

Case Report

UNUSUAL GASTRIC FOREIGN BODY OBSTRUCTION IN THREE DOGS

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SUMMARY

Three cases of unusual gastric foreign body obstruction in three dogs are discussed in this paper. The foreign bodies - durian fruit seed (*Durio species*), a pair of stockings and cleaning sponge - were diagnosed using survey radiography and barium contrast radiography. The dogs presented with signs of dullness, anorexia, weight loss and chronic intermittent vomiting. Foreign bodies were removed surgically following gastrotomy.

Keywords: Foreign body, stomach, gastrotomy

INTRODUCTION

Gastro-intestinal foreign bodies are common problems in dogs and the common gastric foreign bodies reported include rocks, toys, bones, coins, spark plugs, knives, food wrapping, clothing, cassette tapes (Rasmussen, 2003) and wood glue (Horstman *et al.*, 2003). The clinical signs observed were occasional vomiting, dullness, anorexia and weight loss. This paper describes clinical features of three cases of unusual gastric foreign body obstruction due to durian fruit seed, a pair of stockings, and cleaning sponges which have not been cited in literature.

CASE HISTORY AND CLINICO-PATHOLOGY FINDINGS

Case 1

An 8-year-old, castrated, English cocker spaniel dog weighing 19.2kg with a history of anorexia, accidental ingestion of seed for duration of 3 days before presentation was referred for further opinion and treatment to the Veterinary Hospital, Universiti Putra Malaysia. The dog was kept indoors and its vaccinations were up to date. On physical examination, the dog was found to be dull, vomiting and inappetance with 5% dehydration status. Further physical examination revealed the dog's temperature, heart rate and respiratory rate to be normal. Haematological and serum biochemical examination revealed no significant changes.

Radiographic findings

A lateral survey radiographic view of the abdomen showed presence of a soft tissue dense object in the gastric lumen surrounded by a thin air column. Although

survey radiography was sufficient to visualise the foreign body, contrast radiography was necessary to confirm the diagnosis. Contrast radiography of the stomach was carried out by using Barium Sulfate. The lateral radiographic view of the gastrogram at 90 minutes postbarium oral administration showed an oval shaped object at the pyloric part. The foreign body was outlined by barium with moderate intraluminal filling defect (Figure 1) suggesting a hard, non-absorbent material.

Case 2

A two year-old, intact female Shih Tzu weighing 5.4 kg with a history of depression, anorexia, vomiting for a duration of 3 days was referred for further opinion and treatment to the Veterinary Hospital, Universiti Putra Malaysia. The dog was kept indoors and the vaccinations were up to date. On physical examination, the dog was found to be dull with 5% dehydration. On further physical examination, the dog's temperature, heart rate and respiratory rate were found to be normal. Haematological and serum biochemical examination revealed no significant changes.

Radiographic findings

A lateral survey radiographic view of the abdomen showed presence of a soft tissue dense object in the gastric lumen surrounded by a thin air column. Although survey radiography was sufficient to visualise the foreign body, contrast radiography was necessary to confirm the diagnosis. Contrast radiography of the stomach was carried out by using Barium Sulfate. The dorsoventral radiographic view of the gastrogram at 90 minutes postbarium oral administration showed an irregular shaped, barium coated object in the body of the stomach (Figure 2), suggesting a soft foreign body of absorbent nature.

Case 3

An 8-year-old castrated Bull mastiff weighing 36.2 kg with a history of depression, anorexia, vomiting and weight loss for a duration of 7 days was referred for further opinion and treatment to the Veterinary Hospital, Universiti Putra Malaysia. The dog was kept indoors and the vaccinations were up to date. On physical examination, the temperature was normal, but showed increased heart rate and respiration rate for the initial three days with 7% dehydration. Haematological and serum biochemical examination revealed reduced chloride level (91.0 mmol/L).

Radiographic findings

A lateral survey radiographic view of the abdomen showed presence of a soft tissue dense object in the gastric lumen surrounded by a thin air column. Although survey radiography was sufficient to visualise the foreign body, contrast radiography was necessary to confirm the diagnosis. Contrast radiography of the stomach was carried out by using Barium Sulfate. The barium study at 90 minutes showed an irregular shaped and well-defined border of a barium coated object at the pyloric part of the stomach (Figure 3), suggestive of a soft foreign body of absorbent nature. A higher density of barium coated foreign body was seen in case 3 than in case 2 indicating the high absorbent quality of the foreign body to contrast media.

