



Congenital umbilical defect with visceral eventration in a two-day-old bovine calf

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Abstract

Congenital abdominal defects in the ventrum are commonly seen in newborn calves. The condition should be addressed immediately to avoid any contamination and injury to organs. This condition can be corrected successfully through surgical intervention. A bovine calf of two days old was brought to the Veterinary Teaching Hospital, Bangladesh Agricultural University, Mymensingh-2202, Bangladesh having congenital umbilical defects with visceral eventration. The calf was operated immediately following standard surgical procedures. The calf was operated without any complication. However, the calf died on the second postoperative day which was known through telephonic conversation. Immediate surgical management and intensive post-operative care are essential for the successful outcome of congenital umbilical defect with visceral eventration in bovine calves.

Keywords: ventral abdominal defects; herniorrhaphy.

INTRODUCTION

Faulty closure of the abdominal wall in prenatal development results in the eventration of parts of visceral organs with its serous sac. The condition can be corrected successfully and should be done immediately to avoid contamination and injury to organs. When contamination of the sac is noticed, it is advised to remove the sac at the level of fissure (Veena *et al.*, 2011). Congenital ventral abdominal defects are very common in calves. Defects in the development of somatopleure lead to various defects in the body wall, especially in the ventral median parts. The umbilical opening is present to provide passage of the urachus, the umbilical vein carrying placental blood and the two large umbilical arteries carrying blood to the placenta. Exposure of the abdominal viscera is very common in schistosomus reflexus which is a rare and fatal congenital disorder, primarily observed in ruminants (Laughton *et al.*, 2005) including spinal inversion in bovine fetal monsters (Knight, 1996).

This defect results from faulty closure of the abdominal wall along the ventral midline with protrusion of the abdominal viscera (Willis, 1962). Congenital intestinal prolapse through the persistent umbilical opening in the newborn calf has been reported by Sharma (2003). The present study records a rare case of congenital eventration of abdominal viscera due to a defect in the umbilicus in a bovine calf and its possible surgical correction.

MATERIALS AND METHODS

Case History and Observations

A two days old female bovine calf was brought to the Veterinary Teaching Hospital (VTH), Bangladesh Agricultural University (BAU) on 02 December 2018 with a history of prolapse of abdominal viscera through the umbilical opening since birth (Figure 1). Clinical examination revealed the presence of abdominal viscera including congested liver, small intestinal loops and mesentery. The abdominal viscera were covered

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with the parietal peritoneum. There was a rise in rectal temperature (40°C) in the calf.

Treatments

The calf was given fluid therapy using normal saline, 0.9% NaCl (Inj. ACME's normal saline 0.9%, The ACME Laboratories Ltd., Bangladesh). The protruded visceral mass was washed with normal saline and all dirt was removed. After aseptic preparation of the operation site, Xylazine (Xylaxin®, Indian Immunologicals Ltd, India) was injected intramuscularly to sedate the patient dosed at 3.5 mg/kg body weight. Then, 2% Lidocaine Hydrochloride (Jasocaine®, Jayson Pharma Ltd., Bangladesh) was infiltrated subcutaneously as a field block around the hernial ring. It was impossible to reduce the contents through the small umbilical opening. Hence, a small incision was given cranio-caudally at the



Figure 1: Prolapse of abdominal viscera through the umbilical opening in the two days old calf

cranial aspect of the opening. The abdominal viscera were replaced into the abdominal cavity through gentle manipulation (Figure 2). The excess part of the peritoneum was trimmed from the base. The peritoneum and abdominal muscles were separately sutured in a simple continuous pattern using chromic catgut no.1-0 (Ethicon, Johnson and Johnson Private Limited, India). The skin was opposed using nylon in the simple interrupted pattern. Post-operative care included injection of antibiotic namely Ceftriaxone dosed at 1 mg/kg body weight (Inj. Renacef vet, Renata Pharmaceutical Pvt Ltd, Bangladesh), painkiller, ketoprofen dosed at 3 mg/kg body weight (Inj. Ketovet, Techno Drug Ltd, Bangladesh) and antihistaminic, pheniramine maleate dosed at 1 mg/kg body weight (Inj. Hista vet, ACI Limited, Bangladesh). But the calf died on 2nd postoperative day.



Figure 2: Relocation of the abdominal viscera into the abdominal cavity through gentle manipulation

RESULTS AND DISCUSSION

In the present case, the herniorrhaphy was successful. After surgery, the calf showed normal physiological parameters. The post-operative observation could not be done as the owner was not willing to keep the calf in the hospital. However, the calf died on the second postoperative day which was known through telephonic conversation. Postmortem examination revealed hemorrhagic and swollen liver. Haemorrhage was also present in the peritoneum and the wall of the intestine. The death of the calf might be due to severe liver trauma and internal haemorrhage. Sagar *et al.* (2010) observed that prolonged manipulation of hernia contents to remove adhesions contributes to the fatality of calves that have undergone surgery for the correction of umbilical hernia.

CONCLUSION

Immediate surgical management and intensive post-operative care are essential for the successful outcome of congenital umbilical defect with visceral eventration in bovine calves.

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