Gastrotomy Approach Retrieval of Esophageal Foreign Body using Long Forceps Technique in Five Dogs

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(Accepted: October 07, 2009)

Abstract: Five dogs presented to the Veterinary Medical Teaching Hospital of the Konkuk University and Hangang Animal Hospital with a history of foreign body ingestion. On physical examination, five dogs showed lethargy, anorexia, or vomiting. Plain radiographs revealed that radiopaque foreign bodies lodged in the heart base or caudal thoracic esophagus. Positive contrast esophagogram revealed that large foreign bodies severely expanded the esophagus and there was no evidence of leakage of the contrast agent from the esophagus into the thoracic cavity. Gastrotomy for retrieval of esophageal foreign bodies using long forceps technique was performed. Esophageal foreign bodies were successfully retrieved in all dogs. The follow-ups were completed 10 days to 2 years after surgery. The follow-up information was based on physical examination by veterinarians and telephone interview with owners. The owners reported that there was no evidence of complications related to surgery such as vomiting, regurgitation, dysphagia, gagging, hyper-salivation, or anorexia in all dogs.

Key words: esophageal foreign body, gastrotomy, long forceps technique, dog.

Introduction

Esophageal foreign bodies are a common clinical problem in dogs and cats and can become life threatening (11). The most common foreign bodies in dogs are ingested bones or bone and cartilage composites (4,8,10). In cats, fishhooks, needles, and string foreign bodies are more common (6,7). Small breeds of dogs are often affected (8). Clinical signs associated with esophageal foreign bodies include lethargy, anorexia, hypersalivation, regurgitation or vomiting, retching, restlessness, and distress (1,3). Diagnosis is usually made via survey thoracic radiography. Various methods have been performed to treat dogs and cats with esophageal foreign bodies. Gastrotomy approach through a midline laparotomy to esophageal foreign bodies in which long forceps is used to remove foreign bodies has been described in a commonly referenced textbook (6), but there is little published information on the use of long forceps retrieval with gastrotomy approach. The purpose of this case series is to describe the successful long forceps retrieval of esophageal foreign bodies with gastrotomy approach in five dogs.

Cases

A 4-year-old sexually intact female Maltese weighing 3.4 kg presented to The Hangang Animal Hospital with a history of progressive anorexia. The owner described the dog ingested large bone and cartilage composites the day before presentation. On physical examination, the dog had lethargy, anorexia, and vomiting. Plain radiographs revealed that a radiopaque foreign body lodged in the caudal thoracic esophagus, between the heart and diaphragm (Fig 1A). Positive contrast esophagogram revealed that a large foreign body severely expanded the esophagus and there was no evidence of leakage of the contrast agent from the esophagus into the thoracic cavity (Fig 1B). A diagnosis of esophageal foreign body was made. Surgical removal of the foreign body was performed on the day of admission.

The dog was premedicated for surgery with atropine sulfate (0.02 mg/kg SC; Atropine sulfate inj, Je II Pharm. Co., Ltd, Korea) and diazepam (0.1 mg/kg IV; Melode, Dong Wha Pharm. Ind. Co., Ltd, Korea), followed by anesthetic induction with propofol (6 mg/kg IV; Provine 1%, Myungmoon Pharm. Co., Ltd, Korea). The dog was intubated and anesthesia was maintained with isoflurane (Isoflurane; Choongwae Co., Ltd, Korea) and oxygen. Lactated Ringer’s solution was administered intravenously at a rate of 5 mL/kg/h until completion of the surgical procedure. The dog received cephradine (30 mg/kg IV; Salfilin, Daehan Newpharm. Co., Ltd, Korea) at the time of anesthetic induction.

The patient was positioned in dorsal recumbence. A ventral midline incision was made from the xiphoid process to 3 cm caudal to the umbilicus. The falciform ligament was removed from the xiphoid process. Two stay sutures were placed at 2 cm from both ends of proposed incision. Additional two
stay sutures were placed on each side of intended incision. The stomach was isolated from remaining abdominal contents with moistened 4 × 4 gauze. Incision was made parallel to the long axis of the stomach. Gastric contents were aspirated using suction. Then foreign body was palpated through the esophageal hiatus blindly. There was no evidence of adhesion of the foreign body to surrounding tissues. A foreign body forceps was introduced through the esophageal hiatus until the end of forceps palpated the foreign body. Then the jaw of the foreign body forceps was gently opened to expand the caudal esophagus. The foreign body forceps was introduced more cranially and then gently grasped the foreign body. The foreign body grasped with the foreign body forceps was withdrawn from the caudal esophagus. The size of foreign body was 5 cm in length, 5 cm in width, and 1 cm in height (Fig 2B). The stomach was closed in two layers. The first layer was a simple continuous pattern using 3-0 polyglycolic acid (Dexon II®; Covidien Animal Health and Dental Division, USA). The second layer was a Cushing pattern using 3-0 polyglycolic acid. The linea alba was closed using 3-0 polyglycolic acid in a simple continuous pattern. The subcutaneous tissues and skin were closed using 4-0 polyglycolic acid and 3-0 nylon (Nylon®; Namhae Co., Ltd, Korea) respectively. Postoperatively the dog was placed on meloxicam (0.1 mg/kg PO; Metacam®, Boehringer-Ingelheim Vetmedica, Inc, USA) for pain and received cefazolin (30 mg/kg IV; Saffin®; Daesan Newpharm Co., Ltd, Korea) for 3 days. Food was offered 12 hours postoperatively since there was no vomiting. The follow-up was completed by telephone 3 months after surgery. The owner was asked if there was vomiting or anorexia related to surgery. The owner reported that there was no evidence of complications related to surgery.

During the period from 2003 to 2008, gastrotomy approach retrieval of the esophageal foreign body using long forceps technique was performed at the Veterinary Medical Teaching Hospital of The Konkuk University and Hangang Animal Hospital in a total of five dogs including the case detailed in this report. Signalment, location of foreign body, type of foreign body, clinical signs, whether an adequate approach of foreign body was obtained, and adhesion to surrounding tissues are summarized in the Table 1. Foreign bodies ranged in size from 3 × 1 × 1 cm to 5 × 5 × 1 cm in length, width, and