SURGICAL PROCEDURE AND POST-OPERATIVE TREATMENT

Case 1

Surgical procedure

The dog received general anesthesia with endotracheal intubation and oxygen administration. The dog was premedicated with intramuscular injection of 0.05mg/kg atropine sulphate (Troy Laboratories, Australia) and 0.5 mg/kg pethidine (Duopharm, Malaysia). General anaesthesia was induced with 2.5% thiopentone sodium (Troy Laboratories, Australia) at 12.5 mg/kg administered intravenously and was maintained by 1.5-2.5% Isoflurane. The animal was positioned on dorsal recumbency and a ventral midline incision extending from xyphoid to 2 cm caudal to umbilicus was made and the stomach was explored after gastrotomy as per standard procedures (Rasmussen, 2003). The foreign body, a durian fruit seed (5cm×2cm), weighing 30 gms was removed from the gastric lumen. Changes like discoloration and degradation of the foreign body were not observed. No significant changes were observed in the gastric mucosa. The gastrotomy incision was closed

in a two layer pattern (simple continuous and cushioning) using 3-0 Vicryl (Johnson & Johnson Intl.). The abdominal muscles were closed in continuous suture pattern and subcutaneous tissue was sutured in modified cushioning suture pattern using 2-0 vicryl. The skin was closed using 2-0 Prolene (Johnson & Johnson Intl.).

Post-operative treatment

Post-operatively, 30 mg/kg amoxicillin (Bemoxy; Upha pharmaceuticals, Malaysia) was administered for 5-7 post-operative days. In addition, a maintenance dose (40 ml/kg) of lactated ringers (B.Braun, Malaysia), diphalyte (Fort Dodge Veterinaria, Spain) in the ratio of 10:1 was administered intravenously for 5 days. Orally, 1 tablet of Papain (Camden industries, Malaysia) twice daily and 2 ml of multivitamin syrup (Uphavit; Upha Pharmaceuticals, Malaysia) once daily was also administered for 5 days from the second post-operative day as supportive therapy. No food was offered for 72 hours post surgery; the animal was fed with semisolid food from 4th post-operative day. The dog had an uneventful recovery by the seventh post-operative day.

Case 2

Surgical procedure

The dog received general anesthesia with endotracheal intubation and oxygen administration. The dog was premedicated with intramuscular injection of 0.05 mg/kg atropine sulphate (Troy Laboratories, Australia) and 0.5 mg/kg pethidine (Duopharm, Malaysia). General anaesthesia was induced with 2.5% thiopentone sodium (Troy Laboratories, Australia) at 12.5 mg/kg administered intravenously and was maintained by 1.5-2.0% Isoflurane. The dog was positioned on dorsal recumbency and a ventral midline incision extending from xyphoid to 2 cm caudal to umbilicus was made and the stomach was explored after gastrotomy as per standard procedures (Rasmussen, 2003). The foreign body, a pair of intact nylon stockings, was removed from the gastric lumen. Changes like discoloration and degradation of the foreign bodies were not observed. No significant changes were observed in the gastric mucosa. The gastrotomy incision was closed in a two layer pattern (simple continuous and cushioning) using 3-0 Vicryl (Johnson & Johnson Intl.). The abdominal muscles were closed in continuous suture pattern and subcutaneous tissue was sutured in modified cushioning suture pattern using 2-0 vicryl. The skin was closed using 2-0 Prolene (Johnson & Johnson Intl.).

Post operative treatment

Post-operatively 12.5 mg/kg amoxicillin-clavulanate (Clavamox; Pfizer Animal Health) was administered for 5-

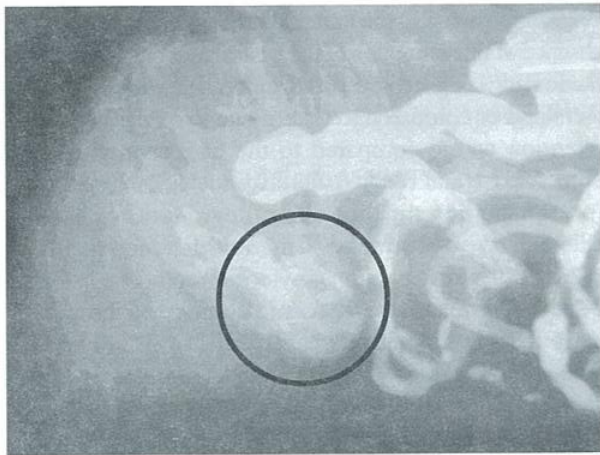


Figure 1: Lateral radiographic view of the abdomen of dog 1 showing foreign body in the stomach (durian seed) outlined by barium sulfate with intraluminal filling defect.



