

SURGICAL REMOVAL OF G.I. TRACT FOREIGN BODIES IN DOG – A REPORT OF FOUR CASES

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Introduction

Incidence of ingestion of foreign bodies is quite common in dogs. Engulfment of foreign body may be accidental or due to bad habit. Indiscriminate feeding habit predisposes the dogs to foreign body syndrome. Animals with conditions that predispose them to pica and habit of allotrophagia due to worm load are at increased risk for foreign body ingestion. Mechanical obstruction is the most common indication for gastro-intestinal surgery in dogs. Gastro-intestinal obstruction with foreign bodies and their successful surgical management have been reported by Gahlot *et al.* (2003) and Singh *et al.* (2004). The present paper reports surgical correction of gastro-intestinal obstruction in four dogs i.e. due to a tarpaulin cloth entangled around a pin (Case 1), an inner garment (Case 2), a tennis ball (Case 3) and a tin bottle cap (Case 4).

Case history and observations

Four dogs were presented with a complaint of loss of appetite, persistent to intermittent vomiting, abdominal distension, absence of defecation or dyschezia and obstipation and weight loss. The case history revealed accidental ingestion of a tennis ball while playing with it and in case 4, the dog swallowed a medicine bottle cap while administering medicine and in other two cases owners' could not provide any relevant history. The cases were treated earlier by administering fluid, antibiotics, antiemetics, antacids and gastro-intestinal lubricants etc. however there was not much response. On physical

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examination eyes were shrunken and skin was tenting indicating significant dehydration. Abdominal palpation was done carefully to assess the severity of abdominal pain manifested by crying looking at the abdomen and arched back. The intestines were slipped between the fingers of both the hands with gradual gentle pressure as suggested by Orsher and Rosin (1993) to palpate foreign bodies if any. Lateral abdominal radiographs were










obtained for confirmation of diagnosis of gastro-intestinal obstruction (Raghavendra *et al.*, 2008). Obstruction was diagnosed with plain radiographs in two cases (case 2 and 4). Barium series of gastrointestinal tract was necessitated in one dog (case 1).




Treatment

Dogs were operated under general anesthesia following induction with intramuscular administration of a combination of atropine sulphate @ 0.04mg/ kg b wt, xylazine hydrochloride @ 1 mg/ kg b wt and ketamine hydrochloride @ 5 mg/ kg b wt and maintenance with subsequent intravenous administration of ketamine hydrochloride through the venous port. Animals were positioned on the operating table either in ventro-dorsal (case 2) or left lateral recumbency (case 1, 3 and 4). The surgical site was prepared aseptically. Ceftriaxone @ 10mg/ kg b wt and Meloxicam @ 0.05mg/ kg b wt were administered intramuscularly prior to surgery. In ventro-dorsal recumbency the obstructed portion was accessed through post-xiphoid midventral laparotomy incision and in left lateral recumbency through the lower flank laparotomy incision and pulled out of the abdomen as per the standard surgical procedure (Fossum, 2007). The incision was made close to the foreign body in antimesenteric area avoiding blood vessels. Foreign bodies retrieved were a tarpaulin cloth entangled around a pin, an inner garment, a tennis ball and a bottle cap. The gastrotomy or enterotomy incision was closed in two layers cushioning followed by lembert with 3-0 vicryl suture. The exposed serosa was irrigated with normal saline locally to rinse and dilute the contamination. Peritoneum and muscle layers were sutured with 1-0 vicryl in simple continuous manner. Subcutaneous sutures were given by 1-0 vicryl followed by skin sutures by silk in simple interrupted fashion. Post-operatively ceftriaxone and meloxicam were continued once daily for six days and two days respectively. Replacement therapy using Ringer's lactate and normal saline was given

during the pre-operative, intra-operative and post-operative period to correct dehydration. The animals were maintained on fluid therapy for the first three days, then on liquid diet for the next three days. Normal diet was started on

7th post-operative day. Daily dressing with povidone iodine solution was done until complete healing and the skin sutures were removed on the 10th day.

