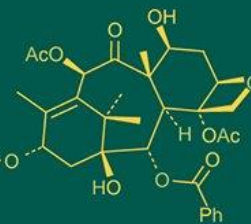
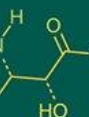
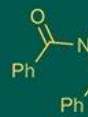


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Successful surgical management of gastric pebble foreign body by gastrotomy in a two-year-old dog: A case report

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Abstract

A Two-year-old intact male Husky dog weighing 22 kg was presented to the Veterinary Clinical Complex, COVAS Udgir, with a history of repeated vomiting, anorexia, lethargy, and abdominal discomfort for two days following accidental ingestion of a pebble. Clinical examination revealed mild dehydration and pain on cranial abdominal palpation. Survey abdominal radiographs demonstrated multiple radiopaque foreign body confined to the stomach. Based on the history, clinical findings, and radiographic examination, a diagnosis of gastric foreign body due to pebble ingestion was established. The dog was stabilized with intravenous fluid therapy and prepared for Gastrotomy under general anaesthesia. A ventral midline celiotomy followed by gastrotomy was performed and a smooth pebble measuring approximately 2.8 cm in diameter was successfully removed from the gastric lumen. The gastrotomy incision was closed routinely in two layers using absorbable suture material. Postoperative management included intravenous fluids, antibiotics, analgesics, antiemetics, gastric protectants, and gradual reintroduction of oral feeding. The dog showed an uneventful recovery with complete resolution of clinical signs and satisfactory wound healing. Skin sutures were removed on the 12th postoperative day, and no postoperative complications or recurrence of gastrointestinal signs were observed during follow-up. This case highlights the importance of early diagnosis using radiography and timely surgical intervention for successful management of gastric foreign bodies in dogs. Gastrotomy remains a safe and effective treatment option when large or multiple gastric foreign bodies cannot be removed conservatively or by endoscopy.

Keywords: Dog, gastric foreign body, gastrotomy, pebble ingestion

Introduction

Foreign body ingestion represents one of the most frequent gastrointestinal emergencies in canine patients. Young dogs are particularly predisposed because of their inquisitive nature and tendency to ingest indigestible objects. Stones, pebbles, balls, toys, bones, cloth, and metallic objects are among the most commonly reported gastric foreign bodies. Clinical manifestations vary depending on the size, location, and duration of obstruction and include vomiting, anorexia, dehydration, abdominal pain, depression, and electrolyte disturbances. Delayed intervention may result in gastric ulceration, perforation, peritonitis, or gastric outlet obstruction. Survey radiography usually provides rapid diagnosis for radiopaque objects such as stones and pebbles. Surgical gastrotomy remains the gold standard when endoscopic removal is not feasible or when multiple or large foreign bodies are present

Materials and Methods

Case Description

A Two-year-old intact male Husky dog weighing 22 kg was presented to the Department of Veterinary Surgery and Radiology, COVAS Udgir, with a history of persistent vomiting, anorexia, lethargy, and abdominal discomfort for two days following accidental ingestion of pebbles while playing outdoors. The owner reported observing the dog swallowing pebble. A complete clinical examination was performed, including assessment of rectal temperature, heart rate, respiratory rate, capillary refill time, mucous membrane colour, hydration status, and abdominal palpation.

Physical examination

- Temperature: 102.3°F
- Heart rate: 118 beats/min
- Respiratory rate: 34 breaths/min
- Capillary refill time: 2 seconds
- Mild dehydration (6%)
- Pain on cranial abdominal palpation

Diagnostic Evaluation

Blood samples were collected from the cephalic vein for complete blood count and serum biochemical analysis to evaluate the general health status and identify any metabolic abnormalities before anaesthesia. Survey abdominal radiographs (right lateral and ventrodorsal projections) were obtained using a digital radiography unit. A single radiopaque foreign body confined to the stomach confirmed the diagnosis of a gastric pebble foreign body.

Preoperative Preparation

The dog was stabilized with intravenous Lactated Ringer's solution (10 mL/kg/h) to correct dehydration and electrolyte imbalance. A broad-spectrum antibiotic (ceftriaxone, 25 mg/kg IV) was administered 30 minutes before skin incision. The ventral abdomen extending from the xiphoid cartilage to the pubis was clipped, shaved, and aseptically prepared using chlorhexidine scrub followed by 70% isopropyl alcohol and povidone-iodine solution.

Anaesthetic Protocol

Premedication consisted of atropine sulphate (0.04 mg/kg SC) followed by butorphanol (0.2 mg/kg IV) and diazepam (0.25 mg/kg IV). General anaesthesia was induced with propofol (4 mg/kg IV to effect) and maintained with isoflurane vaporized in 100% oxygen delivered through a cuffed endotracheal tube using a circle breathing system. Throughout the procedure, heart rate, respiratory rate, oxygen saturation, end-tidal carbon dioxide, blood pressure, and body temperature were continuously monitored.

Surgical Procedure

The dog was positioned in dorsal recumbency, and a routine ventral midline celiotomy was performed extending from the xiphoid process to the cranial umbilical region. The stomach was exteriorized and isolated from the abdominal cavity using sterile, moistened laparotomy sponges to minimize contamination. Stay sutures were placed on the gastric wall, and a 4-cm longitudinal gastrotomy incision was made on the ventral aspect of the gastric body in a relatively avascular area midway between the greater and lesser curvatures.

A Pebble measuring approximately 2.8 cm in diameter was carefully removed using sponge-holding forceps. The gastric lumen was digitally explored to ensure complete removal of foreign material and subsequently irrigated with warm sterile normal saline. The gastrotomy incision was closed in two layers using 2-0 polydioxanone (PDS): Inverted Cushing followed by a second inverted Lambert pattern involving the seromuscular layer.

