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Hypospadias is associated with the urethral diverticulum in two goat kids: A case report

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Abstract

The objective of the study was to analyze the efficacy of surgical management in goat kids having hypospadias associated with urethral diverticulum. Two male goat kids ranging between 6 to 8 months were presented to civil veterinary hospital Karampur, Tehsil Mailsi, District Vehari, Punjab province, Pakistan between January 2019 to April 2019. The major complaint was the leakage of urine into ventral abdominal wall subcutaneous tissues and prepuce. In both kids, after opening of diverticulum in both kids two false urethral openings were evident. Among them, one was ligated while the other was surgically aligned with penile urethra for permanent urethrostomy. The urethral lining was sutured with skin in simple continuous pattern by black silk and afterwards two weeks postoperative care resulted in recovery of goat kids.



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Introduction

Hypospadias is a false closure of the external male urethral orifice [1] due to failure of fusion of the urethral grooves during process of elongation of phallus [2]. This results in opening of urethra anywhere in one or more than one anatomical location due to hypoplasia of corpus cavernosum urethra [3]. The exact aetiology of hypospadias is not known, but this seems to be in relation to genetic, endocrinological and environmental factors [4]. However, more specifically due to defect in androgen receptors or metabolism occurs to extra or intrauterine factors has been reported [5]. Hypospadias is classified on the basis of anatomical location of urethral opening which may be glandular, penile, scrotal, perineal or anal [2]. The surgical management should be adopted as a best possible solution of hypospadias [6]. The other congenital abnormalities which can occur in correlation to hypospadias are; urethral diverticula, urethral stenosis, testicular and penile hypoplasia [3]. This case study elaborates clinical signs and surgical management of hypospadias associated with penile urethral diverticulum in two goat male kids.

Material and Method

Case Presentation

Two male goat kids ranging between 6 to 8 months were brought to civil veterinary hospital Karampur, Tehsil Mailsi, District Vehari, Punjab province, Pakistan with major complaints of stranguria and dysuria. Temperature, pulse and respiration were in normal range. Detailed clinical examination revealed bulged pouch i.e. diverticulum (Fig. 1) below the penile tip associated with penile hypoplasia. Smacking and dribbling of urine was clearly seen from prepuce and urethral process in contact with preputial sheath. Digital manipulation resulted in dribbling of small quantity of urine from external urethral orifice possibly because of adhesions between penis and prepuce sheath. Smacking of urine was evident from preputial pouch as well.

Surgical Procedure

Same surgical procedure was followed in both kids in lateral recumbency. Sedation was induced by xylazine hydrochloride (XYLAZ, Farvet) @0.05mg/kg IV. Clipping of hairs followed by scrubbing was done with 7.5% povidone iodine in caudal abdominal and perineal region. Regional anesthesia was applied

using 2% lignocaine (XYLOCAINE, Barrett Hodgson (pvt) Ltd), local infiltration in ring block pattern around swollen preputial bulged pouch like cavity. The surgical procedure was initiated by a small straight incision on the midline of the bulged pouch from skin to subcutaneous tissue results in opening of bulge in book like pattern (Fig. 2). This opening revealed two false urethral openings, one was ligated (Fig. 3) while other was surgically aligned with penile urethra for permanent urethrostomy opening (Fig. 4). Urethral epithelium was sutured with skin in simple continuous pattern by silk with stringent two weeks post-operative care. Postoperative treatment included intramuscular injection of Pencillin-streptomycin (penivet 5g, star lab) @10mg/kg for 5 days followed by the wound cleansing by normal saline and application of dermagel (Ghazi brothers Pvt ltd) for two weeks. This resulted in recovery without any complication.



Fig.1: Eight-month-old male goat kid having hypospadias in collaboration with urethral diverticulum.



Fig. 2: Incision of the diverticula for identification of hypospadiac opening.

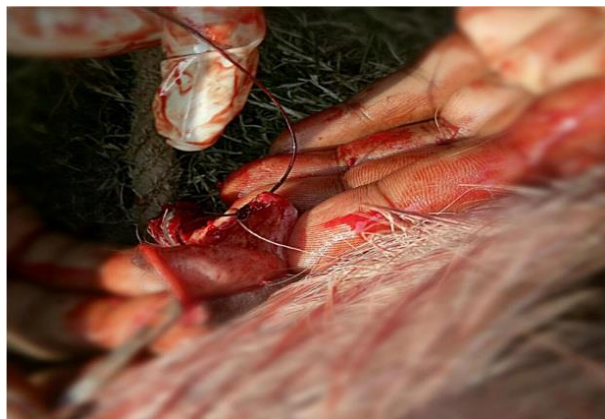


Fig. 3: Closure of hypospadiac opening.

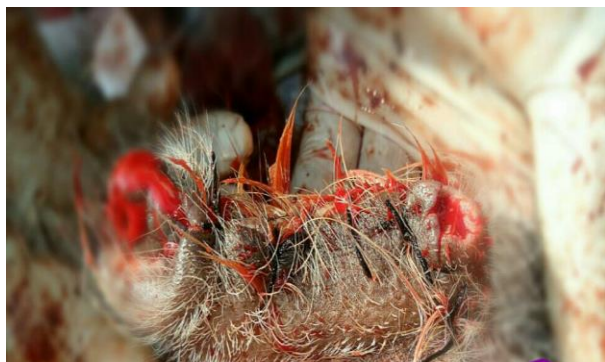


Fig. 4: Development of opening as a result of urethrostomy.

Discussion

Hypospadias is one of the most common congenital anomalies in human although, to lesser extent reported in dogs, sheep, cattle and goats as well [7]. Alam et al. (2005) reported that as a result of urethrostomy of three hypospadiac calves, calves turned to normal urination postoperatively [3]. This study is in accordance with the present study despite partial wound dehiscence in one calf out of three calves under consideration in study. Early postoperative complications preferably include

bleeding, hematomas, infections and dehiscence of wound [8, 9]. The other complications include; urethral stricture, urethrocele or urethrocutaneous fistula [10]. Alam et al. (2005) reported that close examination of the genitalia of hypospadiac calves revealed that they were not hermaphrodites or pseudohermaphrodites [3]. Although, hypospadiac animals are not considered fit for breeding [11]. Alam et al. (2005) used nylon for suturing of urethra to skin, Monofilament non absorbable suture by Bjorling (2003) [12] and absorbable suture material by Fossum (2002) was in accordance with the present study with few modifications [11].

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