post-operative period no complications were seen such as wound infection, wound dehiscence, and dysuria in the fully recovered kid.

Hypospadias a very serious type of congenital urethral defect is seen in young male goats. In this condition urethra opening may be found on the ventral aspect of penis and is visible outside of preputial midline (Smith, 1994). Urethral diverticulum is sporadic in occurrence and could be identified simply, but sometimes it is very difficult to correct (Johnson et al. 1980, Karras et al. 1992). In this case, urethrostomy and resection of diverticulum was carried out to correct the hypospadias and diverticulum of urethra in male goat kid. Previously similar surgical interventions were used for correction in different species including goat kids and cow calves (Geccelep and Alkan 2000, Leung and Robson 2007, Bokhari 2013). Local swelling and associated signs of oligouria, dysuria and stranguria found in this case have also been recorded (Temizsoylu 2005, Magda and Youssef 2009).

Conclusion: The aim of permanent urethrostomy and diverticulectomy operations in this presented goat kid was related to give relief from dysuria, stranguria and other associated complications following the hypospadias and also as economic purpose for animal owners. Since the operated animal may be in high risk for development of ascending infections in urogenital tract, hence it was suggested that post-operative antibiotic therapy was crucial for treatment success.

Authors' contributions: This case was operated by AQ and RH. The manuscript was prepared by FA and MTG. All authors read and approved it.

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