AN UNCOMMON CASE OF GASTROINTESTINAL FOREIGN BODY IN CAT

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Abstract

Gastrointestinal foreign bodies are commonly encountered in veterinary pathology. The patient may present a variety of clinical signs, depending on the shape of the swallowed object, as well as the site and extent of obstruction. The aim of this study is to describe an unusual case of linear gastrointestinal foreign body, in a 3-year-old cat, referred to the Faculty of Veterinary Medicine Iasi, Surgery Department. The anamnesis and clinical examination suggested a gastrointestinal foreign body, subsequently confirmed by ultrasonography, therefore surgical intervention was the treatment of choice. After anesthesia, oral examination revealed an anchored thread around the base of the tongue which couldn't be extracted by conservative methods, due to the traction resistance. Exploratory celiotomy and enterotomy were performed, the thread being entirely removed after it was freed from the tongue. The patient recovered uneventfully without postoperative complications.

Key words: enterotomy**,** linear gastrointestinal foreign bodies, anchored

Linear foreign bodies (LFB), more frequent in cats than dogs, determine a particular type of intestinal obstruction in small animals, due to the extensive lesions of the gastrointestinal tract. (Papazoglou, L. G. *et al*, 2003)

Linear foreign body in cats are associated with a higher mortality rate than non-linear ones, due to the fact that they typically perforate the mesenteric border of the small intestine (Allan, R. M., 2015)**.** In cats, this mucosa sectioning is favored by the fact that part of the object can anchor at the base of the tongue, and the remainder advances into the digestive tract. As peristaltic waves attempt to advance that LFB, the intestinal loops will gather around it, following that after a continuous peristalsis, the object will lacerate the mesenteric border. This will lead to intestinal content leakage and peritonitis (Fossum, T. W., 2018).

The main ingested objects with linear configuration include thread, wires, string, dental floss, ribbon or even cassette tapes. (Fossum, T. W., 2018).

In LFB vomiting is usually the most common presenting complaint, closely followed by anorexia and sometimes bloody diarrhea (Papazoglou, L. G. *et al*, 2003).

Diagnostic imaging usually leads to a tentative diagnosis, only in exceptional cases being able to highlight the LFB directly. Animals with linear foreign bodies usually don't have any obvious lesions on plain radiographs. It is also difficult to examine the entire digestive tract using ultrasounds, and sometimes, some foreign objects can be missed (Allan, R. M., 2015; Fossum, T. W., 2018).

MATERIAL AND METHOD

A three-year-old cat, mixed breed, presented to the Veterinary Teaching Hospital, IULS, with complaint of acute onset of vomiting, inappetence, and lethargy. The symptoms persisted for two days prior examination.

The physical examination revealed moderate fever and abdominal pain, but no mass could be identified at the abdominal palpation.

Ultrasonography revealed a hyperechoic structure within the intestinal lumen. These imagistic and clinical changes were consistent with those occurring in feline gastrointestinal foreign body.

Diagnostic was made correlating the clinical history, physical examination and abdominal ultrasonography. Due to financial problems and the fact that abdominal radiographic findings usually are not consistent, radiographs were not taken. The suspected pathology had to be differentiated from other diseases causing intestinal obstruction: intussusception, intestinal volvulus, strictures, adhesions, congenital abnormalities or neoplasia. (Fossum, T. W., 2018).

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After anesthesia induction, the oral cavity could be examined well enough and a thread was found to be wrapped around the tongue *(figure 1 a)*. The anesthetic protocol consisted of xylazine (2 mg/kg) IM and ketamine (15 mg/kg) IM.

The loop of intestines was isolated with compresses. In order to remove the thread, two enterotomies on the antimesenteric border were necessary *(figure 2 a, b)*. If the extraction would

