



International Journal of Veterinary Sciences and Animal Husbandry



ISSN: 2456-2912

VET 2024; SP-9(4): 198-200

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www.veterinarypaper.com

Received: 12-04-2024

Accepted: 19-05-2024

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Successful surgical management of intestinal foreign body in a golden retriever dog

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DOI: <https://doi.org/10.22271/veterinary.2024.v9.i4Sd.1627>

Abstract

Dogs have a tendency to ingest various non-edible objects due to their indiscriminate feeding habits. A golden retriever dog was presented with a history of anorexia, frequent vomiting, dilated abdomen for last 7 days. Physical examination revealed a palpable hard mass in the abdomen. Palpation and ultrasonography, confirmed the presence of an intestinal foreign body. The foreign body was successfully removed via enterotomy. The enterotomy incision was closed in a single layer interrupted suture pattern followed by a lambert suture pattern. Postoperatively, the dog was treated with fluid therapy, antibiotics, analgesics, prokinetics and a restricted diet. The animal received standard supportive care and had an uneventful recovery.

Keywords: Intestinal obstruction, foreign bodies, ultrasonography, enterotomy, golden Retriever

Introduction

Intestinal obstruction is a common condition in dogs and cats, often caused by the ingestion of foreign bodies. Intestinal foreign bodies can lead to partial or complete obstruction depending on their size (Papazoglou *et al.*, 2003) ^[1]. Dogs, particularly those with large esophagi, can safely ingest objects much larger than what can be safely passed through their intestines, commonly consuming stones, plastic, and rubber as foreign bodies. Gastrointestinal foreign bodies may cause complete or partial obstruction, with complete obstruction typically associated with more dramatic clinical signs and rapid deterioration, while partial obstruction may present with more chronic signs of maldigestion and malabsorption (Papazoglou *et al.*, 2003) ^[1]. Clinical signs such as anorexia, vomiting, diarrhea, abdominal discomfort, and lethargy are commonly associated with gastrointestinal foreign bodies, although they are non-specific (Hayes, 2009) ^[3]. Foreign body obstruction can be classified based on the degree of obstruction (complete or partial), location along the intestinal tract (proximal, middle, distal, or colonic), and pathophysiologic alterations (simple, mechanical, or strangulating) (Papazoglou *et al.*, 2003) ^[1]. In complete simple intestinal obstruction, accumulation of gas and fluid contributes to luminal distention proximal to the obstruction. Partial intestinal obstruction is associated with maldigestion and malabsorption of nutrients, leading to stagnant loop syndrome (Papazoglou *et al.*, 2003) ^[1]. The majority of obstructive non-linear intestinal foreign bodies compromise the blood supply to the intestinal segment by luminal distention, leading to intestinal wall edema, progressive necrosis, ileus, and an increase in pathogenic intraluminal bacteria. These factors contribute to the breakdown of the mucosal barrier and systemic endotoxemia (Ellison, 1993) ^[4].

This paper presents a case of intestinal obstruction in a golden retriever dog caused by a foreign body consisting of a piece of cloth, and its successful surgical management. The study aims to provide an overview of the diagnostic protocol and surgical management of intestinal foreign body obstruction in canine patients.

Case History and Observation

A 8.5 year old golden retriever dog was presented at Teaching Veterinary Clinical Complex, Nagpur with symptoms suggestive of intestinal obstruction. It exhibited anorexia, vomiting, and reduced defecation, appearing dull, emaciated, and weak on examination, with normal

physiological parameters. Clinical palpation revealed hard mass on palpation. Ultrasonography with the Sonosite M-Turbo machine revealed a distended intestinal loops cranial to the hyperechoic shadowing area indicating intestinal obstruction. Biochemical parameters were normal and Hematology indicated increased WBC's, Neutrophil's and decreases Lymphocyte count and Red blood Cell Distribution.

