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Esophageal Foreign Body (BONE) in a Shitzu- endoscopic retrieval

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Abstract

Endoscopy is a minimally invasive procedure that allows for the visual examination of internal organs, cavities, and joints in high-definition color, providing enhanced visualization. In companion animals, endoscopy is a commonly performed procedure to non-invasively remove foreign objects lodged in the upper gastrointestinal tract. A 10 months old, Female Shitzu dog was presented to small animal medicine OP, VCC, CVSc, Rajendranagar, with history of excess salivation, dyspepsia, retching and vomiting for a period of 10 days. The detailed history revealed that the pup has consumed mutton bone 12 days back and then the symptoms were noticed. Thoracic radiography confirmed the presence of radioopaque structure in the thoracic esophagus. Endoscopic evaluation revealed bony piece in the lumen of caudal esophagus and was successfully retrieved by the rigid laproscopic forceps under the guidance of fibre optic endoscope. A laborious 1 hour procedure recovered bone piece there by avoiding the surgery. Post-procedure, it was treated with antibiotics and supportive therapy. The pup showed a uneventful recovery with normal eating the following day. The follow-up examination a week later confirmed the animal had fully recovered.

Keywords: Esophageal foreign body, bone piece, dog, endoscopy

Introduction

Prompt attention is crucial when pets ingest foreign objects, as it can be a matter of life and death. Common culprits include magnets, latex, chicken bones, sewing needles, wooden items like skewers or ice pop sticks, corn cobs, pet toys, children's toys, solidified wood glue and fish bones (Tams, 2003) [6]. Linear objects like carpet, clothing, plastic, towels, cloth, thread, and string can also be harmful. The nature of the ingested object significantly affects the symptoms and treatment approach, with discrete objects potentially removable via endoscopy and linear objects requiring surgical intervention if they've caused symptoms (Pratt *et al.* 2014; Cornell and koeing, 2015) [3, 1]. Endoscopy has become an important breakthrough just as radiology or ultrasonography has been for veterinary specialist. Endoscopy is a non-invasive procedure that is performed in companion animals to remove any foreign body struck in upper gastrointestinal tract. This procedure is advantageous over surgical correction because it is time effective and has a lesser risk to animals. Foreign body (FB) is an emergency. Dogs and cats with acute signs of choking, retching, cough, vomiting, regurgitation, hypersalivation, dysphagia and odynophagia should have the presence of a gastrointestinal foreign body as part of their differential diagnosis, where it is a frequent condition in the care of small animals. Most foreign bodies lodged in the esophagus, stomach and proximal duodenum can be removed by upper digestive endoscopy, a curative, little invasive procedure.

Materials and Methods

A 10 months old female Shitzu dog weighing 6.3kg was presented with the complaint of vomiting, unable to drink adequate water, inappetance and weakness since 10 days. The owner reported that the dog ate food with mutton bone accidentally 2 days prior to the onset of symptoms. Clinical examination revealed retching and mild dyspnea. Following thorough physical examination, the dog was subjected to x-ray which showed a radioopaque substance mimicking vertebrae in the thoracic esophagus and near the cardia of stomach (Fig.1).

Endoscopy was performed using flexible video endoscope to retrieve the foreign body.

Treatment and Discussion

After thorough vital examination, immediate endoscopy was planned to retrieve the bone from the oesophagus. The animal was anesthetised prior the procedure using a combination of xylaine @ 1 mg/kg bwt and ketamine 10 mg/kg bwt and maintained using propofol @ 4 mg/kg B.wt. For the procedure fiberoptic video gastroscope was used and for the removal of foreign body, endoscope grasping forceps has been used. After careful inspection of oesophageal lumen down to the cardiac ostium a bone which was stuck in the esophageal walls was detected. Since the bone was big and stuck deep into the wall of oesophagus, several attempts to retrieval with grasping forceps were futile. A laproscopic forceps was passed in parallel to the endoscopic probe in order to retrieve the foreign body from the oesophageal wall. It was a herculean task and took 1 hour to retrieve the deeply stuck foreign body without injuring the esophageal lumen (Fig.2).

Young, small breed dogs are overrepresented for esophageal foreign bodies due to their smaller esophagus. Breeds prone to swallowing non food items are at higher risk due to their eating habits which includes terriers, Shih Tzus, and Chihuahuas. These are the most commonly reported for breeds for esophageal foreign body obstruction. The most commonly reported location is the caudal esophagus between the heart base and diaphragm and common sites include just caudal to the pharynx, the thoracic inlet, and the heart base.

The initial diagnostic workup for dogs with suspected EFB typically begins with radiographs. Radiography is more useful in evaluation of esophageal foreign bodies in dogs and cats when compared to physical methods of examination (Sitaria *et al.*, 2020 and Tyrrell, 2006) [5, 8]. Visualization on the FB is more apparent for objects with high density, like bones and metals, but less apparent for objects with low density. EFBs can lead to a range of complications, including esophageal inflammation, tears in esophageal lining, pneumonia from aspiration, and esophageal strictures. The endoscopic approach is favored for its minimal invasiveness, high success rate, and shorter procedure time, making it a more appealing option than surgery. While endoscopic removal is generally straightforward, potential complications can include esophageal perforation, bleeding, respiratory distress, and esophageal narrowing or stricture formation. To ensure successful retrieval, the endoscopist should strive to approach the foreign object perpendicularly, enabling ideal alignment and secure capture with a removal device. Precise manipulation of the scope is achieved by combining gentle torque and rotation of the insertion tube with subtle movements of the directional controls, allowing for accurate placement of the retrieval device around the foreign object. Careful manipulation of the scope is crucial, achieved by combining gentle twisting and rotation of the insertion tube with precise movements of the directional controls. This allows for successful placement of the retrieval device around the object. It's essential to maintain a safe distance between the endoscope and the foreign object, ensuring clear visibility of the retrieval device on the screen throughout the procedure."

Post procedure of endoscopy the dog was administered with amoxycillin @ 12.5 mg/kg B.wt, pantoprazole @ 1 mg/kg B.wt, ondansetron @ 0.5 mg/kg B.wt; meloxicam @ 0.2 mg/kg B.wt and hemocoagulase @ 0.5 ml to avoid complications such as esophagitis and stenosis. Endoscopy is a valuable instrument to peer view into the interiors of the body. A basic knowledge and appearance of various luminal surfaces and the underlying anatomy is required. The use of endoscopy requires proficiency in anesthetic techniques, patient preparation, and in-depth knowledge of luminal affections in canines. Endoscopic surgery results in less surgical morbidity, less postoperative pain and faster recovery. However, Endoscopic examination fails in the investigation of motility disorders and should be preceded by adequate blood works, laboratory testing and radiology. Endoscopic removal is favored for its low invasiveness, high success rate, and shorter procedure time compared to surgery (Preena P *et al.*, 2016) [4]. Endoscopic removal can occasionally lead to complications such as perforation, hemorrhage, respiratory issues from esophageal perforation, and esophageal stenosis (Thompson *et al.*, 2012) [7].



Fig 1: Lateral X-ray of the dog showing radiopaque structure (arrow) in the caudal portion of esophagus (A), absence of the same after retrieval (B).



Fig 2: Endoscopic retrieval procedure; A. holding the bone with forceps, also note that the lateral process of the vertebra is struck in the esophageal mucosa; B. retrieval of the bone, and C. Bone size (1.9 cm).

Conclusion

A 10-month-old female Shitzu dog was brought to the clinic with persistent vomiting and was diagnosed with a foreign body obstruction in the esophagus. The condition was successfully managed through endoscopic intervention.

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