CASE REPORT
JIVA 23 (3) December 2025
https://doi.org/10.55296/JIVA/23.3.2025.98-104

Received on 17.12.2025
Accepted on 22.12.2025

SUCCESSFUL SURGICAL MANAGEMENT OF GASTROINTESTINAL FOREIGN BODY OBSTRUCTION IN DOGS: REPORT OF THREE CASES

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ABSTRACT

Three cases of gastrointestinal foreign body obstruction were presented to the Veterinary Clinical Complex (VCC) of PGIVER, Jaipur. The obstructing materials included a stone, a sharp object, and a plastic rubber toy. The dogs, aged eight years, five years, and three months respectively, exhibited clinical signs including anorexia persisting for 5 to 7 days, dyschezia, chronic vomiting, and progressive weight loss. Clinical examination revealed that the patients were dull and dehydrated with normal body temperature, heart rate and respiratory rate. Physical examination revealed abdominal pain and the presence of palpable hard masses in two of the dogs, while the third case showed no significant abdominal abnormalities upon palpation. Plain abdominal radiography was performed, which revealed radio-opaque foreign bodies in all three cases. Following diagnosis, Animal was subjected to surgical operation and enterotomy was done from mid line incision under general anesthesia to retrieve the foreign bodies. Postoperatively inj. intamox @10mg/kg b.wt. for 5 day, inj. Meloxicam @ 0.3 mg/kg b.wt. for 3 days and antiseptic dressing until suture removal. Animal was maintained on fluid therapy for 5 days after that oral feeding was started. The animal was fully recovered and any postoperative complication was not observed. All three dogs had an uneventful recovery and responded well to treatment.

Keywords: Enterotomy, Dyschezia, Obstruction, Radiograph

INTRODUCTION

Gastrointestinal foreign body obstruction is a prevalent clinical problem. Intestinal obstruction is a situation in which the intestinal contents cannot be guided or driven farther in the aboral direction. Intestinal foreign materials are one of the most common and well-known causes of intestinal blockage in

dogs and cats. Obstruction can be partial or complete depending upon the size of the foreign body (Banu *et al.,* 2021). Foreign bodies are objects that are not segment of the animal's normal diet, thus precluding normal digestion (Mullen *et al.,* 2020). Foreign bodies in the gastrointestinal tract are frequently observed in small animal practice. Foreign bodies are more common in dogs due to indiscriminate eating habits, and ingested foreign materials pass through the gastrointestinal tract uneventfully, resulting in a variety of symptoms (Parmar *et al.,* 2020). These animals have clinical signs depending on the degree, location, duration of obstruction, and the presence of pathophysiologic alteration (Maxwell *et al.,* 2020).

Foreign bodies (FBs) may lodge in any portion of the intestinal tract and are most typically recorded in balls, stones, rubber, bones, and plastic (Sharma *et al.,* 2021). Ingestion is the most common mechanism of foreign body entrance in small animals. The impacts of gastrointestinal blockage include changes in fluid balance, acid-base status, and serum electrolyte concentrations caused by excessive secretion and absorption inside the gastrointestinal tract, which becomes worse by vomiting (Banu *et al.,* 2021). Clinical manifestations associated with intestinal foreign materials ranged from severe vomiting to diarrhoea and abdominal pain. Fluid balance, acid-base status, and serum electrolyte concentrations are all affected by gastrointestinal blockage (Maxwell *et al.,* 2020). Diagnosis of intestinal obstruction can be made based on clinical signs, radiography, and Ultrasonography (Banu *et al.,* 2021). The most effective treatment for foreign body obstruction has been shown to be enterotomy. The preoperative therapy of gastrointestinal obstruction focuses on prestoring circulation volume and treating electrolyte imbalances (Maxwell *et al.,* 2020). Prior research showed that dogs with LFBs were more likely to show clinical signs, require more surgical procedures for repair, have intestinal necrosis and perforation, be hospitalized longer and have greater hospitalization costs (Kan T *et al.,* 2022).This paper presents a successful surgical management of intestinal foreign bodies in canines.

