Case Report https://doi.org/10.47748/tjvr.1027439

TJVR 2022; 6 (1): 33-36

Turkish Journal of Veterinary Research

https://dergipark.org.tr/tr/pub/tjvr

e-ISSN: 2602-3695

A case of penile urethral diverticulum in a male crossbreed kid

Ali Belge[1] Rahime Yaygingül[1] Onur Özgün Derincegöz[2]

[1] *Department of Surgery, Faculty of Veterinary Medicine, Aydin Adnan Menderes University, Aydin, Turkey*
[2] *Vet Academia Veterinary Clinic, Izmir, Turkey*

Correspondence: *Ali Belge (abelge@adu.edu.tr)*

Received: 24.11.2021 Accepted: 14.01.2022

ABSTRACT

A 19-day-old, male crossbreed kid with complications of difficulty in urination was referred to the Veterinary Teaching Hospital, Aydin Adnan Menderes University. A purple thin-walled, fluid-filled structure was noticed on the ventral midline and was associated with the prepuce. The cystic structure was sharply incised, and the incision was extended from the most cranial to the most caudal extent of the dilatation. Penile urethral diverticulectomy was performed by the guidance of the urethral catheter. Postoperative attempts at urination resulted in free-flowing streams, and the kid did not have strangury. Sutures and urethral catheter were removed 10 days after surgery.

Keywords: *Kid, Dysuria, Diverticulectomy, Urethral diverticulum*

INTRODUCTION

A Reproductive anomaly in farm animals are frequently reported. Conditions of pseudohermaphrodism, gonadal hypoplasia and aplasia, and various segmental hypoplasias and deformities have been recognized (Rousseaux and Ribble, 1988; Omidi et al., 2011; Bodh and Jadon, 2017; Ali et al., 2020). The common anomalies seen are hypospadias, patent urachus and renal agenesis in goats. These anomalies are usually present in multiples and are often seen with anomalies of other systems (King et al., 2002, Almubarak et al., 2016). Most congenital defects have no clearly established cause; others are caused by genetic or environmental factors or a combination of both; in many cases, the causes are unknown (Blood et al., 1983).

Urethral diverticulum is a condition in which a variably sized "pocket" or outpouching forms next to the urethra and it is either congenital or acquired (Blood et al., 1983; Karras et al., 1992; Anderson et al., 1993). Urethral diverticulum is observed at the pre and post scrotal spot in animals, and emerges as a result of the transient urethral obstruction, or much less frequently due to bacterial urethritis of the lower urinary section (Anderson et al., 1993; Gasthuys et al., 1993).

The present case report aimed to evaluate the surgical treatment outcomes of the penile urethral diverticulum in a male crossbreed kid.

CASE HISTORY

A 19-day-old, male crossbreed kid was brought to the Surgery Clinic, Faculty of Veterinary Medicine, Aydin Adnan Menderes University, with incontinence and dysuria since birth. The owner noticed that the animal has poor sucking reflex, was vocalizing and straining during urination, and has swelling on the prepuce area. Clinical examination of the kid revealed a purple thin-walled, fluid-filled structure on the ventral midline associated with the prepuce (Figure 1A). Exteriorization of the penis was possible. During

the examination, dribbling of small amount of urine was observed.

Figure 1. Penile urethral diverticulum on the preputial region (A), The appearance of kid with congenital penile urethral diverticulum prior to surgery (B), Penile urethral diverticulectomy by the guidance of the urethral catheter (C), The appearance of kid with congenital penile urethral diverticulum after to surgery (D).

The urethral process and glans penis were freed with gentle caudal traction of the prepuce. Exploratory puncture gave urine. It was tender when the diverticular swelling was pressed where urine came from the normal urethral opening. Heart rate, respiratory rate and rectal temperature were 112/min, 30/min and 39.1°C, respectively. Mucosal membrane color, capillary refill time, appetite and hydration status were normal. Blood values were within physiological ranges.