		
Contrast radiography revealed one metallic and another nonmetallic foreign body in the stomach	Gastrostomy was conducted at lesser curvature and a barium coated tarpaulin cloth entangled around a pin was taken out	Stitches removed on 10 th day after complete recovery
CASE NO. – I		
		
Plain radiography revealed a radiolucent mass within the distended stomach	Distended stomach is seen through the ventral midline laparotomy incision	An inner garment was taken out after conducting Gastrostomy
CASE NO. – II		
		
Gastrostomy was conducted	Removal of tennis ball from the stomach	Laparotomy wound was closed
CASE NO. – III		

		
<p>A German Shepherd pup swallowed a bottle cap</p>	<p>Radiograph revealed a bottle cap inside the jejunum</p>	<p>Jejunum containing the cap was isolated and enterotomy was conducted to remove cap</p>
<p>CASE NO. – IV</p>		

Results and discussion

The diagnosis of intestinal obstruction was based on history, careful physical examination of abdomen, clinical signs and radiographic findings (Gibbs and Pearson, 1973 and Lamb, 1994). All the dogs in this study resisted abdominal palpation exhibiting signs of abdominal pain. The course and onset of disease depends on the site of obstruction and extent of obstruction. Foreign bodies located in the fundus of the stomach usually cause no symptoms. If they lodge in the pyloric portion of the stomach, gastric emptying may be impaired. Clinical signs also varied with the degree of obstruction, location, duration and type of foreign body; however, vomiting is almost always the hallmark sign of gastric foreign bodies (Ettinger and Feldman, 2000). If the object is large, they may completely obstruct the outflow and the vomiting may be too frequent. Vomiting may be intermittent, if the foreign body is small and animals may continue to eat and remain active. Other signs like retching, loss of appetite, absence of defecation, weight loss, lethargy and abdominal pain may also be noted.

Proximal location of the stomach prevents palpation of foreign bodies and palpation by itself is rarely diagnostic unless severe obstruction occurs, hence radiography is found to be promising (Fossum, 2007). Foreign bodies like inner garment and bottle cap were readily visualized on radiographs and offered no diagnostic challenge, but the case with tarpaulin cloth entangled around a pin presented a difficult diagnostic challenge. However, in this case contrast study helped confirm the diagnosis of intestinal obstruction (Raghavender *et al.*, 2008).

Foreign bodies that are capable of being swallowed but may not exit the stomach and instead become lodged there and if, left untreated usually result in mucosal laceration, severe inflammation, pressure necrosis, ulceration, starvation, dehydration and eventually death (Chiang and Chou, 2005). However, smaller foreign bodies may eventually exit the stomach and pass harmlessly in the feces with bowel movement and it usually occurs within 36 hours of ingestion. Patients with this condition require continual monitoring, periodic radiography to determine if the object is moving through the intestines, fluid administration to maintain hydration, and administration of antibiotics. Failure to radiographically demonstrate movement of the foreign body within the gastro-intestinal tract over an 8 hour period or no excretion within 36 hours indicates that surgical intervention is necessary. Surgery is also indicated at any time during the observation period, if abnormal findings such as abdominal pain, fever, vomiting and lethargy appear (Rao *et al.*, 2010). So, immediate surgical correction is required for most gastro-intestinal obstruction.

In the present study the majority of patients presented with gastro-intestinal obstruction were clinically dehydrated. Usually the pressure exerted by the foreign body against the stomach wall together with the continued stretching and bunching of the stomach result in poor tissue perfusion resulting in increased secretion of sodium, potassium and water in to the bowel. In addition, the endotoxin if prepared at the proximity of obstruction and released in to the blood stream can lead to toxemia and shock,

so it is important that dogs presented with foreign bodies should be treated quickly (Horstman *et al.*, 2003) and the fluid and electrolyte abnormality should be corrected immediately. Pre and post operative fluid administration helped assure adequate tissue perfusion and to correct acid-base abnormalities. The volume of urine production and skin tenting time were used as rough guides for monitoring hydration.

However, prognosis of gastro-intestinal foreign body is always depended up on the cause of obstruction and severity of complications associated with it.

Summary and Conclusion

Gastrotomy was performed in three cases and enterotomy was performed in one case and the cause of obstruction was removed. Timely diagnosis of gastro-intestinal foreign bodies, surgical intervention for retrieval of foreign bodies and post operative management with fluid and nutritional support and close observation resulted in uneventful recovery in all the cases.

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