CASE PRESENTATION

Three dogs a Cane Corso, a German shepherd, and one of a non-descriptive breed were presented to VCC, PGIVER, Jaipur, with a history of being off feed for 5–7 days, chronic vomiting, difficulty in defecation, and noticeable weight loss over the past week. On physical examination, all three animals were found to be lethargic and moderately dehydrated. Abdominal

palpation revealed significant pain in all the dogs; however, in the Cane Corso, a considerable number of hard, irregularly shaped objects were palpable within the abdomen, while no such abnormalities were detected in the other two dogs. The animals were subsequently referred for radiographic evaluation. Radiographic evaluation in right lateral and ventro-dorsal views revealed the presence of multiple gas-distended loops of small intestine with varying diameters, strongly suggestive of an intestinal obstruction.

Hematological parameters, along with serum electrolyte levels including sodium, potassium, chloride, and bicarbonate, were found to be within normal physiological limits. Based on the clinical and radiographic findings, a diagnosis of intestinal obstruction was confirmed, and surgical intervention was deemed necessary.

TREATMENT

As the animals had already been off feed for 5–7 days, no additional preoperative fasting was required. Preoperatively, each animal was administered an intramuscular injection of Ceftriaxone and Tazobactam (Inj. Intacef Tazo) at a dosage of 15 mg/kg body weight, along with intravenous Ringer's lactate at a rate of 10 ml/kg/hr to correct dehydration and maintain fluid balance. Atropine sulfate was administered at a dose of 0.04 mg/kg body weight as a preanesthetic agent, followed by sedation using Xylazine hydrochloride at 1 mg/kg body weight intramuscularly. General anesthesia was induced with Ketamine hydrochloride at 5 mg/kg body weight and subsequently maintained with 1.5% Isoflurane in oxygen, ensuring full oxygen saturation throughout the procedure.

The anesthetized animals were positioned in dorsal recumbency, with their limbs secured to the surgical table, and the entire ventral abdominal region was aseptically prepared for surgery. A midline incision was made at the level of the umbilicus, followed by careful dissection through the abdominal layers. In the Cane Corso and the non-descriptive breed, a firm mass involving the small intestine, suspected to be a foreign body, was identified and exteriorized (Fig. 2A). The abdominal cavity was packed with sterilized gauze to prevent contamination. A linear incision was given at a healthy segment of the intestine, distal to the site of obstruction. The affected intestinal loops were thoroughly lavaged with sterile normal saline and closed using 3-0 polydioxanone in a simple interrupted suture pattern (Fig. 2C). The abdominal wall and skin were sutured using standard closure techniques. In the German shepherd, a linear foreign

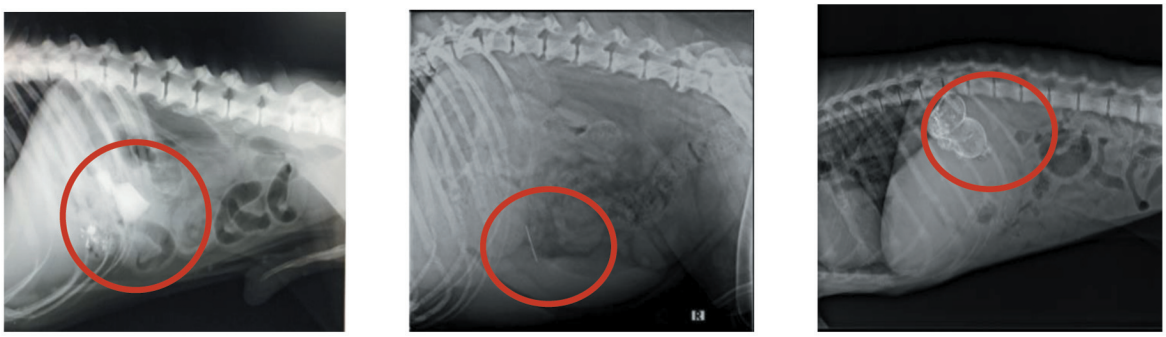
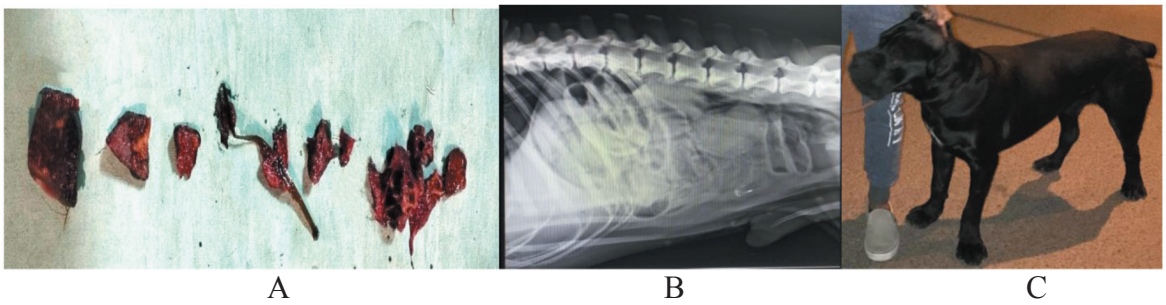


