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Esophageal Foreign Body in a Dog: Clinic, Radiographic and Endoscopic Findings and Surgical Treatment

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A B S T R A C T

Background/Aim: Esophageal foreign bodies are common in dogs and not easily dislodged when they become impacted in the esophagus. Pulling or pushing a bone can result in esophageal perforation and/or severe mucosal damage, esophagitis. Endoscopy is one of the most viable treatment for removal of esophageal bone foreign bodies. This case report describes the clinic, radiographic and endoscopic findings, and successful treatment for a dog with esophageal bone foreign body, and to examine post operative distinct outcomes endoscopically. **Material and Method:** A 7 year old, male, German Shepherd dog was presented to the clinic with complaints of anorexia, weight loss and vomiting for 5 days. Direct thoracic radiograms revealed a radio-opaque density like a bone within the esophagus dorsal to the heart base. Esophagoscopy was performed under general anaesthesia and it confirmed the presence of a bone foreign body within the esophagus. Esophageal foreign body was not orally removed or pushed into the stomach endoscopically. Therefore, gastrotomy was performed and bone was removed from the stomach using endoscopic forceps. **Results and Conclusion:** Although mild esophagitis was revealed after removing bone, no signs of perforation were detected either during endoscopy or on radiographs thereafter. On post operative period, dog was good and two weeks after the operation the owner reported that it appeared to be normal. It was seen that, the appropriate surgical removing was important for not to be damaged to the esophagus.

KeyWords: Dog, Esophageal foreign body, Endoscopy, Gastrotomy.

Bir Köpekte Özefageal Yabancı Cismi: Klinik, Radyografik ve Endoskopik Bulguları ile Cerrahi Sağaltımı

Ö Z E T

Özbilgi/Amaç: Köpeklerde özefagus yabancı cisimlerine oldukça sık rastlanmakta, bu cisimler organ lumeninde sıkıştığı için uzaklaştırılmaları sırasında özefagusta, şiddetli mukozal hasarlar veya perforasyonlar gibi, ciddi komplikasyonlara sebep olmaktadır. Özefagus yabancı cisimlerinin uzaklaştırılmasında en uygun sağaltım seçeneklerinden biri endoskopidir. Bu olgu takdiminde amaç, özefagusta kemik yabancı cisim olan bir köpekte ortaya çıkan klinik, radyografik ve endoskopik bulguların paylaşılması, uygun operasyon tekniğinin ayrıntılı olarak anlatılması, ve operasyon sonrası karşılaşılabilecek sonuçların endoskopik olarak ortaya konmasıdır. **Materyal ve Metot:** Bu olgu sunumunda, 7 yaşlı, erkek, Alman Çoban köpeği 5 gündür süren iştahsızlık, kilo kaybı ve kusma şikayetleri ile kliniğe getirildi. Çekilen direkt göğüs radyografisinde kalbin dorsal hizasında özefagus içinde radyo-opak görünümde bir kemiğin varlığı dikkati çekti. Hayvana genel anestezi altında özefagoskopi uygulandı ve organ lumenindeki kemik yabancı cismin varlığı doğrulandı. Ancak yabancı cisim endoskopik forsepslerle çekilerek ağızdan uzaklaştırılamadı ve mideye doğru itildi. Daha sonra gastrotomi yapılarak forsepsler yardımıyla mideden girilmek suretiyle cismin özefagusta perforasyona neden olmadan uzaklaştırılması sağlandı. **Bulgular ve Sonuç:** Operasyon sonrası yapılan radyografik ve endoskopik incelemelerde özefagusta herhangi bir anormal durumun olmadığı gözlendi. Operasyondan sonraki ikinci haftada sahipleri hayvanın oldukça sağlıklı olduğu bilgisini verdi. Özefagustaki yabancı cismin uzaklaştırılmasında organa hasar vermemek için en uygun cerrahi yöntemin seçilmesinin oldukça önemli olduğu bir kez daha görüldü.

Anahtar kelimeler: Endoskopi, Gastrotomi, Köpek, Özefagus yabancı cismi.

