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Successful surgical management of gastro-intestinal linear foreign body in a 9 months old Indian male dog: A case report

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Abstract

An Indian male dog aged 9months weighing 20kg was presented to the hospital with a history of intermittent multiple episodes of vomitions, anorexia, lethargy. On physical examination there was no abnormality found except dullness. Radiographic examination of abdomen revealed gas filled intestinal loops with some small radio-opaque structures in the lumen suggestive of foreign body obstruction. Ultrasonographic examination confirmed the diagnosis with a significant target appearance of intestinal loops along with presence of a wide hyperechoic linear foreign body with stripes in the lumen of distended bowel loops. The Gastro-enterotomy was performed and the nylon metallic curling decorative ribbon was recovered. An uneventful recovery was noticed without any complications after one week of proper post operative antibiotic therapy and fluid administration.

Keywords: Gastro-enterotomy, foreign body, intestinal obstruction

1. Introduction

Gastric and intestinal foreign bodies are most commonly encountered issues in companion animal practice because of their indiscriminate feeding habits and may present with a variety of clinical signs depending on location, the degree and the duration of the obstruction resulting from them (Aronson *et al* 2000; Papazoglou *et al* 2003) [3, 12]. Obstruction due to linear foreign bodies is one of the important surgical affection of intestines that are very difficult to diagnose therefore careful physical, clinical, radiological and/or ultrasonographic examination is necessary. surgical retrieval of foreign body is the only option in such cases where multiple enterotomies at different sites and gastrotomy have to be performed in order to remove foreign body completely (Mahesh *et al* 2019) [10]. The present paper reports the successful surgical management of complete gastro-intestinal tract obstruction due to a linear foreign body (Nylon metallic curling decorative ribbon) in a nine month old male Indian dog.

2. Case History and Observations

A nine month old Indian dog weighing about 20kg was presented to Dr.dog pet hospital, Hyderabad as an outpatient with a complaint of severe vomitions at infrequent times, dullness, anorexia and lethargy. There was no abnormality on physical examination except dullness, lethargy. Plain radiography revealed gas filled intestinal loops along with suspicious small radiopaque objects inside their lumen but not confirmative, hence abdominal ultrasonography was done which confirmed a linear tape like foreign body having stripes obstructing the lumen (Fig 1) along with target appearance of intestinal loops (Fig 2). An emergency exploratory laparotomy was planned and performed.

3. Treatment and Discussion

The dog was stabilized with ceftriaxone @ 20mg/kg and fluids RL and DNS @5ml/kg body weight I/V prior to surgery. Premedicated with Xylazine@1.5mg/kg I/M Buprenorphine @0.02mg/kg I/M, Ketamine @0.5mg/kg I/M and sedated with a mixture of Diazepam @0.25mg/kg; Propofol @1mg/kg I/V and maintained with 1.5% isoflurane inhalation anaesthesia.

The dog was positioned in dorsal recumbency and the surgical site was prepared aseptically. Mid ventral laparotomy was performed, and the plicated intestinal loops were exteriorized gently to the incision site (Fig 3) Three enterotomy incisions on ileum, jejunum and colon were made at the antimesenteric border to remove the obstructed linear foreign body (Fig 4) and it was found to be a nylon metallic curling decorative ribbon (Fig 5) but not able to remove it completely because it is continuing cranially. The enterotomy wounds were irrigated with warm normal saline and then sutured in single layer by simple continuous suture pattern using 3-0 polyglactin 910. Further the search followed cranially towards the stomach. Upon thorough examination, something hard palpated in the stomach. Then gastrotomy was performed to remove the remaining foreign body and the incision was closed by double inversion suture pattern using 3-0 polyglactin 910. The linea alba was closed using polyglactin 910 no.1 in a continuous lock stitch followed by subcutaneous and cutaneous sutures routinely. Postoperatively the dog was kept on total off feed and water for five days and fluid therapy inj. RL @10ml/kg, inj. DNS @10ml/kg, inj. Metronidazole @ 5ml/kg I/V were initiated BID along with ceftriaxone @20mg/kg for 5 days and Paracetamol @15mg/kg I/V SID for 3days. After five days dog was allowed on liquid diet followed by solid diet after seven days. Skin sutures were removed on 12th postoperative day. Dog was recovered uneventfully without any complications within 2 weeks completely.

