

TRAUMATIC INTESTINAL EVISCERATION IN A NON-DESCRIPT PUPPY & ITS SURGICAL MANAGEMENT

**Bhanu Pratap Singh^{*}, Mahesh Kumar¹, Shubham Narwal¹, A.C. Saxena²,
Shivansh Mehra², Kamalesh Kumar K.S.² and Prarthana. R²**

Indian Veterinary Research Institute, Izatnagar, Bareilly, Uttar Pradesh, 243122

^{1*}, ²Ph.D Scholar, Division of Veterinary Surgery, Indian Veterinary Research Institute, Izatnagar, Bareilly, Uttar Pradesh, ¹Undergraduate Student, Indian Veterinary Research

Institute, Izatnagar, Bareilly, Uttar Pradesh, ²Senior Scientist, Division of Veterinary Surgery, Indian Veterinary Research Institute, Izatnagar, Bareilly, Uttar Pradesh

Corresponding author E-mail : bpsingh.1437@gmail.com

ABSTRACT

Abdominal evisceration is the herniation of abdominal viscera through a defect in the body wall, commonly caused by trauma, bite wounds, or postoperative complications. It poses an immediate threat due to potential contamination and the risk of peritonitis, requiring urgent surgical intervention. A 4-month-old non-descript puppy was presented with abdominal evisceration following a dog bite in the right caudal abdominal region. Clinical evaluation revealed 10–12% dehydration, pale mucous membranes, and necrosed jejunal loops. Hematological analysis showed elevated segmented neutrophils. Emergency surgical intervention was undertaken following stabilization with fluid therapy and antibiotics. Under general anesthesia, the necrosed jejunum was resected and an end-to-end anastomosis performed using a two-layered suturing

technique. The abdominal musculature and skin were closed using standard patterns. Postoperatively, the animal was maintained on intravenous fluids, antibiotics, analgesics, and gastric protectants. The puppy exhibited successful recovery, with defecation occurring within 72 hours and a return to normal appetite without complications. This case underscores the importance of rapid diagnosis and surgical management in improving outcomes in abdominal evisceration. Future studies may explore serum lactate as a prognostic marker in emergency trauma care

Keywords: Canine, Trauma, Evisceration, Intestinal Anastomosis, Intestinal necrosis

INTRODUCTION

Abdominal evisceration is defined as the herniation of the visceral contents of the abdominal peritoneal cavity through a rent (Cigdem *et al.*, 2006). Major cause

of the abdominal evisceration includes traumatic incident, post-bite trauma and postoperative complications (McCarthy *et al.*, 2016). Exposure of the visceral abdominal organs to the contamination of the environment poses immediate threat to the development of peritonitis and requires immediate surgical intervention (Gower *et al.*, 2009). The major tenets of the abdominal evisceration included organ viability assessment, covering of the viscera with moist dressing, exploration of the rent for involvement of organs such as liver or spleen, lavaging of the intraabdominal organs, checking of the necrosed visceral structures and debridement of the wound prior to surgical intervention (Smeak, 2003). The following case study explores one such case in which jejunal intestinal segments eviscerated and its subsequent surgical intervention.

CASE HISTORY AND CLINICAL FINDINGS

A 4-month-old non-descript puppy was brought to the referral veterinary polyclinic (RVP), IVRI, Izatnagar, Bareilly with the history of trauma inflicted by larger dogs to the right caudal abdominal region below the transverse process of 4th -6th lumbar vertebrae (Fig 1). On physical examination animal was found to be exhibiting dehydration status of 10-12% based on skin tenting time test,



Fig. 1: A 4-month-old non- descript dog with eviscerated intestinal loops

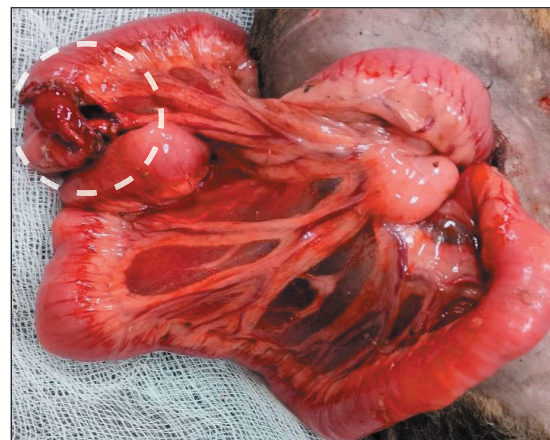


Fig. 2: Eviscerated intestinal loops with crushed and necrosed segment

mucous membrane was pale pinkish, body temperature was 99.1°F (below normal), heart rate and respiratory rate was found to be within normal physiological limits. On close inspection of the eviscerated intestinal loops a crushed and necrosed jejunal segment was located (Fig 2). On hematological examination RBC count was found to be $4.75 \times 10^6/\mu\text{l}$ and segmented neutrophils were found to be elevated at $14 \times 10^3/\mu\text{l}$. Keeping in mind the emergency condition of the animal prompt surgical intervention was decided.