A lubricated sterile catheter (3.5 F) was placed in the urethra. The operation area was prepared for aseptic surgery. The kid was anesthetized with 0.2 mg/kg xylazine hydrochloride, i.m. (Alfazyne, Egevet, Turkey) and 0.11 mg/kg i.m. ketamine hydrochloride (Alfamine, Egevet, Turkey) by intramuscular injection. The kid was placed in dorsal recumbency on the operating table. Lactated Ringer's solution (2 mg/kg/h) was administered during the operation. The surgical site was prepared aseptically. The urine in the swelling of the diverticulum was evacuated by manipulation (Figure 1B). The cystic structure was sharply incised, and the incision was extended from the most cranial to the most caudal extent of the diverticulum. Penile urethral diverticulectomy was performed by the guidance of the urethral catheter (Figure 1C). Urethra and skin sutured with 4-0 polyglactin 910 (Vicryl) and 4-0 silk (mersilk) in a simple interrupted pattern, respectively (Figure 1D).

Antibiotic (25.000 IU/kg/day, intramuscularly, Penicillin G procaine) was administered for 7 days post-operatively. Post-operative attempts at urination resulted in free-flowing streams, and the kid no longer had strangury. Urethral catheter and sutures were removed 10 days post-surgery. The surgical wound healed without any complications.

DISCUSSION

Abnormalities of the reproductive system are common in farm animals, and more common in goats than in sheep. Congenital or hereditary urethral anomalies include urethral stenosis, urethral agenesis, urethral diverticula, urethrorectal fistula, imperforate urethra and urethral duplication, (Wolfe, 1986; Rousseaux and Ribble, 1988; Weaver et al., 1992; Sylly et al., 2019). Urethral dilatation in goats can be combined with congenital anomalies such as hermophradismus,

cryptorchism and dilatation of vesica urinaria (Sylly et al., 2019). The congenital urethral diverticulum was reported in a goat (Karras et al., 1992). Temizsoylu (2005) reported congenital urethral diverticulum and phimosis in male a kid. Sindak et al. (2010) reported urethral dilatation, ectopic testis, hypoplasia penis, phimosis in a Kilis goat kid. In this case, clinical examination revealed a purple thin-walled, fluid-filled structure on the ventral midline associated with the prepuce. The urethral diverticulum was diagnosed according to clinical findings and this defect was also congenital. Urine stasis in the dilated portion of the urethra may result in bacterial urethritis from ascending infections. Excision of the urethral dilatation or perineal urethrostomy should be considered if an infection is refractory to conservative management (Karras et al., 1992; Anderson et al., 1993; Gasthuys et al., 1996; Sylly et al., 2019). The condition is generally associated with urethritis and/or cystitis as a result of an accumulation of urine in the swelling for a long period and even rupture of the urinary bladder may ensue if the condition was associated with aplasia of the penis (Anderson et al., 1993; Javdani et al., 2009). We did not encounter any signs of urethritis or cystitis and the penis and scrotum were normal in our case.

Magda and Youssef (2009) reported urethral diverticulum in 7 kids. The penile urethral diverticular extension was ovoid in four cases and ovoid with multiple swellings pre and post scrotal in two cases. In our case, the penile diverticulum was ovoid and swelling was ventrally located at pre scrotal region.

Previous studies have reported that local swelling in urethral dilatation has a fluctuant character (Temizsoylu, 2002; Magda and Youssef, 2009;). Urination is achieved by pressure on swelling and is painful. Our findings were in agreement with those demonstrated symptoms.

Urethral structures in small ruminants are usually treated by amputation or prophylactically (Fuller et al., 1992; Karras et al., 1992; King et al., 2002; Cruz-Arambulo et al., 2003). Treatment of such cases was directed towards surgical correction when it is possible (Karras et al., 1992), otherwise, perineal urethrostomy or penile resection is indicated if an infection is refractory to conservative management. Several researchers (Anderson et al., 1993; Temizsoylu, 2005; Sedeek and Bakr, 2009) had suggested excision and perineal urethrostomy for the treatment of urethral diverticulum. Temizsoylu (2005) treated urethral dilatation by urethrostomy; and phimosis by amputation of narrowed preputium. Sindak et al. (2010) treated urethral dilatation by urethrostomy in the male goat kid. They considered no treatment for hypoplasia penis, phimosis and ectopic testis due to infertility. Sedeek and Bakr (2009) performed perineal urethrostomy and partial resection of the penis including the dilated urethra. In the present case report, the urethral diverticulum in the male goat kid was treated by urethrostomy.

CONCLUSION

In conclusion, in the present report, the urethral diverticulum was surgically treated using excision and urethrostomy successfully. No complications were seen next days.

ACKNOWLEDGMENTS

Conflict of Interests: The authors declared that there is no conflict of interests.

