

Removal of Thoracic Esophageal Foreign Body Obstruction through Gastrotomy

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Abstract

A female dog was presented with history of dysphagia, inappetence, retching and salivation with suspicion of ingestion of piece of bone. In lateral plain thoracic radiography, presence of an irregular shaped radio opaque foreign body was detected in thoracic part of esophagus. Surgical intervention through gastrotomy was planned to retrieve the foreign body. This article briefs about surgical management of thoracic esophageal foreign body obstruction by means of gastrotomy.

Keywords: Dog; foreign body; gastrotomy; thoracic esophagus

Introduction

Foreign bodies are inanimate objects that may obstruct the esophageal lumen to varying degrees. Foreign bodies are most commonly found at the thoracic inlet at the base of the heart (10 percent), or in the epiphrenic area (85 percent), because extra-esophageal structure limits esophageal dilatation at these sites (Fossum, 2013). Dog will readily eat toys, bones and any object that either contain food or retains the odour of food. Frequently encountered esophageal foreign bodies are bone fragments and it is easy to retrieve thoracic esophageal obstruction through gastrotomy incision using long forceps (Hun Young *et al.*, 2009).

History and Observations

A ten year old female pomeranian dog with body weight of 13.6kg was presented with history of inappetence, attempt for vomiting, salivation and dysphagia after having a chicken diet. On physical examination rectal temperature was normal with slight difficulty in breathing and tachycardia was observed subsequently. No evidence of foreign body found on oral cavity examination. So further pet was subjected to radiological examination. Lateral plain radiograph of thorax (Fig.1) revealed irregular

shaped radio opaque foreign body lodging in thoracic esophagus. Based on clinical and radiographic findings, present case was diagnosed as thoracic esophageal foreign body obstruction. Surgical correction was planned to remove foreign body from thoracic esophagus through gastrotomy.

Treatment

Animal was premedicated with Atropine sulphate at 0.04 mg/kg b.wt. intramuscularly and Xylazine hydrochloride (Xylaxin^a) at 1 mg/kg b.wt. intramuscularly. Ceftriaxone at 25 mg/kg b.wt. and Meloxicam (Melonex^b) 0.2 mg/kg b.wt. were given subcutaneously. Thiopental sodium (Thiosol^c) was given at 12.5 mg/kg b.wt. intravenously and anesthesia was maintained. The surgical site was aseptically prepared. The dog was placed on its dorsal recumbency. Laparotomy was performed through cranial mid-ventral incision one inch below the xiphoid cartilage. Stomach was exteriorized and incision was made at hypovascular ventral aspect of the stomach between greater and lesser curvatures. Long forceps was introduced gently through incision, to dislodge foreign body from the esophagus and to remove it through incision site (Fig. 2). Gastrotomy wound incision was closed by pushing suture pattern followed by lembert suture pattern using chromic catgut no. 2-0. Stomach was washed with normal saline and was positioned back in abdominal cavity. Muscle layers along with peritoneum were closed with polyglactin 910 no.1 using simple interrupted suture pattern. Skin incision was closed using polyamide black no.1 by

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Fig.1: Lateral plain radiograph showing thoracic esophageal obstruction

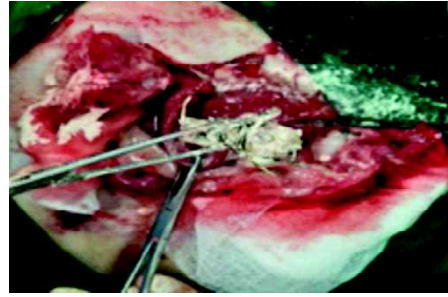


Fig. 2. Retrieval of bone piece using long forceps through gastrotomy incision



Fig. 3. Appearance of foreign body (bone piece) removed from esophagus

interrupted horizontal mattress pattern. Post-operatively, animal was maintained with intravenous Dextrose normal saline, Ringers lactate and Metronidazole at 20 mg/kg b.wt. for first 3 days twice daily. Subsequently shifted to liquid and semisolid diet. Ceftriaxone at 25 mg/kg b.wt. orally for 7 consecutive days and Meloxicam at 0.2 mg/kg b.wt. for 3 consecutive days along with wound dressing on alternate day was advised. Animal recovered without any complications on 10th post-operative day.

Results and Discussion

Canines are quite curious and playful with habit of eating non-food items leading to esophageal foreign body obstruction. The frequently encountered esophageal foreign bodies are bones and bone fragments in dogs. Moreover, fishhooks, rawhide, wooden sticks, balls, chew treats toys, pieces of plastic or metal and other varied objects have been also reported (Speilman *et al.*, 1992; Luthi, 1998; Moore, 2001; Sale and Williams, 2006; Rousseau *et al.*, 2007; Thompson *et al.*, 2012). It has been indicated that clinical symptoms such as regurgitation, gagging and retching following feeding

are important observations associated with pharyngeal occlusion, esophagitis, esophageal foreign objects, neoplasia, vascular ring anomaly, perioesophageal masses, granulomas, megaesophagus, esophageal diverticulum and hiatal diseases (Willard and Weyrauch, 1999).

Esophageal foreign bodies require immediate attention as they cause cessation of peristaltic movements, regurgitation of food, esophagitis, esophageal distension and in severe cases, pressure necrosis and also may end up in perforations. Most commonly noticed location is caudal esophagus between the base of heart and diaphragm (Moore, 2001; Sale & Williams, 2006; Leib & Sartor, 2008; Thompson *et al.*, 2012).

Endoscopic removal of foreign body was not always successful (Allman and Pastori, 2013). It has been postulated that application of transthoracic esophagotomy has some complications such as pyothorax, mediastinitis, pleural effusion (Sale and Williams, 2006), hydrothorax, pleuritis and continued non-healing wound or gall duct (Speilman *et al.*, 1992; Kyles, 2003). Trans-diaphragmatic gastrotomy approach required an intercostal thoracotomy, which is more invasive and painful, and also possible risk of gastric contents spillage into the thoracic cavity was greater than midline celiotomy gastrotomy (Delligianni *et al.*, 2020). In such cases, going for the thoracic approach may pose some risks when airtight closure of thoracic cavity is not appropriately performed and it also requires specialized equipments like intermittent positive pressure ventilator.

In conclusion, gastrotomy can be used as a successful technique in relieving the distal thoracic

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esophageal ailment and avoiding possible complications of thoracic approaches.

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IVRI celebrated International Women's Day

International Women's day is celebrated on 8th March every year to commemorate the unparalleled contributions of women in every sphere of life like arts, culture, medicine, army, education, agriculture and veterinary etc. The Indian Veterinary Research Institute (IVRI) celebrated the day with this year's theme - "Gender equality today for a sustainable tomorrow" in recognition and celebration of the women and girls and to honor their leadership and contributions towards a sustainable future.

Dr. Triveni Dutt, Director and Vice-Chancellor, ICAR-IVRI, Izatnagar underlined the levels of efficiency women can exhibit if given opportunities. The Institute organized a wide array of different activities on the occasion. More than 200 Staff Members and Students of the Institute participated in the event.



Lady Vets recognised during the occasion