Fig. 01: Presented Radio opaque opacities seen at abdominal region in different breeds (red circle): (Lat views)

A B C

Fig. 02: A. Retrieval of foreign body/stone and needle B. Interrupted suturing of intestine using polydioxanone (3-0) C. Cross mattress suture on skin



A B C

Fig. 03: A. Retrieval of multiple stones B. Post operative normal lateral radiograph C. Fully recovered animal after one month of surgery.

body was identified embedded within the subcutaneous fatty tissue layer, and therefore, enterotomy was not required. Post-operatively, all animals were kept off feed and maintained on intravenous fluid therapy, including Ringer's lactate and dextrose normal saline, for five days. Antibiotic therapy was initiated with Ceftriaxone-Tazobactam (Inj. Intacef Tazo) at 15 mg/kg body weight intramuscularly for five days, along with Meloxicam at 0.3 mg/kg body weight intramuscularly for three days to manage inflammation and pain .The surgical site was dressed daily with povidone-iodine ointment until suture removal on the 10th post-operative day. Solid feeding was gradually reintroduced thereafter.

DISCUSSIONS

All animals exhibited uneventful recoveries, with no post-operative complications observed. The present study concluded that radiographic examination serves as a valuable diagnostic tool for confirming the presence of foreign bodies. Radiographic examination demonstrated high efficacy in detecting foreign bodies such as sewing needles, rigid materials, and rubber objects. The varying densities and thicknesses of these materials increase their resistance to X-ray penetration, resulting in enhanced radiopacity. Consequently, these foreign bodies are visualized as distinct radiopaque (white) structures on radiographic images, thereby aiding in their accurate identification.

According to Raghunath *et al.* (2016); Mahesh *et al.* (2019) Similar to this case, a range of foreign materials can cause obstructions, the most common of which being stone. Palpation of the abdomen provides some diagnostic information. When gastrointestinal foreign bodies are suspected, radiography is usually used. However, in many circumstances, conventional abdomen radiographs may not be significant, and abdominal ultrasonography may be necessary to confirm the diagnosis (Hoday *et al.,* 2014). According to studies done by Mahesh *et al.* (2019), the small intestine is typically the location of obstruction because of its lower luminal diameter, necessitating surgical intervention. When a dog exhibits intestinal blockage, the goal of treatment is usually to maintain hemodynamic stability while making sure the animal is a good candidate for anesthesia by maximizing perfusion and addressing electrolyte imbalances (Tello *et al.,* 2017).

CONCLUSION

Based on the findings of the present study, enterotomy has been demonstrated to be an effective and reliable surgical procedure for the removal of both linear and non-linear foreign bodies from the gastrointestinal tract. Furthermore, radiographic imaging has proven to be a suitable and valuable diagnostic tool for the detection and localization of such foreign bodies within the abdominal cavity with a low incidence of postoperative septic peritonitis and a high probability of survival.

CONFLICT OF INTEREST

The authors declare no conflict of Interest.

ACKNOWLEDGEMENT

The authors are thankful to the Dean PGIVER, Jaipur for the facilities provided.

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