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SURGICAL MANAGEMENT OF URACHALCYST AND CYSTORRHEXIS IN A CROSS BRED CALF

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Abstract: A two & half month old male Jersey cross bred calf was presented to university veterinary hospital with distended abdomen and not passing urine in the past four days of presentation. Based on clinical examination, abdominal paracentesis and ultrasonography, condition was tentatively diagnosed as cystorrhexis and uroperitoneum. Under general anaesthesia laparotomy was performed and an urachal cyst was identified. The cyst was excised and cystorrhaphy followed and tube cystostomy was performed. The calf had an uneventful recovery with normal urination from the penis by second post-operative week of surgery.

Keywords: Calf, Uroperitoneum, Cystorrhexis, Urachal cyst, Tubecystostomy.

Introduction

During prenatal life, urinary bladder communicates with allantois through urachus which becomes atrophied after birth in animals. Persistant patent urachus is a congenital abnormality in which functional urachus persists in animals (Laverty and Salisbury, 2002). Urachal cyst is the condition in which middle section of the urachus remains patent with both ends obliterated which may be accompanied by cystorrhexis (Lischer *et al*., 1994).

Case History and Observations

A two and half month old Jersey cross calf presented to the University Veterinary Hospital, Mannuthy, Kerala Veterinary and Animal Sciences University with complaint of not urinating from past 4 days of presentation. The animal had enlarged abdomen. On clinical examination, tensed abdomen with cellulitis and oedema extending from umbilicus to brisket region was noticed. Uro-abdomen was confirmed by abdominal paracentesis which revealed straw colour fluid with elevated creatinine level of 21mg/dl. On ultrasonography, accumulation of anechoic fluid in the abdominal cavity with partially ruptured bladder wall and floating cystic like structure near umbilical region was identified. Condition was tentatively diagnosed as urachal cyst along with cystorrhexis and uroperitoneum.

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Treatment and discussion

Animal was prepared for surgery. Atropine (Tropine, Actiza Pharmaceuticals, Surat, India) was administered @0.02 mg/kg body weight followed by Xylazine (Xylaxin, Indian Immunologicals, Hydrebad, India) @ 0.1 mg/kg body weight Intra muscularly. Regional anaesthesia was achieved by 2% lignocaine in "inverted L "pattern. Left lower flank laparotomy was performed and urine accumulated the peritoneal cavity was removed out with suction. Cystorrhexis site at the tip of the bladder was identified with a cystic structure with membranous attachment with bladder near the umbilical region.

Fig. 1: Bladder with leakage site and umbilical fistula

Examination of the bladder revealed small fine crystals obliterating at the trigone. On normograde catheterisation with No8 FG Infant feeding tube, obstruction was identified at the level of sigmoid flexure. Cystorrhaphy was performed using cushing's sutures followed by Lambert's sutures using absorbable suture material Vicryl 2-0 (Ethicon, Johnson and Johnson, Mumbai, India). The urachal cyst was identified and excised after placing ligations before and after the cyst. As the patency of urethra was not noticed, tube cystostomy was performed as per the procedure described by Ewoldt *et al*. (2012) and Foley's catheter (No.14) was fixed to lateral abdominal Muscles.

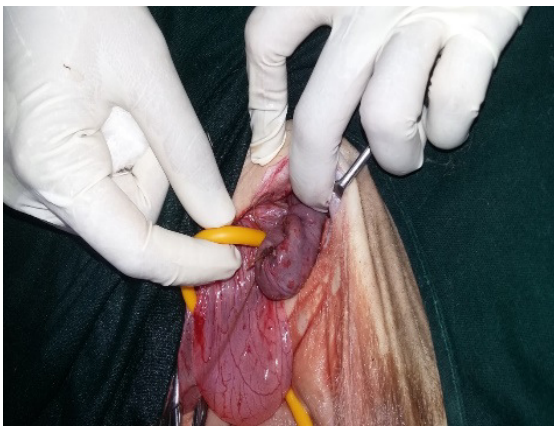

Fig. 2: Fixing of Foley's catheter to bladder

Subcutaneous tissue was sutured with No.1 Polyglactic Acid 910 sutures (Vicryl, Ethicon, Johnson and Johnson, Mumbai, India) in continuous suture pattern followed by skin in horizontal mattress pattern with No. 1 Nylon sutures (Ethilon, Johnson and Johnson, Mumbai, India). Post operatively Inj. Ceftriaxone sodium @ 20 mg/ kg body weight (Intacef, Intas pharmaceuticals, Vadodara, India) was administered intravenously at 12 hour interval for 7 days along with Melaxicam @ 0.1 mg / kg body weight for 3 days and supportive fluid therapy with Dextrose Normal Saline (Infutec health care ltd, Odisha, India). As the urine pH was found alkaline, urinary acidifiers ascorbic acid 400 mg tablets twice daily and ammonium chloride @ 100 mg/kg body weight orally was given for a week. The urine started voiding through normal penile opening by 12th post-operative day with normal pH of 7.

During prenatal life, urinary bladder communicates with allantois through a structure known as urachus which becomes atrophied and its lumen gets cicatrized after parturition (Laverty and Salisbury, 2002). Partial or complete failure of lumen obliteration of this structure results in different anomalies like pervious urachus where complete length of urachal lumen fails to obliterate (Langan *et al*., 2001); urachal diverticulum, where the lumen of urachus fails to obliterate nearer to the bladder (Remedios *et al.,* 1994); umbilical fistula where the lumen of Urachus fails to obliterate nearer to umbilicus and urachal cyst where the middle part of urachus remains patent (Fig -3).

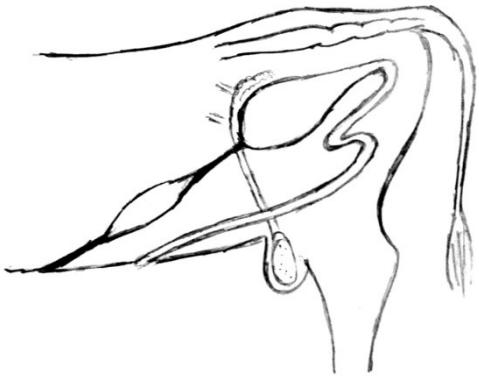

Fig. 2: Urachal cyst where the middle part of urachus remains patent

In present case the animal had an urachal cyst (Fig: 2) Uroperitoneum was observed in this case due to bladder rupture and urolithiasis. Similar findings were documented by Nikhaval, and Khafi (2013). The tube cystostomy tube diverts the urine flow aiding the normal course of urethra to become patent with treatment using urinary acidifiers.

Summary

A case of Cystorrhexis resulting from urachal cyst and urolithiasis was successfully managed surgically by Cystorrhaphy and Tubecystostomy in a two and half month old Jersey cross bred calf.

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