The gastric foreign body obstruction was higher in young dogs because of their voracious and indiscriminate and gulping nature of feeding habits (Fossum, 2007) [7] in the present case report also, the dog was young and of nine months old. Dogs may ingest various linear foreign bodies like ropes, threads, cloth pieces, wires, and other potential foreign bodies like fish hooks, needles, bones etc. Foreign bodies lodged in the gastrointestinal tract can cause ulceration, haemorrhage, anorexia, dehydration, perforation, peritonitis and can result in death if not treated in time (Anoop *et al.*, 2010) [1]. Obstruction with a linear foreign body can result in increased peristaltic activity, which may contribute to the laceration of the intestinal wall (Manjunatha *et al.*, 2019) [11]. Delayed surgical management of obstruction can result in necrosis and irreparable damage to the intestine (Das *et al.*, 2015) [6]. In such cases, intestinal resection and anastomosis are indicated to save the life of the animal (Hoffman *et al.*, 2022) [8]. Linear foreign bodies are reported to be associated with higher mortality than non-linear foreign bodies in cats and often results in plication of the small intestine (Allan 2015) [2]. Linear intestinal foreign bodies have been reported to be higher in cats (50-61%) (Bebchuk, 2002) [5] Than dogs (36%) (Boag *et al.*, 2005) [4]. Common anchorage point for linear foreign bodies in dogs is the pylorus, distal duodenum and proximal jejunum (Hayes, 2009) [9]. Other sites are mid-jejunum and jejuno-ileum (Allan, 2015) [2].

The major challenges with the management of gastrointestinal foreign bodies are early diagnosis, assessment of anaesthetic risk and compromised electrolyte and acid-base status. Surgical management and wound healing are compromised by intestinal wall viability, intraluminal bacterial growth, ileus, hypoproteinaemia (Ralphs *et al.*, 2003) [13]. Enteric wound breakdown and leakage are the most serious and catastrophic complications of surgery on the gastrointestinal tract (Hayes, 2009) [9]. The successful outcome in the present case may be attributed to timely diagnosis, aseptic surgical technique, and proper post operative care.

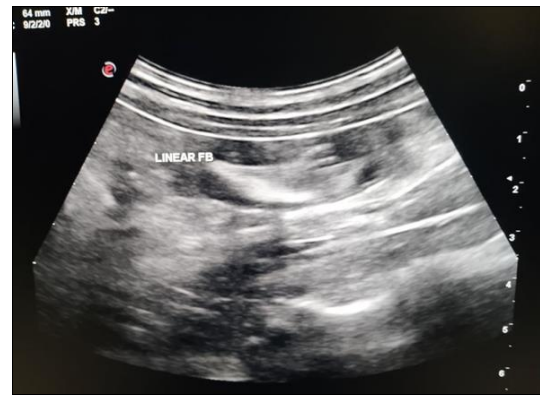


Fig 1: Ultrasonogram showing linear tape like foreign body having stripes in the intestinal lumen



Fig 2: Ultrasonogram showing target appearance of intestinal loop



Fig 3: Intraoperative image showing exteriorized plicated intestinal loops to the incision site



Fig 4: Intraoperative image showing enterotomy incision revealing linear foreign body



Fig 5: Image showing retrieved linear FB (i.e Nylon metallic curling decorative ribbon)

4. Conclusion

The present paper reports the successful surgical management of gastrointestinal linear foreign body obstruction in a young male Indian dog. Proper diagnosis using plain and/or contrast radiography and ultrasonography and prompt aseptic surgical technique and effective post operative management plays a significant role in preventing mortality associated with gastrointestinal foreign body obstruction.

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