

Gastric Foreign Bodies in Dogs

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Abstract: The present study carried out on fifteen clinical cases of different species of dogs which admitted to surgical clinic of veterinary medicine with different symptoms (Acute vomiting, hematemesis and anorexia). There was diagnostic march which including plain radiograph and endoscopic examination. Treatment was including surgical interference and endoscopic retrieval followed by medicinal treatment. This study was aimed the detection of different foreign bodies by the most suitable method according to the type of the foreign bodies.

Key words: Stomach • Foreign Bodies • Dogs

INTRODUCTION

Foreign bodies in the stomach of dogs were common and caused direct physical injure to the mucosal barrier on their way through, or they lodged in the pylorus, leading to acute gastritis, gastric ulceration and obstruction. The diagnosis was straight forward when the foreign object was radiographically distinct [1,2].

The radiological interpretation differed according to the type of foreign material, It's very suitable in metal or poultry bones object took radiopaque but if less radiodense difficult. Endoscope was the most reliable for soft objects and low Radiodense [2-4].

The foreign body could be retrieved using an endoscope. The limiting factors of foreign-body removal were the ability to grasp the foreign body and the ability to withdraw the object through the LES. The position of the object could be confirmed radiographically, where the freely movable foreign bodies were located in the fundic region of the stomach just inside and ventral to the LE [5,6].

MATERIALS AND METHODS

Dogs of the Study: The current investigation has been realized on fifteen clinical cases (Five German shepherd, three Griffon, one French Mastiff, two Rottweiler, one

black jac, one Boxer and 2Golden retriever dogs) with history of acute vomiting, hematemesis, depression and anorexia, their age varied from 3 months to 11 years, of unlike sex and different weight.

The dogs are put under general injectable anesthesia which comprises atropine sulphate (0.05-0.1mg/kg.b.wt.), xylazine (1mg/kg.b.wt.) and ketamine (10-15mg/kg.b.wt.) or propofol (2mg/kg.b.wt.) [7].

Diagnosis March: B.a. plain radiographs are obtained from all dogs using Fischer x-ray unit, with radiographic settings ranged from 44-60 KV; 100 mAs at 0.1 second and 100 FFD [8].

B.b. The endoscopic images were captured for stomach of the inquired dogs using Eickemeyer video-endoscope unit supplied with halogen light source (Vet Lux-150 Watt) and insertion tube (8.5 mm diameter, 1.5 meter length and 2 mm working channel). The dogs are put in left lateral recumbency for the standard procedure of upper digestive tract endoscopic examination. Moderate insufflations are employed during inspection of the esophagus and stomach [6].

Treatment Trial: The treatment was included endoscopic foreign body retrieval or gastrotomy followed by brief dietary rest with intravenous fluid therapy for three days. They got a highly digestible diet (Vegetable soup, boiled

rice and boiled chicken). Also, they received proton pump inhibitors drugs (Omez®, omeprazol 20mg b.i.d.), mucosal coater (Mucogel®, t.i.d.) and promotility drug (Primpran® b.i.d.), q. a week) and systemic antibiotic ceftriaxone® (500 mg ceftriaxone sodium 50 mg/kg., IM, Novartis Pharma S.A.E. Egypt) as daily dose [9].

RESULTS

The radiological finding of foreign bodies in the stomach: the lateral plain radiography revealed presence of radiopaque fork in the stomach (Fig.1a), following that endoscopic examination determining the actual site of the

fork. The endoscopic examination revealed firstly presence of the wooden part in the body of the stomach (Fig.1b), with other endoscopic foreign bodies, there was a key in the pyloric canal with erosion of the pyloric sphincter (Fig. 1c) and hair ball on incisuraangularis (Fig. 1d). from treatment gastrotomy(Fig. 1e) and foreign body retrieval 'hair ball' (Fig. 1f).

With blood analysis of cases of foreign bodies ingestion (Bones), there were low normal R,B.Cs count (5.7×10^6 cell/ul), PCV% (35%), microcytic normochromic anemia in 60% and R,B.Cs count (4.4×10^6 cell/ul), PCV% (35%) and macrocytic hypochromic anemia in 40% in addition to leukocytosis ($23-59 \times 10^3$ cell/ul).

