AGENESIS OF VULVA AND TERMINAL URETHRA WITH ATRESIA ANI ET RECTI IN A BUFFALO CALF

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ABSTRACT

A case of atresia ani et recti with agenesis of the vulva and terminal urethra in a buffalo calf and its successful surgical treatment is reported.

Keywords: agenesis, vulva, anus, rectum, buffalo calf

INTRODUCTION

Congenital defects, genetic or non-genetic, involving only an organ or a part of the body are of various types. Atresia ani may occur either alone or associated with other defects like atresia recti, rectovaginal fistula, recto-cystic fistula, vaginourethral agenesis, taillessness, hypospadiasis, cleft scrota etc., (Tyagi and Jit Singh, 1999). Anomalies of the urethra are not common (Arey, 1961). This paper reports a rare case of atresia ani et recti associated with agenesis of the vulva and terminal urethra in a buffalo heifer calf.

HISTORY AND OBSERVATIONS

A newly born female graded Murrah buffalo calf aged 2 days was presented to the clinic with a history of having passed neither meconium nor urine since birth. The calf was active and exhibited tenesmus. Clinical examination revealed absence of anal opening and complete absence of vulva with a tubercle like structure at ventral aspect at the site of normal vulva (Figure 1).

On compressing the abdomen, no bulging at the anal region could be detected confirming it to be a case of atresia ani et recti. It was decided to perform emergency surgery to correct the anomalies and to relieve the straining.

SURGICAL TECHNIQUE

The perineum area of the calf was prepared for aseptic surgery following a linear infiltration of 2% lignocaine hydrochloride in the vulvar region in lateral recumbency. An elliptical incision of about 3 cm length was made extending upwards from the tubercle and the adjacent connective tissue was separated by blunt dissection. On exploration, no urethral orifice was found even after compressing the abdomen. The caudal mid ventral abdomen was prepared for aseptic surgery under linear infiltration of 2% lignocaine hydrochloride. The distended bladder was exteriorized through the laparotomy opening at the site and the urine was evacuated by making a nick incision. A catheter was passed in a normograde manner through the neck of the bladder into the urethra. While passing the catheter, a bulging was observed in the newly created opening at the site of vulva. A nick incision was given on the bulged area and the catheter was pulled and fixed to the newly created vulva and the other end was fixed to the bladder mucosa using 1-0 chromic cat gut (Figure 2). Examination of the pelvic cavity revealed a normal uterus. The cystotomy and laparotomy incisions were closed as per standard technique. Cut edges at the site of vulva were fixed to underlying connective tissue with interrupted silk sutures for

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its reconstruction. A circular incision was made on the skin at the usual location of anus. After blunt dissection, the rectal cul-de-sac was freed from its surrounding attachments and drawn to the level of anal opening and fixed to the skin by simple interrupted sutures using braided silk. Following surgery, the meconium and urine were seen coming through the newly created anal opening and the catheter, respectively. Post-operatively, the calf was administered streptopenicillin 0.5 g i/m for 7 days, diclofenac sodium 1 ml (25 mg) for 3 days and DNS 500 ml i/v for 3 days. The calf was also given liquid paraffin 15 ml per os for 4 days. The catheter was removed on the 5th post operative day. The calf showed normal urination and defecation and recovered uneventfully. Skin sutures were removed on 10th post operative day. The calf showed absolutely normal shape of vulva and anus with normal functionality in due course of observation (Figure 3).

RESULTS AND DISCUSSION

Atresia vagina et urethra along with atresia ani et recti is a rare occurrence. Tyagi and Jit Singh (1999) attributed the atresia ani or atresia recti to chromosomal abnormalities. Arey (1961) stated that an imperforate anus is due to the retention of the anal portion of the cloacal membrane and the failure of rupture of urogenital membrane can result in atresia of vagina. Shetty et al. (1978) reported a case of atresia of vagina, urethra and anus in a cross-bred calf while Lakshmipathi et al. (1983) reported a case of atresia ani with vulvar agenesis in a lamb. Sreenu et al. (1998) reported a case of atresia ani with rectovestibular fistula and vulvar agenesis in a non-descript buffalo calf.

Normally, the caudal portion of the embryonic hind gut (cloaca) serves as a common terminus for urinary and digestive systems. Beginning at the junction of hind gut and allantois, the urorectal septum develops, which grows caudally, separating the cloaca into dorsal and ventral chambers. The dorsal portion of cloacal folds forms the anal folds, while the ventral portion forms the urogenital folds. In the female animal, the urogenital folds form the labia, or lips, of the vulva. Following the degeneration of the urogenital membrane, the urogenital sinus opens caudally to form the common urogenital orifice. In the female, the urethra is derived from the cranial part of the pelvic urogenital sinus and the reminder sinus becomes the vestibule. Failure of the differentiation of cloacal folds into anal and urogenital folds results in the malformation of the anus and vagina and that of cranial part of pelvic urogenital sinus will result in agenesis of the terminal urethra in female (Noden and deLahunta, 1985).

In the present case, failure of the urorectal septum to extend caudally to form the anal and urogenital folds might be the cause of above anomalies. The agenesis of terminal urethra might be due to failure of the pelvic urogenital sinus to differentiate completely.

REFERENCES


Figure 1. The calf with congenital absence of vulva and atresia ani et recti.

Figure 2. The calf after surgery with the urethral catheter in situ.

Figure 3. The calf showing the reconstructed vulva and anus on the 20th post operative day.