



A Case Report on Surgical Management of Hypospadias in a Day-Old Goat Kid

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Abstract

The following case report describes a case of hypospadias in a day-old male kid and its surgical management. The animal was presented to the Referral Veterinary Polyclinic, Indian Veterinary Research Institute, Izzatnagar, Bareilly Uttar Pradesh with a history of swelling at the pre-scrotal region. Physical examination of the animal was done and the swelling was palpated. A fluid filled subcutaneous pocket was present on the pre-scrotal region and urine was dripping from the prepuce on pressing the pocket. For the treatment, permanent urethrostomy was performed under local infiltration of lignocaine hydrochloride. The kid recovered without any postoperative complications.

Keywords: Goat Kid, Hypospadias, Urethrostomy



Introduction

Congenital defects associated with urinary tract are not common in farm animals (Dennis and Leipold, 1979). Hypospadias is a rare congenital malformation of the urethra in calves, goats, lambs as well as in humans. Hypospadias results from failure of fusion of the urogenital folds and incomplete formation of the penile urethra (Boothe, 2003). Hypospadias results from imperfect closure of the external male urethra (Radostits *et al.*, 2007). Urine may accumulate within the preputial region and subcutaneous space and leading to balanopostitis. The external urethral orifice can open anywhere on the ventral aspect of the penis.

The most frequently reported defects of the urinary tract in goats are intersexes, testicular hypoplasia and unilateral cryptorchidism (Al-Ani *et al.*, 1998). Cryptorchidism was found to be the most common congenital anomaly along with hypospadias. Hypospadias can be classified based on the location of the external urethral orifice and it can be glandular, penile, scrotal, perineal and anal. The aetiology of hypospadias is not well known, may be due to multiple factors, which are genetic, endocrinological, and environmental (Silver, 2000). Surgical reconstruction should be considered for treatment of hypospadias (Boothe, 2003).

History and Clinical Examination

A day-old male goat kid was presented to the Referral Veterinary Polyclinic, Indian Veterinary Research Institute, Izatnagar with a history of swelling at the pre-scrotal region. Physical examination of the animal was done. Animal was alert and all the vital parameters were in normal range. On palpation of the swelling, subcutaneous accumulation of urine was suspected. Ectopic penis was present between the actual penis and the scrotum. Urine was found dripping from the prepuce while pressing the subcutaneous swelling. No other congenital anomaly was coexist in this case. It was decided to perform permanent urethrostomy under local anaesthesia.

Surgical Procedure

The kid was placed in dorsal recumbency. The perineal region and caudal abdomen were shaved properly and scrubbed with savlon. Lignocaine hydrochloride (1%) was infiltrated around the defect and the area was prepared for aseptic surgery. An incision was made on the midline of the defect. Urethral opening was located. Permanent penile urethrostomy was performed by suturing the urethral mucosa to the skin with 1-0 polyamide suture in a simple interrupted pattern. Postoperative enrofloxacin 5 mg/kg body weight IM for 5 days and meloxicam 0.5 mg/kg body weight IM for 3 days were administered. Daily antiseptic dressing of the surgical wound was carried out and sutures were removed on 10th postoperative day. There were no complications after surgery and the animal was urinating normally.



Figure 1: Pocket formed due to accumulation of urine, ectopic penis



Figure 2: Hypospadias opening



Figure 3: Permanent penile urethrostomy

Discussion

Hypospadias is a congenital defect of urethra seen in young phenotypically male goats. In hypospadias, the urethra remains open on the ventral surface of the penis and is visible externally on the preputial midline (Smith and Sherman, 1994). After cryptorchidism hypospadias is the second most common congenital abnormality in humans (Pierik *et al.*, 2002) With an incidence of 1:300 (Djakovic *et al.*, 2008; Leung and Robson, 2007), but it occurs rarely in domestic animals (Bleul *et al.*, 2007). Surgical correction is the only possible treatment for hypospadias (Leung and Robson, 2007). In this case permanent urethrostomy was performed under local infiltration of lignocaine hydrochloride. Many procedures have been designed for the repair of hypospadias on the basis of anatomical position of urethral orifice and kind of abnormalities (Djakovic *et al.*, 2008; Leung and Robson, 2007).

Alam *et al.* (2005) reported surgical treatment of 3 hypospadiac calves by urethrostomy and castration. In the present case urethrostomy was done but castration was not performed. Due to paucity of information, it is yet to be confirmed whether hypospadias is inherited in sheep and dogs (Dennis, 1974; Hayes and Wilson, 1986). Radostits *et al.* (2007) suggested that no genetic influence could be suspected and attributed to unidentified aetiology. In cattle hypospadias is attributable to a genetic defect in only 25% of affected animals (Bleul *et al.*, 2007). Similarly, only 31% of men with hypospadias have a genetic or chromosomal defect (Boehmer *et al.*, 2001). Affected animals should be castrated because a heritable component for hypospadias cannot be ruled out, (Bleul *et al.*, 2007). Early complications of hypospadias repair include bleeding, hematoma, wound infection, wound dehiscence and urinary tract infection (Stokowski, 2004; Synder *et al.*, 2005). Some late complications include urethracutaneous fistula, urethral stricture, balanitis and urethrocele (Nuininga *et al.*, 2005; Soomro and Neal, 1998). Alam *et al.* (2005) stated that postoperative complications in hypospadias calves included partial wound dehiscence in one out of 3 calves, resulting in second intention healing of the incision. In this case penile urethrostomy was done to create a permanent passage for urination. No postoperative complications were observed.

Conflict of Interests

There is no conflict of interest.

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