Treatment and Discussion

The surgical site was shaved and prepared aseptically, and pre-operative fluid therapy with cold normal saline intravenously was initiated. The dog was pre-anaesthsized with atropine @ 0.045 mg/kg body weight, intamox @ 500 mg body weight intravenously, Ranitidine @ 2mg/kg body weight, Butorphenol @ 0.02 mg/kg body weight, Vetalgine @ 1 ml & Perinorm @ 0.1 mg/kg body weight. The anesthesia was induced with xylazine hydrochloride @ 1 mg/kg body weight. Maintenance of anesthesia was done using Ketamine @ 6 mg/kg body weight, Diazepam @ 0.5mg/kg body weight & Isoflurane @ 1.5mg/kg body weight. The dog was positioned in dorsal recumbency. The intestinal loops were explored for the foreign body. Obstruction was identified and the incision was given at caudal end to relieve the foreign body that was completely obstructing the intestine. The foreign body was retrieved using forceps. The intestine was washed with normal saline and metronidazole to remove the contaminants and was sutured using Catgut 2-0 in Lambert pattern and the muscles were sutured with Vicryl-0 in simple interrupted pattern. The skin was sutured using Prolene -0 in horizontal mattress pattern. Post-operatively, the animal was treated using intravenous fluids (DNS & RL), and the owner was advised to give liquid diets for a period of 3-5

days. Antibiotic therapy was initiated using Monocef @ 20 mg/kg body weight intravenously, Metronidazole 60 ml, Butorphenol @ 0.02 mg/kg body weight intravenously, Perinorm @ 0.1 mg/kg, Vitamin C @ 30 mg/kg body weight along with Pantoprazole @ 1 mg/kg body weight. The suture site was dressed using povidone-iodine ointment.

Foreign bodies lodged in the gastrointestinal tract can cause ulceration, hemorrhage, anorexia, dehydration, perforation, peritonitis, and can result in death if not treated in time (Anoop *et al.*, 2010) [5]. Intestinal obstruction should be considered a surgical emergency, as delayed management can result in necrosis and irreparable damage to the intestine (Das *et al.*, 2015) [6]. The jejunum is the most common site for foreign body obstruction in small animals, and enterotomy is found to be the most effective treatment (Capak *et al.*, 2001) [7]. Dogs commonly ingest materials like stones, plastic, and rubber objects, and treatment is more successful in dogs below two years of age (Capak *et al.*, 2001) [7]. Complications like intra- operative spillage, wound dehiscence, or perforations in the lower small intestine or colon can lead to higher mortality rates (Ellison *et al.*, 2011) [4]. Puppies and kittens are most susceptible to foreign body obstruction due to indiscriminate feeding habits, and the condition may also occur in adults (Kavirajan *et al.*) [6]. Balls and other smooth, round foreign bodies have the potential to completely clog the intestine and result in pressure necrosis of the intestinal wall, while sharp foreign bodies can pierce the intestinal wall and result in adynamic ileus and septic peritonitis (Papazoglou *et al.*, 2003) [1]. Diagnostic imaging modalities, such as contrast radiography, are important to rule out intestinal obstruction from other conditions (Papazoglou *et al.*, 2003) [1].



Fig 1: Identifying the location of Foreign Body Obstruction



Fig 2: Enterotomy Incision



Fig 3: Retrieval of Foreign Body - Sock

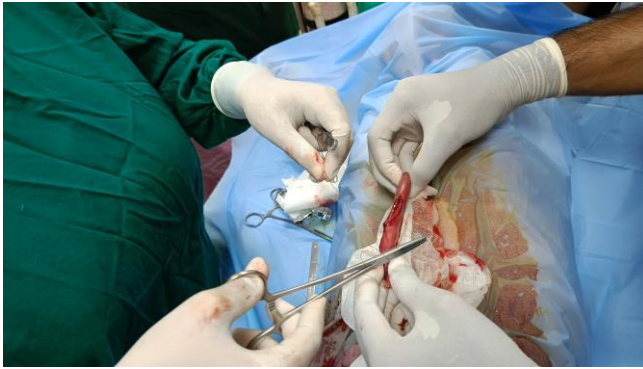


Fig 4: Enterotomy Closure

How to Cite This Article

Pardeshi O. Successful surgical management of intestinal foreign body in a golden retriever dog. International Journal of Veterinary Sciences and Animal Husbandry. 2024;SP-9(4):198-200.

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Conclusion

The present paper reports the successful surgical management of gastrointestinal obstruction in a dog. The best way to prevent dogs from ingesting foreign bodies is to keep dangerous objects away from them and allow them to chew only toys that cannot be destroyed or swallowed. Timely diagnosis based on history, clinical symptoms, and diagnostic findings confirms intestinal obstruction, which requires immediate surgical management to achieve favorable outcomes (Kamalakar *et al.*, 2018; Mahesh *et al.*, 2019)^[10, 11].

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