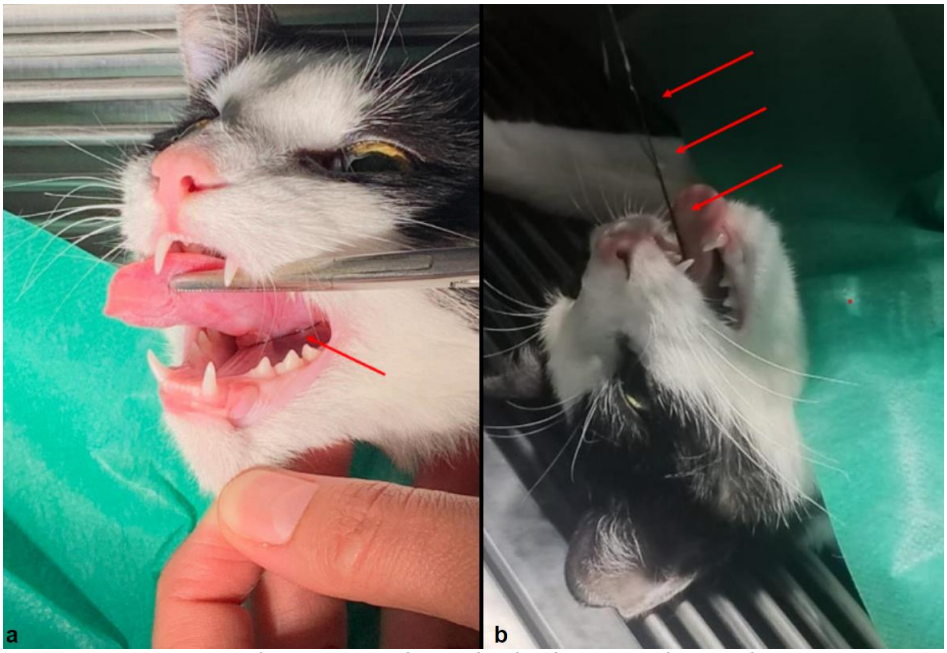


Figure 1 a. Oral examination b. LFB oral extraction
(red arrows indicate the presence of the LFB)



Figure 2 a. First enterotomy, followed by extraction. b. Second enterotomy

The patient was positioned in dorsal recumbency, for a ventral midline laparotomy, and the area prepared for surgery.

A ventral midline incision was made, and the entire abdominal cavity inspected to assess if the object caused any intestinal trauma in transit. The exploratory celiotomy revealed plication of the small intestines.

Have been done through the same incision, friction of the object against the intestinal mesenteric border might lead to iatrogenic laceration of it.

Unlike other cases, after performing enterotomy and removing a segment of thread, the

remaining object could be pulled out orally, from the sublingual anchored point *(figure 1 b)*.

After removing the foreign body, the intestines were closely examined, for evidence of necrosis that may require enterectomy. The intestinal segment was viable, with no signs of ischemia, necrosis or lacerations, therefore the enterotomy was closed using a 2-0 PDS (Polydioxanone), in a simple interrupted suture *(figure 3 a)*. Although most absorbable suture materials can be used, atraumatic needle with monofilament thread are preferred due to low susceptibility to bacterial adhesion, compared to multifilament. It also allows a clearance of bacteria by the immune system.

a risk of the conservative management in this pathology (MacPhail, C., 2002).

Sublingual fixation of the thread can easily be missed initially, if not specifically searched (Basher, A. W *et al*, 1987). The linear foreign body generally cannot be detected even with careful abdominal palpation; despite this, intestinal plication can be observed, and the pathology suspected (Bebchuk, T. N., 2002).

Imagistic examination is useful**.** A radiographically strong evidence for the presence

