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HYPOSPADIA IN SMALL RUMINANTS: A CASE REPORT

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ABSTRACT

Hypospadias is a rare congenital malformation of the urethra reported in dogs, sheep, goats, cattle, rats, nonhuman primates and humans. Affected animals may have other congenital or developmental anomalies such as cryptorchidism, which is to be the most common congenital anomaly associated with hypospadias.

In this clinical case is described condition of six weeks old male goat, weighing 10 kg, in Vrazhdebna Training and Experimental Field Centre of the University of Forestry, with signs of urine scalding on the ventral perineum. Physical examination revealed aplasia of the penis and the urethra opened cranially to the scrotum. The diagnosis was made as hypospadias and penile aplasia.

Key words: hypospadias; penile aplasia; male goat.

Introduction

Congenital malformations can result from defective genetics or environmental factors or a combination of both (Shukla et al., 2007). Pedigree analysis and breeding trials revealed that these anomalies are autosomal recessive diseases (Bryan et al., 1993). Congenital urinary tract anomalies in farm animals are rare. The most common anomalies are patent urachus, hypospadias, and renal agenesis (Temizosylu 2005). Hypospadias is imperfect closure of the external male urethra (Radostits *et al*., 2007). This congenital defect results from failure of fusion of the urogenital folds and incomplete formation of the penile urethra (Boothe, 2003). Hypospadias is accompanied by hypoplasia of the corpus cavernosum urethra (Fossum, 2002). Affected animals may have other congenital or developmental anomalies such as cryptorchidism, which is reported to be the most congenital anomaly associated with hypospadias. The aetiology of hypospadias is not well understood, it seems to be multifactorial and may be related to genetic, endocrinological, and environmental factors (Silver, 2000). In a survey of the occurrence of congenital anomalies in goats, the occurrence of congenital hypospadias was 0.066% (Al-Ani et al. 1998).

Case presentation

The patient is a 6-week-old goat kid (Capra hircus), weighing 10 kg, grown at the Vrajzbenna Training and Experimental Center at the University of Forestry. The pregnancy of the mother was without complication and within the normal duration. Obstetric assistance is not applied at birth and only one kid is born, fully developed and vital.

After birth, the newborn started to suck milk from his mother within a few hours, and then goes on to an additional feeding. With age, animal keeper noticed persistence of urine in the area of the ventral perineum (Fig. 1). During the clinical examination, it was established: BTT – 39.4 ˚C, pulse rate – 95 per minute, Respiratory rate – 27, preserved appetite and thirst. In the andrological examination, incomplete and improper development of the penile (penile hypoplasia) and prepuce, as well as open cranial to the scrotum urethra (Fig. 2). The examination of the scrotum revealed the presence of two normally-developed testes for the age of the animal, with no change in their location – excluding cryptorchism (Fig. 3).

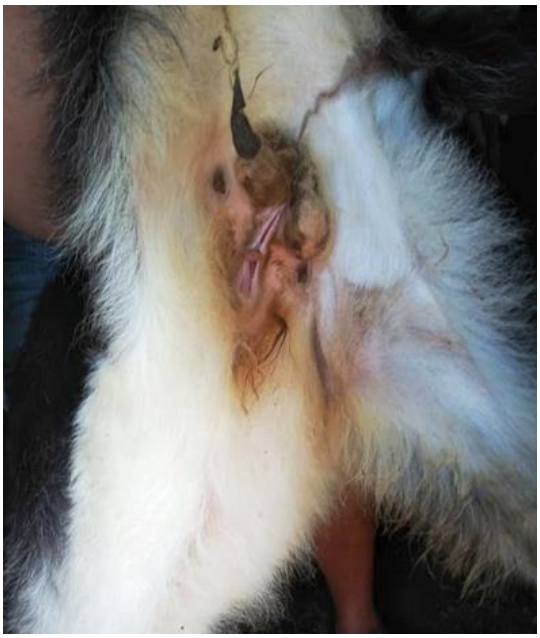

Figure 1: Presence of urine and pollution of the ventral perineum

Figure 2: Penile hypoplasia and urethral hypospadia

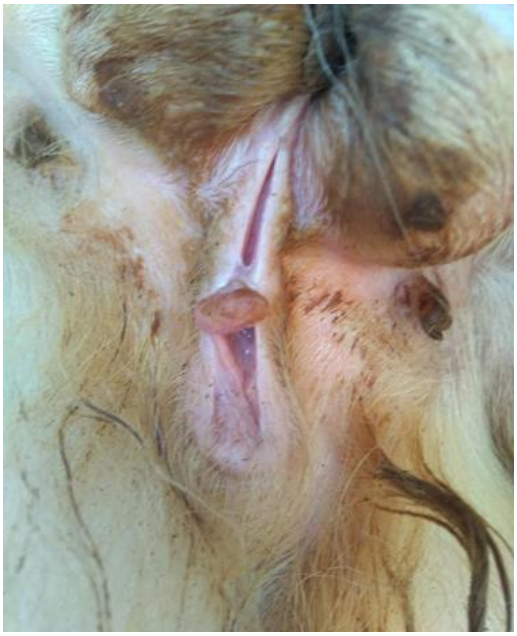

Figure 3: Normal development of the scrotum and testicular position

Discussion

Hypospadias is a defect of the external genitalia characterized by an incomplete development of the prepuce with a ventral opening in the urethra at some point along the penis or the perineum due to lack of partial fusing of the urethral fold. In sheep has been regarded as a form of pseudohermaphroditism (Dennis and Leipold, 1979). In human, hypospadias is the second most common congenital abnormality after cryptorchidism (Pierik et al., 2002).

Hypospadias, urethral fissure at the ventral aspect of penile urethra, was mentioned in the available literatures (Sndak et al., 2010).

Three types of hypospadias are reported depending on the anatomical location of the urethral opening. The first (penile) form - the urethra opening could be proximal, distal, or in the mid shaft of the penis. The second form is scrotal in which the urethra opens between the halves of the divided scrotum and the third is the perineal in which the urethra opens in the perineum. Some authors classify hypospadia into 4 types: palanetic, penile, scrotal and perineal (Ladds, 1993).

In the present case the kid was born with this defect, which lead us to the consension that it is a congenital malformation. There are many reports concerning hypospadiac cases in ruminants associated with other congenital anomalies such as absence of tail, atresia ani, hermaphrodism, penile hypoplasia and cryptorchidism (Azari et al., 2010; Omidi et al., 2011; Bokhari, 2013; Saunders and Ladds,1978). This is in accordance with the present case, in which we found hypospadia and hypoplasia of the penis and the prepuce. In this case, no treatment was given, but surgical reconstruction through permanent urethrostomy is the only possible option to treat hypospadias associated with penile hypoplasia. In case of surgical treatment of this condition, account should be taken of possible complication. 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 urethrocutaneous fistula, urethral stricture, balanitis and urethrocele (Nuininga et al., 2005).

Competing interests

The authors declare that there is no conflict of interests regarding the publication of this paper.

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