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Surgical management of persistent urachus in a female calf: A case report

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Abstract

A 1-month-old Cross bred Jersey female calf was presented with a history of dribbling of urine from the umbilical region since birth. Based on history and clinical examination it was diagnosed as a case of Persistent urachus and treated surgically by double ligation of urachus close to the bladder under local anaesthesia. Post-operatively animal shows uneventful recovery.

Keywords: Persistent urachus, surgical management, female calf, urinary scalding

1. Introduction

Persistent urachus is a congenital condition in which the embryonic connection-urachus between the urinary bladder and allantoic sac fails to close after birth. Unlike other urachal anomalies such as an umbilical-urachal sinus, vesico-urachal diverticulum, or urachal cyst a persistent urachus is often symptomatic and typically presents with urine leakage from the umbilicus (Wilson *et al.*, 2019) [5]. While persistent urachus is rare in buffalo calves, it is relatively common in foals and cattle calves, occurring in approximately 26% of cow calves (Van Camp *et al.*, 2022) [4]. There are both surgical and conservative methods to correct a Persistent urachus. In the conservative method, a cotton swab dipped in 90% alcohol is applied to the urachus towards the urinary bladder to stop urine dribbling by promoting the development of adhesions. Although dribbling of urine stops over time, complications such as inflammation and abscess formation may arise (Singh *et al.*, 2020) [3]. For this reason, surgical methods are often used to treat a Persistent urachus. The current case relates to the surgical correction of Persistent Urachus in a 1-month-old female cattle calf.

Case history and observations

A 1-month-old Cross bred jersey female calf was presented to Veterinary Clinical Complex, College of Veterinary Science, Garividi with a history of dribbling of urine from the umbilical region and kicking at the abdomen. Up on examination, scalding of ventral umbilical region was noticed which is due to dribbling of urine (Fig. 1). Based on clinical observation, it was diagnosed as a case of Persistent Urachus. Accordingly, surgical treatment was planned.

Surgical procedure

The ventral abdomen was prepared routinely for aseptic surgery. The animal was placed in a right lateral recumbency. Local anaesthesia was ensured by infiltration of the surgical site with 2% lignocaine. A sufficient longitudinal incision was made over the umbilicus in a cranio-caudal direction and blunt dissection of the subcutaneous fascia was performed. The urachus was traced up to the level of urinary bladder through a small laparotomy incision and double ligated close to the bladder using chromic catgut no. 2. After confirming proper ligation without any urine leakage, the urachus was resected. Povidone iodine touch was given to the cut end as a measure to prevent infection. The laparotomy and skin incisions were closed routinely. Post operatively, Inj. Cefotaxime at the dose rate of 10 mg/kg body weight

intramuscularly for 5 days and Inj. Meloxicam at the dose rate of 0.5 mg/kg body weight intramuscularly for 3 days was advised. Regular antiseptic dressing was advised at the surgical wound. Surgical procedures are shown in Figures 2A-2D.

Results and Discussion

The surgical management of the Persistent urachus was considered the therapeutic option of choice, although cauterizing agents (tincture iodine or silver nitrate) have been used successfully. In the present case, after the surgical correction of the Persistent urachus, dribbling of urine from the umbilicus was stopped immediately and the sutures were removed after 12 days of surgery.

When a persistent urachus is present, it is frequently complicated by omphalitis, omphalophlebitis, and urachitis. This inflammatory and infectious process can then extend into the surrounding abdominal tissues (Langan *et al.*, 2001). Double ligation of the non-infected persistent remnant is performed first to leave the infected structure last. For infection of the urachus canal, a partial apical cystectomy is performed to complete the en-bloc resection. If treatment is not immediate, the condition might lead to complications such as abscess formation and systemic sepsis, which may be fatal (Sarangom *et al.*, 2020) [2].

Conclusion

A Persistent urachus is a congenital anomaly in newborn cattle calves, characterized by dribbling of urine from the umbilicus. A case of Persistent urachus was diagnosed in a 1-month-old Cross bred Jersey female calf and with timely surgical intervention by double ligation and excision of the urachus close to the bladder animal shows an uneventful recovery.



Fig 1: Dribbling of urine from the umbilical region

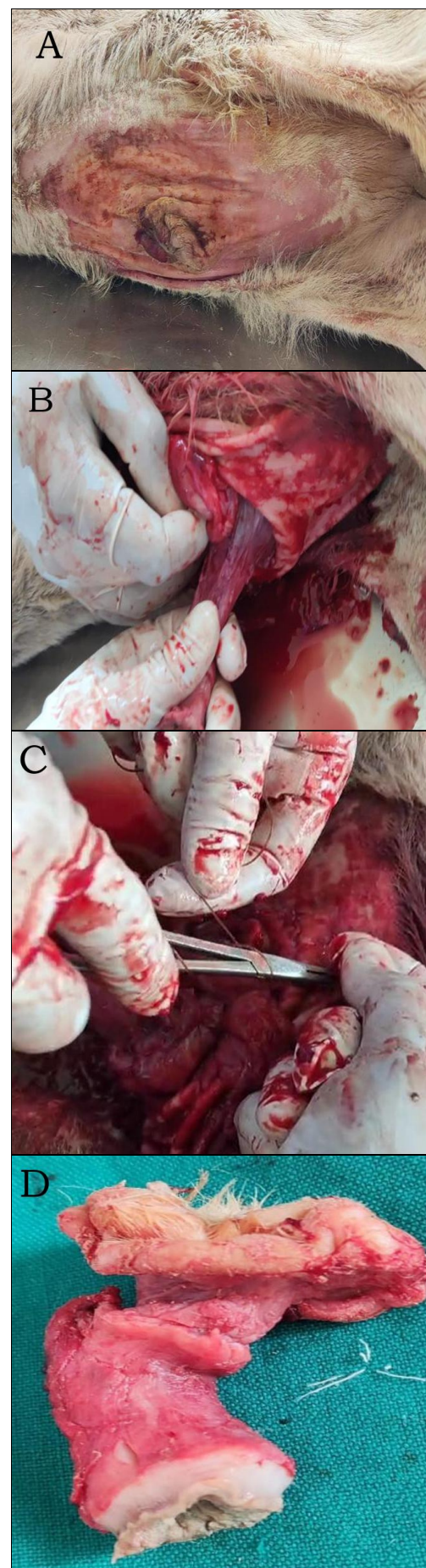


Fig 2: Surgical correction of persistent urachus in a female calf; A) - Aseptically prepared surgical site, B) Isolated persistent urachus cord, C) Ligation of persistent urachus and blood vessels and D) Excised urachus

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