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Introduction

Esophageal foreign bodies (EFBs), especially bones, are common in dogs and can have serious consequences. Bones are usually not easily dislodged once they become impacted in the esophagus. Often a bone has been lodged for several days or more before a definitive diagnosis of esophageal obstruction is made. Spasm of esophageal muscle may also prevent movement of it (Tams and Spector, 2011).

Many reports have been published about methods for removal of EFB in dogs. Success with these methods depends on appropriate case selection. Endoscopy may be used to retrieve a foreign body or push it into the stomach. Objects often can be retrieved by using a grasper or basket. Also balloon catheter may be used to pull the object oral by extracting the catheter. Pulling or pushing an EFB can result in esophageal perforation, severe mucosal damage, esophagitis, fistula formation, stricture formation and leakage or dehiscence of the surgical site resulting in abscess formation or pyothorax. So, it is important the appropriate approach to removal of esophageal foreign bodies in dogs (Buback, 2011; Gianella et al., 2009; Thompson et al., 2012).

This case report describes the clinic, radiographic and endoscopic findings, and successful treatment for a dog with EFB, and to examine post-operative distinct outcomes endoscopically.

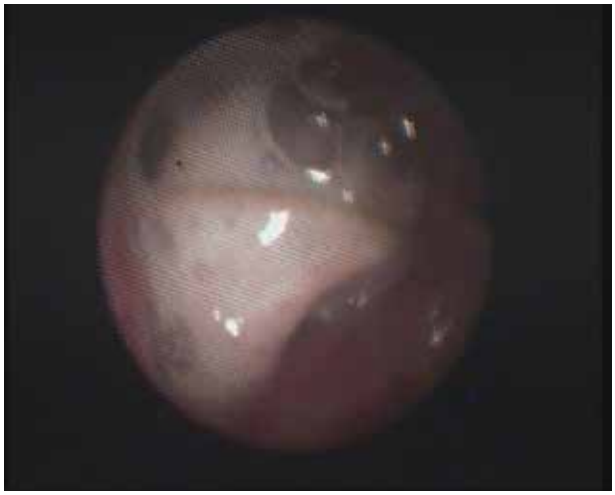

Figure 1. Appearance of the esophageal bone foreign body within the esophagus endoscopically.

Şekil 1. Özefagus lumeni içinde kemik yabancı cismin endoskopik görünümü.

Case History

A 7 year old, male, German Shepherd dog was presented to the clinic with complaints of anorexia, weight loss and vomiting for 5 days. To the anamnesis, dog was fed with a cow vertebrate bones and developed vomiting shortly afterwards.

Direct thoracic radiograms revealed a radio-opaque density within the esophagus dorsal to the heart base. Esophagoscopy was performed under general anaesthesia. Anaesthesia was induced with intravenous administration of 6 mg/kg propofol (Propofol®, Fresenius Kabi, Germany) and maintained on a rebreathing circuit system with isoflurane (Forane®, Abbott, UK) and oxygen. Endoscopy confirmed the presence of a bone foreign body within the esophagus (Figure 1). EFB was not orally removed or pushed into the stomach. In order not to cause an esophageal perforation, retrograde approach was decided from the stomach to the esophagus. Gastrotomy was performed and the bone was removed from the stomach using endoscopic forceps (Figure 2). Although, mild esophagitis was revealed after removing EFB, no signs of perforation were detected either during endoscopy or on radiographs thereafter.

On postoperative period, food and water were not given orally for 24 hours. Then, a gruel or soft food was recommended for 10 days. Amoxicillin-clavulanic acide (Amoklavin, Deva, Turkey), 20 mg/kg, PO, bid, proton pomb inhibitor (Lansor, Sanovel, Turkey) and famotidine (Famodin, İlsan, Turkey), 1 mg/kg, PO, bid were prescribed after surgery. Two weeks after the operation the owner reported that the dog appeard to be normal.

Figure 2. Removal of foreign body from esophagus with endoscopic forceps via gastrotomy.

Şekil 2. Gastrotomi yapılarak yabancı cismin endoskopik forsepsler yardımıyla özefagustan uzaklaştırılması.

