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## Surgical management of intestinal foreign body in cat: A case report

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### Abstract

A two-year-old male Persian cat presented with a history of ingesting an eraser, along with symptoms of anorexia, lethargy, and constipation persisting for five days. Upon clinical examination, the cat exhibited depression, dehydration, and severe abdominal pain, with a tense abdomen upon palpation. Complete blood count (CBC) and routine serum biochemical analysis yielded results within normal ranges. Radiographic examination revealed the presence of a radiopaque structure in the intestine, indicating an intestinal foreign body. Following general anesthesia, a ventral midline celiotomy was performed, revealing the foreign body lodged in the jejunum region. The foreign body was successfully removed, and the cat experienced an uneventful recovery.

**Keywords:** foreign body, Persian cat, celiotomy

### Introduction

Cats are known to ingest foreign bodies (FBs), often leading to intestinal obstruction, which ranks among the most prevalent gastrointestinal disorders necessitating emergency surgical intervention. These foreign bodies can become lodged in any part of the intestinal tract, with obstruction typically occurring more frequently in the small intestine when the luminal diameter narrows (Papazoglou *et al.*, 2003) [6]. Gastrointestinal obstruction disrupts fluid balance, acid-base equilibrium, and serum electrolyte concentrations due to increased secretion and retention within the gastrointestinal tract, exacerbated by vomiting and reduced oral intake of fluids and nutrients (Boag *et al.*, 2005) [2]. Foreign bodies in the gastrointestinal tract may result in either complete or partial obstruction, with the jejunum, ileum, and duodenum being the most commonly affected sites, ranked by frequency. Complete intestinal obstruction often manifests with significant distention of the intestines proximal to the obstruction, along with congestion or cyanosis in the distended intestinal loops. This paper details the swift diagnosis and surgical intervention leading to the complete recovery of a cat suffering from complete intestinal obstruction caused by a foreign body.

### Case history and Observations

A two years old male Persian cat weighed 4.5 kg was brought to the surgical department of the Bai Sakarbai Dinshaw Petit Hospital for Animals with a history of ingestion of eraser, anorexia, constipation that had been present from five days. Clinical examination revealed that cat's temperature, respiration rates and heart rate were normal, and it was also dehydrated, dull, inactive, and abdominal palpation revealed severe abdominal pain and tensed abdomen. Haemato-biochemical analysis (Table: 1) were within normal range. Radiographic examination revealed radio opaque structure was present in intestine (Fig. 1). It was ultimately determined to be incidence of intestinal foreign body based on Radiography.

**Table 1:** Haematobiochemical parameter before surgery

Parameter	Reference range	Case
Hemoglobin (g/dL)	9.5 to 15	14.3
PCV (%)	29 to 45	39.3
TLC ( $10^3/cc$ )	5.5 to 19	17.4
Neutrophil count (%)	35 to 70	84
Lymphocyte count (%)	20 to 55	11
Total protein (g/dL)	5.9 to 8.5	6.12
Serum albumin (g/dL)	2.4-4.1	2.42

**Fig 1:** Lateral radiograph showing radio opaque structure in intestine**Fig 2:** Intestine showing foreign body**Fig 3:** Intestine after suturing**Fig 4:** Foreign body after removal

### Surgical treatment

The animal was premedicated with triflupromazine hydrochloride @ 2 mg/kg followed by ketamine hydrochloride @ 25 mg/kg body weight intramuscularly. General anaesthesia was induced using propofol @ 4 mg/kg b.wt intravenously, respectively. The anaesthesia was maintained with 1/3 to 1/2 of induction dose of the above intermittently as and when required. Cefotaxime and meloxicam were administered intravenously @20 mg/kg and 0.2 mg/kg body weight respectively. The cat was prepared for aseptic surgery. The animal was held in a dorsal reclining position. A ventral midline celiotomy was performed. Intestines were exposed from the site of the incision. On examination, foreign body was noticed at the jejunum region (Fig. 2). Atraumatic clamps were applied on the proximal and distal ends of the affected parts, before resection. The atraumatic clamps were brought closer to each other with both ends of intestinal parts. Upon identification of the foreign body enterotomy was performed. An incision was given in healthy-appearing tissue distal to the foreign body. Foreign body was removed (Fig. 4) and cleaning of the intestinal segment with normal saline solution was done. Enterotomy wound were closed with inverted double layer pattern cushioning followed by lambert suture pattern using monofilament absorbable suture material (3-0 polydioxanone) (Fig. 3) and placed omentum over the suture line before closing the abdomen. Entire Intestinal tract was evaluated before closing. No areas of perforation or compromised vascular supply were observed and therefore, intestinal resection was not necessary. Abdominal lavage was performed with warmed normal saline solution and abdomen was closed routinely. Postoperatively, the owner was instructed to keep the cat off food for 3 days and cat was maintained with parenteral nutrition twice daily and antibiotic was continued for seven days post-surgery, later on advised to give liquid and semi-liquid diet. Daily wound dressing using povidone iodine and application of fly repellent spray was also advised. The skin sutures were removed 10 days postoperatively and the cat was reported to have normal appetite and defecation with no incidence of constipation.

### Discussion

The presented cat had anorexia, depression, abdominal pain, constipation that had been present from five days. According to (Capak *et al.* 2002; Orsher and Rosin, 1993) <sup>[3, 5]</sup>, common clinical signs include anorexia, dehydration, depression,

abdominal pain or discomfort, and vomiting. The diagnosis of the presented case was done by plain radiography. According to Lamb (1999)<sup>[4]</sup>, the diagnosis of foreign body obstruction is typically established through radiographic imaging. A hallmark radiographic indication of mechanical obstruction is the presence of numerous gas-filled loops within the small intestine of varying diameters. In dogs, a small intestinal diameter exceeding 1.6 times the depth of the midcentrum of the fifth vertebra has been utilized as a predictor of intestinal obstruction. As outlined by Bebchuk (2002)<sup>[1]</sup>, the preferred treatment for intestinal foreign body obstruction is surgical intervention. The surgical approach involves a ventral midline laparotomy extending from the xiphoid to the pubis. During surgery, thorough exploration of the entire intestinal tract is essential to identify any additional foreign bodies and to assess whether the object caused any intestinal trauma during passage, a protocol followed in this case. It is generally not advisable to perform an enterotomy proximal to the obstruction, as distension with gas and fluid, along with the passage of the foreign body, may have resulted in some degree of vascular compromise, as observed in this case (Orsher and Rosin, 1933)<sup>[5]</sup>.

### Conclusion

The surgical management of an intestinal foreign body in the cat presented a successful resolution of a potentially life-threatening condition. Surgical intervention, involving careful abdominal exploration and removal of the foreign body, was crucial in preventing further complications such as intestinal perforation, peritonitis, and septicemia. The procedure was performed with careful attention to tissue handling and hemostasis, contributing to a favorable outcome. Early surgical intervention is essential in mitigating the risks associated with gastrointestinal obstruction and optimizing the chances of a successful outcome.

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### Conflict of interest

No potential conflict of interest relevant to this article was reported.

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