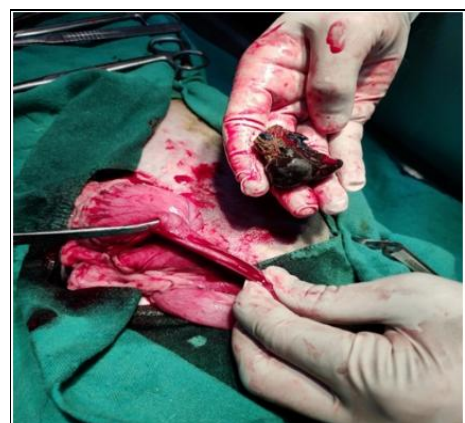
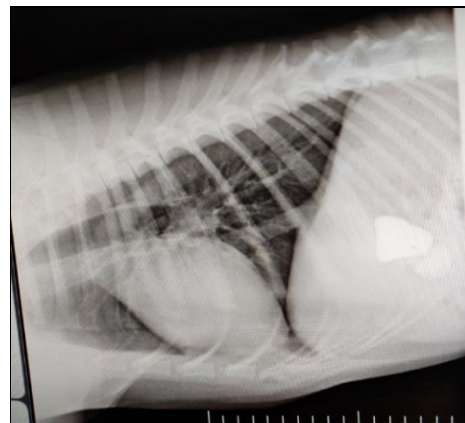
The abdominal cavity was lavaged with warm sterile saline before routine abdominal closure. The linea alba was closed with simple continuous sutures using PDS, the subcutaneous tissue with 1-0 polyglactin 910 in a simple continuous pattern, and the skin with interrupted nylon sutures.

Postoperative Management

Postoperatively, intravenous fluids were continued for 24 hours. Ceftriaxone (25 mg/kg IV every 12 hours) was administered for five days, meloxicam (0.2 mg/kg SC followed by 0.1 mg/kg orally once daily for three days) was used for analgesia, pantoprazole (1 mg/kg IV once daily) was given for gastric protection, and maropitant (1 mg/kg SC once daily) was administered for three days to control postoperative nausea. Food and water were withheld for the first 24 hours, after which small quantities of water followed by a soft, highly digestible diet were gradually introduced. The surgical site was inspected daily, and skin sutures were removed on postoperative day 12 following complete wound healing.

Discussion

Foreign body ingestion is one of the most common causes of gastrointestinal obstruction requiring surgical intervention in dogs. Pebbles generally remain within the stomach because they cannot pass through the pyloric sphincter. Radiography remains an excellent diagnostic modality owing to the high radiopacity of mineralized foreign bodies. Endoscopic retrieval is considered the least invasive treatment; however, large, multiple, or heavy stones frequently necessitate gastrotomy. Appropriate surgical isolation, atraumatic tissue handling, and meticulous two-layer closure significantly reduce postoperative leakage and dehiscence. Early diagnosis and intervention are associated with excellent prognosis, whereas delayed treatment increases the risk of gastric necrosis, perforation, and septic peritonitis. The present case demonstrated complete recovery following prompt surgical management, consistent with previously published reports of canine gastric foreign body removal.





10. Nelson RW, Couto CG. Small Animal Internal Medicine. 6th ed. St. Louis: Elsevier; 2020.

Conclusion

Gastrotomy remains a reliable and highly successful surgical procedure for removing gastric foreign bodies in dogs. Thorough preoperative assessment, accurate radiographic diagnosis, proper anesthetic management, careful surgical technique, and diligent postoperative care contribute to an excellent clinical outcome. Early intervention minimizes complications and ensures rapid recovery.

Clinical Significance

- Pebble ingestion should always be considered in dogs presenting with persistent vomiting and a history of pica.
- Survey radiography provides rapid diagnosis of mineralized gastric foreign bodies.
- Gastrotomy is indicated when endoscopic retrieval is unavailable or unsuccessful.
- Proper postoperative care results in an excellent prognosis.

References

1. Fossum TW. Small Animal Surgery. 5th ed. St. Louis: Elsevier; 2019.
2. Johnston SA, Tobias KM. Veterinary Surgery: Small Animal. 2nd ed. St. Louis: Elsevier; 2018.
3. Papazoglou LG, Patsikas MN, Rallis TS. Gastrointestinal foreign bodies in dogs and cats. Compendium on Continuing Education for the Practicing Veterinarian. 2003;25(11):830-844.
4. Hayes G. Gastrointestinal foreign bodies in dogs and cats: a retrospective study of 208 cases. Journal of Small Animal Practice. 2009;50(11):576-583.
5. Barash NR, Weisse C, Berent AC, *et al.* Outcomes and complications associated with esophageal and gastric foreign bodies in dogs. Journal of Veterinary Internal Medicine. 2022;36(2):530-539.
6. Tobias KM, Johnston SA. Gastrointestinal surgery. In: Johnston SA, Tobias KM, editors. Veterinary Surgery: Small Animal. 2nd ed. St. Louis: Elsevier; 2018. p. 1482-1520.
7. Birchard SJ, Sherding RG. Saunders Manual of Small Animal Practice. 4th ed. St. Louis: Elsevier Saunders; 2015.
8. Slatter D. Textbook of Small Animal Surgery. 3rd ed. Philadelphia: Saunders; 2003.
9. Monnet E. Gastrointestinal surgery. In: Monnet E, editor. Small Animal Soft Tissue Surgery. Ames: Wiley-Blackwell; 2013. p. 247-310.