Results and Discussion

EFBs are a well recognised problem in small animal practice, especially dogs, with various techniques, such as endoscopical removal, blind forceps retrieval orally, oesophagotomy, combinations of endoscopy/surgery, forceps retrieval fluoroscopic methods reported for their successful removal. (Gianella et al., 2009; Keir et al., 2010)

Acute clinical symptoms are seen when complete or severe partial obstruction is present. The most commonly clinical findings are vomiting, regurgitation, pityalism or dysphagia (Thompson et al., 2012). In chronic cases, the animals may seem normal, but weight loss, vomiting, seizures and loss of appetite occur periodically. Sharp or chronic foreign bodies may cause esophageal perforation, pneumomediastinum, pneumothorax, mediastinitis, pleuritis, pyothorax, mediastinal abscess, bronchoesophageal or tracheoesophageal fistulas, depression, respiratory distress (Parker et al., 1989; Dodman and Baker, 1978). In this case report, dog was brought to the clinic with acute clinical symptoms. There was also weight loss in its symptoms.

The four areas of normal anatomic narrowing in the esophagus include the upper esophageal sphincter, the thoracic inlet, the heart base, and the distal esophagus just proximal to

the gastroesophageal junction (Tams and Spector, 2011). Bone foreign bodies are mostly located between the heart base and diaphragm (Thompson et al., 2012). Diagnosis is based on history, clinical signs and cervical and thoracic radiographs. Radiographs are commonly included in the initial diagnostic evaluation of dogs presenting with the clinical signs associated with EFBs (Buback, 2011; Thompson et al., 2012). Houlton et al. reported that 99% of bony foreign bodies in esophagus can be seen on plain radiographs. 53% of them has increased surrounding soft tissue density and in 21% dilated air-filled cranial esophagus (Houlton et al., 1985). Endoscopic examination is important in definitive diagnosis of foreign bodies in esophagus, in determination of the degree of esophageal lesions and, in appropriate cases the removal of the foreign body. In one study, it was mentioned that the size of the foreign body did not influence outcome or the incidence of long-term complications and should not be used as a reason to avoid endoscopic retrieval. Despite this, radiographic assessment was valuable as it provided important information on location and on changes that can occur secondary to the foreign body (Juvet et al., 2010). In this case, EFB was seen within the esophagus dorsal to the heart base, near the diaphragm by plain radiography. Also definitive diagnosis was made endoscopically.

Treatment depends on the location, chronicity, nature of the foreign body and equipment availability. When the foreign body is grasped by using endoscopic forceps, it is gently rotated around itself and then withdrawn with sharp or pointed ends facing caudal. If it cannot be extracted, another attempt is pushing it into the stomach. The bones will be digested in the stomach so there will be no need for gastrotomy unless the clinical findings continue. If a foreign object cannot be removed by firm traction and under direct endoscopic vision, then surgical removal is indicated. Transhiatal or transthoracic esophagotomy can be performed for foreign body retrieval. It can be seen serious complications during or after surgery. Forceful removal bears a great risk of laceration of the viscus or adjacent vessels or organs (Buback, 2011; Sale, 2006). In this case report, EFB was not removed orally, or pushed into the stomach. It could not be safely retrieved from the esophagus, so as a surgical intervention, gastrotomy was chosen. It was reached to the foreign body and removed from the esophagus through the stomach. Many authors support the use of fluoroscopic guided removal as an alternative to endoscopy. In a study, this technique was found as an effective and rapid method of treatment, and long-term outcomes appeared to be excellent, with low rates of recurrence (Moore 2001). The reason to prefer endoscopy in this case, was its application convenience and greater proportion of exposure to radiation.

The esophageal wall is invariably damaged from bone impaction and subsequent retrieval efforts. The mucosa should be carefully inspected once the bone is removed. If the esophagitis is particularly severe, a proton pump inhibitor is recommended as an antacid of choice (Tams and Spector, 2011). In this case report, severe esophagitis occurred after removal of EFB. Therefore, H2 receptor antagonist, proton pump inhibitor and antibiotic treatment was applied postoperatively.

Esophageal and gastrointestinal foreign bodies can be seen frequently in dogs. Especially esophageal foreign bodies can become life threatening and so they must be removed as soon as possible. In this case, to reduce the risk of complications, appropriate endoscopic surgery was perfomed and the foreign body was removed immediately. It was thought that this case and surgical outcome might be useful to colleagues.

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