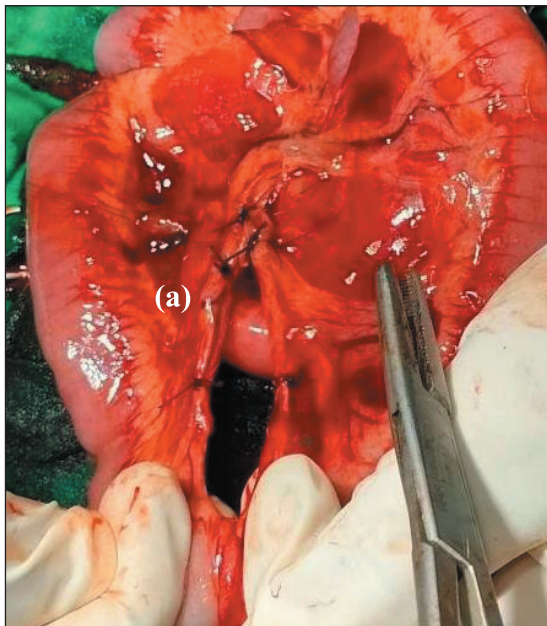


Fig 3: Suturing of the mesentery (a) of the intestines with ford interlocking pattern of sutures

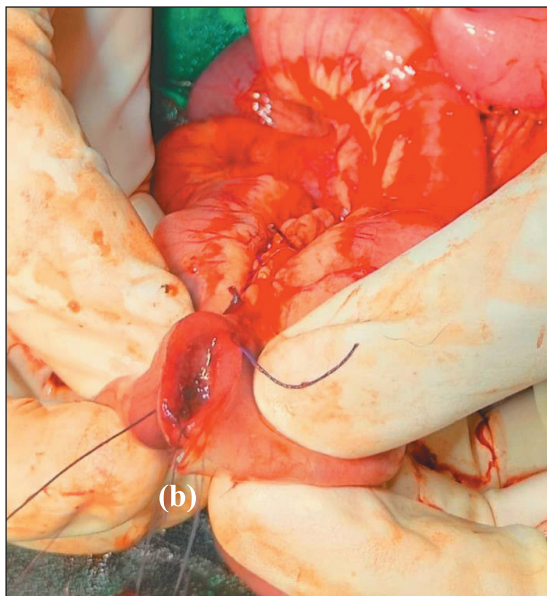


Fig 4: Intestinal anastomosis (b) with double layer of sutures i.e., simple continuous followed by Cushing pattern

Surgical Correction

Preoperatively the animal was ampicillin @30 mg/kg and meloxicam @ 0.2 mg/kg, fluid therapy was initiated with

lactated ringer's solution @ 50ml/kg body weight to check for the dehydration. The animal was premedicated with atropine @ 0.04 mg/kg, xylazine @ 0.5mg/kg, diazepam @ 0.1 mg/kg and induction of intravenous anesthesia was done with ketamine @5mg/kg along with maintenance with Ketamine:Diazepam (volume/volume) @ 1:3 ratio upto effect of the animal. The surgical site was clipped after covering the eviscerated intestines with moist sterile cotton gauge pieces and scrubbed with 2% chlorhexidine around the traumatic site and eviscerated intestines; the traumatic site peripherally was also painted with 0.5% povidone iodine solution.

After aseptically draping the surgical site the exposed jejunal segments were washed with normal saline and metronidazole solution. The site of the trauma at the right lateral abdominal wall ventral to the transverse process of the lumbar vertebrae was enlarged to gain access to the muscular rent of trauma. The jejunal loops especially the necrosed area was inspected for proper resection and ligation. Doyen's Intestinal clamps were applied followed by the application of the ligatures to the mesenteric blood vessels with polyglactin no. 1-0, dorsal to the suite of the intestinal clamps. Local infiltration with 2% lignocaine was done on the proposed line of resection. The

cut ends of the mesentery were sutured with polyglactin no. 1-0 in lock stitch pattern. End-to-end intestinal anastomosis was done by appropriating the size of the intestinal loops i.e., by cutting the ends of the smaller jejunal segment at an angle of 30°. Intestinal loops were sutured in two layered pattern i.e., simple continuous pattern followed by Cushing's pattern with the help of polyglactin 2-0. The rent in the abdominal muscles (abdominal externus, internus and transversus) was sutured with the help of lock stitch pattern followed by skin in horizontal matter pattern.

Postoperatively the animal was maintained on intravenous fluid therapy (Ringers Lactate and Normal saline) with nil-per-os for 7 days and was returned to normal feeding habit after 7 days. Ampicillin @30mg/kg twice a day for 7 days, meloxicam @ 0.2 mg/kg once a day for 5 days, pantoprazole @ 0.7 mg/kg twice a day before meals was administered intravenously or intramuscularly. The animal passed feces successfully 72 hours after the surgery and recovered to normal appetite without any complications.

DISCUSSION

Prognosis of the animal with abdominal evisceration in general is very poor (Bhowmick *et al.*, 2011). In a separate study done in humans the mean

time interval for abdominal evisceration and suture dehiscence as a complication of surgical intervention was 7 days with the serosanguineous discharge being detected prior to dehiscence (Cigdem *et al.*, 2006). In case of animals rapid medical and surgical intervention led to improvement in the prognosis from poor to good. From a research point of view a study evaluating the role of concentration of serum lactate (Stevenson *et al.*, 2007) as a marker for response to treatment be evaluated in trauma patients under critical emergency care in future.

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