Financial Disclosure: The authors declared that this study has received no financial support.

Author's Contributions: AB, RY and OÖD designed the study. AB, RY and ÖOD performed surgeries. AB and RY participated in drafting and revising the manuscript. AB: Ali Belge, RY: Rahime Yaygingül, OÖD: Onur Özgün Derincegöz

REFERENCES

Ali MM, Hussein KH, Sadek A, Abdelbaset AE. Congenital urethral dilatation in cattle calves: Diagnosis and surgical intervention. Vet World. 2020; 13(2):261.

Almubarak AM, Abdelghafar RM, Gameel AA, Osman NM. Penile urethral hypospadias with two fistulae and diverticulum in a Saanen kid. Case Rep Vet Med. 2016; 1-3.

Anderson DE, Wallace CE, Williamson L, Mahaffey MB. Urethral recess dilatation in a charolais-cross bull calf. Can Vet J. 1993; 34(4):234-235.

Blood DC, Radostits OM, Henderson JA. Veterinary medicine. 6th ed. London: Bailliere Tindall; 1983. pp.366-367.

Bodh D, Jadon NS. Surgical Management of Penile Urethral Diverticulum in a Kid. Intas Polivet. 2017;18(2):413-414.

Cruz-Arambulo RJ, Tan L, Callan RJ, Van Metre DC, Park RD. What is your diagnosis? (Communication between the urethra and corpus spongiosum, urethral stricture mild cystitis, and presence of a urethral diverticulum). J Am Vet Med Assoc. 2003; 222:1211-1212.

Fuller DT, Baird AN, Morris EL, Kraemer DC. What is your diagnosis? (Hypospadias and urethral diverticulum in goat). J A Vet Med A. 1992; 201:1431-1432.

Gasthuys F, Martens A, De Moor A. Surgical treatment of urethral dilatation in seven male cattle. Vet Rec. 1996; 138:17-19.

Gasthuys F, Steenhaut M, De Moor A, Sercu K. Surgical treatment of urethral obstruction due to urolithiasis in male cattle: a review of 85 cases. Vet Rec. 1993; 133:522-526.

Javdani GM, Dehghani NS, Raayat JAR. Congenital penile urethral aplasia in a 4-day-old calf. Iran J Vet Res. 2009; 10:87-89.

Karras S, Modransky P, Welker B. Surgical correction of urethral dilation in an intersex goat. J Am Vet Med Assoc. 1992; 201:1584-1586.

King WW, Young ME, Fox ME. Multiple congenital genitourinary anomalies in a polled goat. Contemp Top Lab Anim Sci. 2002; 41(5):39-42.

Magda MA, Youssef HA. Surgical management of congenital malformations in ruminants. Avaiable at: http://www.priory.com/vet/congenital_malformations_ruminants.htm, Accessed July 14, 2009.

Omidi A, Monjezi S, Nabipour A. Hypospadias, diverticulum, and agenesis in the penile shaft of a goat kid (Capra hircus). Comp Clin Path. 2011; 20(4):417-419.

Rousseaux CG, Ribble CS. Developmental anomalies in farm animals II defining etiology. Can Vet J. 1988; 29:30-39.

Sylla L, Crociati M, Pistolesi A, Pisello L, Caivano D, Angeli G. Urethrostomy in an Alpine kid secondary to congenital penile urethral diverticulum. Large Anim Rev. 2019; 25(4):153-156.

Sedeek AM, Bakr HA. Comparison between urethrostomy and penile resection for treatment of congenital penile urethral dilatation in calves. J Vet Med. 2009; 19:1-6.

Sindak N, Sahin T, Selçukbiricik H. Urethral dilatation, ectopic testis, hypoplasia penis, and phimosis in a Kilis goat kid. Kafkas Univ Vet Fak Derg. 2010; 16:147-150.

Temizsoylu MD. Penile urethral diverticulum in a kid. Ankara Univ Vet Fak Derg. 2005; 52:185-187.

Weaver AD, Johnson GC, Hill J. Congenital megalourethra in a male Charolais calf. Can Vet J. 1992; 33:270-272.

Wolfe DF. Surgical procedure of the reproductive system of the bull. In: Morrow DA (Ed.), Current Therapy in Theriogenology 2. 2nd ed. Philadelphia: WB Saunders Co; 1986. pp.353-397.