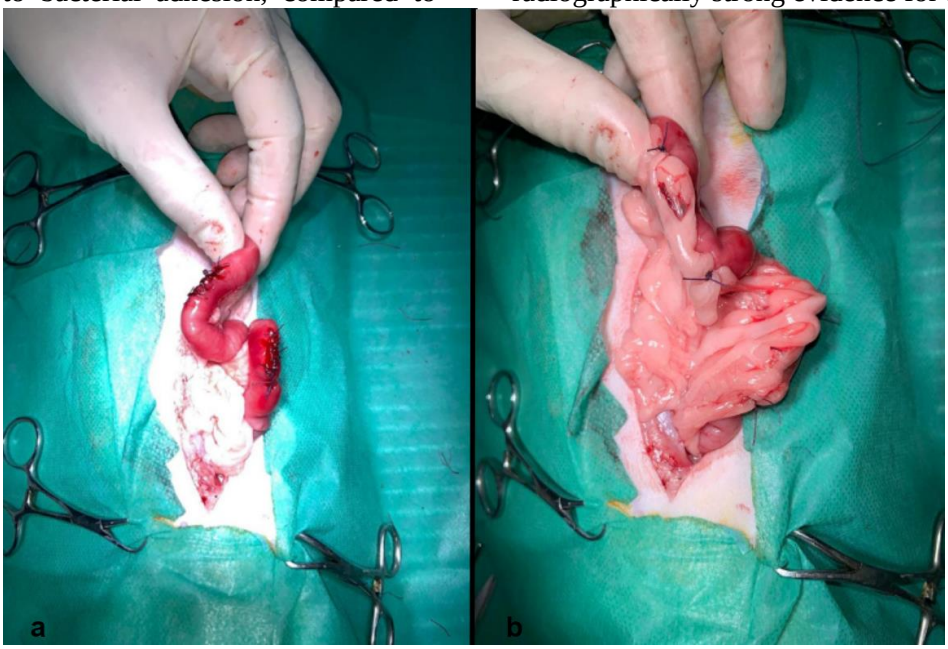


Figure 3 a. Enterorrhaphy; b. Omentalisation

The exteriorized intestinal portion was washed with saline prior omentalization. The omentum was sutured loosely in place in order to reinforce the site *(figure 3 b)*. This procedure provides additional blood supply and increases leakage resistance.

The abdominal cavity has to be examined, due to the fact that some animals with linear foreign bodies have concurrent intussusceptions (Fossum, T. W., 2018).

Postoperative care included monitoring for signs of leakage or peritonitis, analgesics and antibiotics due to possible abdominal contamination. Water was offered after 12 hours after surgery, because no signs of vomiting were seen.

The cat recovered without any complications.

RESULTS AND DISCUSSIONS

Some authors consider that surgery has to remain the treatment of choice due to the high mortality rate (50%) of the LFB lacerated intestine, of a linear foreign body is accordion-like pleating of the small intestines, shortening or gathering of the intestine, increased number of eccentrically located comma-shaped or tapered luminal gas bubbles, or peritonitis subsequent to bowel laceration. The plication of intestinal tract is also observed in ultrasonography, but in this case has to be distinguished from intussusception. In order to do that, identifying the hyperechoic structure within the lumen as well as the lack of wall layers that form a concentric ring, is useful (Bebchuk, T. N., 2002).

The prognosis in linear foreign bodies worsens dramatically with the increasing number of days after ingestion. In a 2009 study, cats with linear foreign bodies of over 14 days duration, had to be

euthanased intraoperatively because of multiple ruptures and peritonitis (Hayes, G., 2009).

The medical management of linear foreign body in cats include a conservative or a surgical treatment. Fossum T.W. recommends that if cats with linear foreign body, anchored at the base of the tongue, are presented in the first three days

Table 1

LFB management

Conservative management	Surgical intervention
Cat presented immediately after swallowing the LFB	Persistence or worsening of clinical signs in conservative management
Cat presented with a sublingually anchored LFB and has no apparent signs of peritonitis	Cat presented with clear signs of peritonitis, severe abdominal pain, pyrexia,
	Obvious pyloric fixation of the LFB

Basher, A. W *et al*, 1987; Fossum, T. W., 2018

after ingestion, and the general condition of the animal permits it, the thread can be cut and then monitored for passage. All this time, animal has to be under hospital observation, because if the general condition did not improve or it's getting worse, the patient should be taken to surgery. In Basher's study (Basher, A. W *et al*, 1987), the length of the conservative therapy varied from one to six days.

The dehydration and laboratory changes should be corrected by appropriate fluid therapy, before surgical intervention.

Surgery should never be delayed if abdominal pain, vomiting, fever and lethargy is apparent. Usually, in linear foreign bodies, the longer the surgery is postponed, the greater its complexity gets. The object may become embedded in the mucosa, and the intestinal resection required (Fossum, T. W., 2018).

Decreasing the incision number on the gastrointestinal tract will improve the surgical survival rate (Allan, R. M., 2015).

The decision of surgical intervention or conservative management is influenced by several factors, systematized in *Table 1*.

CONCLUSIONS

Due to continue peristaltic activity and continuous erosion of mesenteric intestinal border, linear foreign body ingestion should be treated as an emergency condition, regardless of the therapeutic procedure approached.

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