Introduction

Hypospadias is a rare congenital malformation of the urethra (Alam et al., 2005) which has been reported in dogs, sheep, goats, cattle, rats, nonhuman primates and human. Congenital anomalies of the urinary tract are not common in farm animals (Dennis and Leipold, 1979). Hypospadias is a rare congenital malformation of the urethra in domestic mammals. The most frequently reported anomalies of the urinary tract in goats are intersexes, testicular hypoplasia and unilateral cryptorchidism (Al-Ani et al., 1998). Hypospadias is a rare congenital malformation of the urethra in domestic mammals. The most frequently reported anomalies of the urinary tract in goats are intersexes, testicular hypoplasia and unilateral cryptorchidism (Al-Ani et al., 1998). Hypospadias is imperfect closure of the external male urethra (Radostits et al., 2007). Affected animals may have other congenital or developmental anomalies such as cryptorchidism, which is reported to be the most congenital anomaly associated with hypospadias. Hypospadias is classified based on the location of the urethral opening as glandular, penile, scrotal, perineal and anal. In some cases, the penis may be underdeveloped and abnormal (Alam et al., 2005). The etiology of hypospadias is not well understood; it seems to be multifactorial and may be related to genetic, endocrinological and environmental factors (Silver, 2000). In the majority of cases, the etiology remains elusive, but generally it is considered as a congenital deformity that may be caused by extra- or intra-uterine factors resulting defects in androgen metabolism and/or androgen receptors (Uda et al., 2004). The present paper reports an unusual case of congenital absence of the tail with atresia ani and hypospadias in a kid.

Case history and observations

One day old kid was presented to the Department of Veterinary Surgery and Radiology, College of Veterinary Science, Sri Venkateswara Veterinary University, Tirupati with the history of not passing feces since birth. Based on the clinical, physical and lateral radiographic examinations, the condition was diagnosed as hypospadias along with penile aplasia and atresia ani without tail. Animal made an uneventful recovery after the seventh post operative day.

Abstract

One day old kid was presented to the Department of Veterinary Surgery and Radiology, College of Veterinary Science, Sri Venkateswara Veterinary University, Tirupati with the history of not passing feces since birth. Based on the clinical, physical and lateral radiographic examinations, the condition was diagnosed as hypospadias along with penile aplasia and atresia ani without tail. Animal made an uneventful recovery after the seventh post operative day.

Keywords: Atresia ani; Kid; Hypospadias; Tail
Fig. 1. Hypospadias in a kid.

Fig. 2. Atresia ani and absence of tail.

Fig. 3. Absence of tail.

Fig. 4. Muconeum after surgery.

Fig. 5. Modified device for atresia ani.

Fig. 6. Modified device for atresia ani after surgery.
Treatment

The kid was placed in dorsal recumbency and the caudal abdomen and the perineal regions were surgically prepared with 7.5% povidone iodine scrub. Local anaesthesia was used by circumferential injection of 2% lignocaine hydrochloride around the skin of the swollen area below the base of the tail. Atresia ani was treated by excision of a circular piece of anal skin. The rectum was exposed; meconium was oozed out immediately after incision (Fig. 4). The patency of the opening was maintained by application of interrupted sutures between skin and the mucous coat. A temporary canula was fixed to maintain the patency for one week (Fig. 5 and Fig. 6). In the present case surgical intervention of hypospadias was not attempted because of the presence of patent urethral opening just cranial to the bifid scrotum. Post operatively kid was given injection Amoxicillin and cloxacillin at a dose of 10mg/kg body weight intramuscularly, Injection meloxicam at a dose of 0.3mg/kg subcutaneously for five days. Wound was dressed daily with povidone iodine ointment for five days. Animal made an uneventful recovery after the seventh post operative day.

Discussion

The development of the external male genitalia is a complex process, involving genetic programming, cell differentiation, hormonal signaling, enzyme activity, and tissue remodeling. A disturbance in these processes might lead to disruption of the fusion of the urogenital folds at different sites along the urogenital tract. Environmental toxicants and xenoestrogens, acting during fetal life, have been partly implicated in an increasing incidence of hypospadias, as well as other reproductive tract abnormalities (Baskin et al., 2001). The association between environmental oestrogen-like compounds and hypospadias has been suggested by previous workers (Sharpe and Skakkebaek, 1993). Several lines of evidences have suggested that oestrogens can modulate serum androgen levels. An additional concept explaining these disorders is of androgen-oestrogen imbalances created by endocrine disruptors, affecting androgen production and action (Tazuke et al., 1992; Bay et al., 2006). Familial clustering of hypospadias among first-degree relatives, as well as twin studies and segregation analysis have been supported a strong heritable component in this disorder in human (Fredell et al., 2002). One possible explanation for increase in the incidence of hypospadias may be environmental contaminations. Farm animals are constantly exposed to oestrogenic compounds which are known for their ability to disrupt reproduction (Kim et al., 2004). Recent changes in agriculture, particularly the increasing organic farming together with more expensive fertilizers, have lead to wider cultivation of red clover. It is well known that red clover contains phytoestrogens. Phytoestrogens are available in many foodstuffs. Even low concentrations, but prolonged exposure may cause phytoestrogens in the body to reach biologically significant levels. It was also suggested that the indirect role of phytoestrogens rather than having a direct oestrogenic effect, they may interact with other factors in the diet and lead to an interference with normal oestrogen biosynthesis (North and Golding, 2000).

Atresia ani is a congenital anomaly observed in calves, lambs and kids. It may be a condition on its own or associated with atresia or agenesis of other parts like atresia recti, recto vaginal fistula, recto cystic fistula, vagino-urethral agenesis, taillessness, hypospadias, cleft scrota. Atresia ani or recti has been associated with abnormal chromosomes. Developmental anomalies of the foetal life example failure of the anal membrane to become perforated, failure of the bowel to become canalized and interruption of the foetal blood supply to the anus may lead to atresia ani or atresia ani et recti (Jit Singh et al., 1993). The present paper reports an unusual case of atresia ani with hypospadias, which is a congenital anomaly.

References