Figure 2: Ventrodorsal radiographic view of the abdomen of dog 2 showing foreign body (stocking) in the stomach coated with barium sulphate and with irregular border



Figure 3: Lateral radiographic view of the abdomen of dog 3 showing foreign body (Cleaning sponge) in the stomach coated with barium sulfate

7 postoperative days. In addition, a maintenance dose (40 ml/kg) of 0.9% sodium chloride (B. Braun Malaysia) was administered intravenously for 5 days. Orally 1 tablet of Papain (Camden industries, Malaysia) twice daily and 2 ml of multivitamin syrup (Uphavit; Upha Pharmaceuticals, Malaysia) once daily was also administered for 5 days from the second post-operative day as a supportive therapy in all the cases. No food was offered for 72 hours postsurgery; the animal was fed with semisolid food from the 4th post-operative day. The dog had an uneventful recovery by the seventh post-operative day.

Case 3

Surgical procedure

The dog received general anesthesia with endotracheal intubation and oxygen administration. The dog was premedicated with 0.5mg /kg pethidine (Duopharm, Malaysia) which was injected intramuscularly. General anaesthesia was induced with 5% thiopentone sodium (Troy Laboratories, Australia) at 12.5 mg/kg administered intravenously and was maintained by 2.5% Isoflurane. The animal was positioned on dorsal

recumbency and a ventral midline incision extending from xyphoid to 2cm caudal to umbilicus was made and the stomach was explored after gastrotomy as per standard procedures (Rasmussen, 2003). The foreign body, a cleaning sponge (8×5× 3 cm), was removed from the gastric lumen. Changes like discoloration and degradation of the foreign body were not observed. Mild inflammation of the gastric mucosa was observed. The gastrotomy incision was closed in a two layer pattern (simple continuous and cushioning) using PDS II (Johnson & Johnson Intl). The abdominal muscles were closed in continuous suture pattern and subcutaneous tissue was sutured in modified cushioning suture pattern using 1-0 vicryl. The skin was closed using 2-0 Prolene (Johnson & Johnson).

Post-operative treatment

Post-operatively, a combination of 15 mg/kg enrofloxacin (Baytril; Bayer animal Health, Korea) and 15 mg/kg metronidazole (S.M.Pharmaceuticals,) was administered for 5-7 post-operative days. In addition, a maintenance dose (40 ml/kg) of lactated ringers (B.Braun, Malaysia), diphalyte (Fort Dodge Veterinaria, Spain) in the ratio of 10:1 was administered intravenously for 5 days. Orally 1 tablet of Papain (Camden industries, Malaysia) twice daily and 2 ml of multivitamin syrup (Uphavit; Upha Pharmaceuticals, Malaysia) once daily was also administered for 5 days from the second post-operative day as a supportive therapy in all the cases. No food was offered for 72 hours post surgery; the animal was fed with semisolid food from the fourth post-operative day. The dog had an uneventful recovery by the seventh post-operative day.

DISCUSSION

Gastric foreign bodies like rocks, toys bones, coins, spark plugs, knives, food wrappings, clothings and cassette tapes (Rasmussen, 2003; Horstman *et al.*, 2003) have been reported but foreign bodies like nylon stockings, cleaning sponge and seed of the durian fruit have not been reported earlier. Vomiting, the most frequently reported symptom in cases of gastric foreign body obstruction (Rasmussen, 2003), was seen with less frequency in the present series of cases except in Case 3.

This may be due to the nature of the foreign body and to absence of inflammation to the gastric mucous membrane. Barium coating on the foreign body in Cases 2 and 3 were denser compared to Case 1 due to its permeate and retention nature compared to the hard, non permeate object (Love and Berry, 2002) like the durian seed. The foreign bodies did not show degradation changes although it was obstructed in the stomach for a period of 3-7days due to the nature of nylon and cellulose in Cases 2 and 3. The reason for the failure to emptying the foreign body from the stomach may be due to its digestible nature and size of the foreign body as reported by Sirois *et al.* (1990) and also due to inadequate contractile waves of phase 3 of the migrating motility complex in dogs as reported by Burrows (1996). Gaseous distention of the stomach was not observed in all the cases as the obstruction was only partial and also due to its frequent movement in the gastric lumen (Rasmussen, 2003). Thus, the unusual foreign body obstruction in Case 1 may be because of the availability of durian seeds in this region.

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