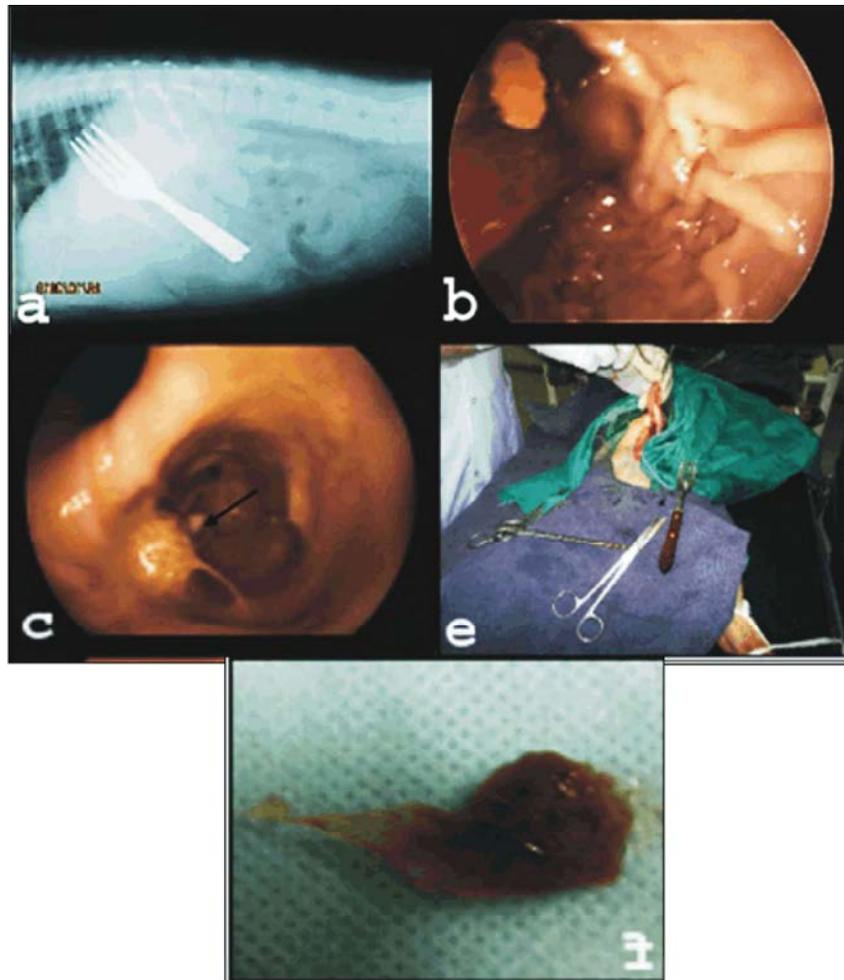


Fig. 1: Different appearances of the gastric foreign bodies and treatment.

- a. radiopaque fork in lateral radiograph.
- b. wooden hand fork in the body of the stomach.
- c. trichobezoar at the incisuraangularis (black arrow).
- d. gastrotomy to remove the fork.
- e. the exteriorized trichobezoar.

DISCUSSION

In the present investigation there are five German shepherd, three Griffon, one French Mastiff, two Rottweiler, one black jac, one Boxer and 2 Golden retriever dogs suffered from ingestion of foreign bodies (Bones, fork, trichobezoars, key and metal chain), these foreign bodies in the stomach cause vomiting, by the time the clinical signs becomes more severe due to the foreign body moves to the posterior parts of GIT; this is in agreement with Tams and Spector [4], Aronson *et al.* [10] and Papazoglou *et al.* [11] who stated that gastrointestinal foreign bodies were caused variety of clinical signs depending on the location, the degree and the duration of the obstruction.

Radiology and endoscopy are considered the most suitable diagnostic tool for the foreign body to detect the site of it; this is in agreement with Webb and Twedt [1], Malancus *et al.* [2], Tams and Spector [4], Cannaday [12] and Hayes [13] who reported that when the foreign object was distinct, the diagnosis was performed by radiography and endoscopy. The radiological interpretation differed according to the type of foreign material and the metal object took radiopaque.

Radiologically, some foreign bodies are invisible and the endoscope can detect them, this is in harmony with Tams and Spector [4] and Parrah *et al.* [14] who stated that the stomach should thoroughly examined for the presence of any additional foreign material that might not have been identified on radiographs.

With endoscopic examination, the foreign bodies are viewed freely move in the fundus or the pyloric canal as mentioned by Michels *et al.* [5] and Webb and Twedt [6] who stated that the most freely movable foreign bodies were migrated to the dependent fundic region and the body of the stomach just inside and ventral to the LES and be easy to remove while the objects with irregular surfaces that were wedged in the antrum and remained there despite positioning changes.

In addition, the presence of these foreign bodies are considered as causative agent for gastritis with acute onset of clinical signs with hematemesis or vomition; this is in agreement with Webb and Twedt [1], Malancus *et al.* [2], Tams and Spector [4] and Lecoindre [15] who stated that acute gastritis was a vague clinical entity associated with loss of integrity of the gastric mucosa and caused direct physical damage to the mucosal barrier with accumulation of foam, saliva on their way through, or they lodged in the pylorus, resulted in acute gastritis, vomiting,

thickening, gastric ulceration and biochemical changes consistent with an upper gastrointestinal obstruction.

Endoscopically, there is mucosal damage with different forms of erythema, erosions and bleeding linear ulcer due to the bone ingestion in agreement with Webb and Twedt [1] who stated that foreign bodies might cause direct physical damage to the mucosal barrier on their way through, or they might lodge in the pylorus, resulted in acute gastritis, vomiting, gastric ulceration and biochemical changes consistent with an upper gastrointestinal obstruction.

In the other hand, there are low normal R.B.Cs count (5.7×10^6 cell/ul), PCV% (35%), microcytic normochromic anemia in 60% and R.B.Cs count (4.4×10^6 cell/ul), PCV% (35%), macrocytic hypochromic anemia in 40% in addition to leukocytosis ($23-59 \times 10^3$ cell/ul). In cases of NSAIDs there is low normal HCT (35%); these findings are concurrent with that mentioned by Webb and Twedt [6] who stated that the mild microcytic anemia and hypoproteinemia were most likely associated with gastrointestinal blood loss.

So that logically after foreign bodies salvage, medicinal treatment was applied for mucosal repair in agreement with Webb and Twedt [1] and Tams [9].

In this study the foreign bodies salvage was carried out by foreign bodies removal endoscopically or by surgically as the advice of Tams and Spector [4] and Cannaday [12] who stated that foreign body might be removed with the aid of fluoroscope, gastroscope but also by gastrotomy or enterotomy. This according to the size of the foreign body, avoiding the injury risk during the retrieval, this is concurrent with Tams and Spector [4], Michels *et al.* [5], Webb and Twedt [6] and Cohn *et al.* [16] who stated that there were limiting factors of foreign-body removal were the ability to grasp the foreign body and the ability to withdraw the object through the LES. If not appropriate angle with the LES, blocking of the foreign body in the LES and laceration of it and the esophageal wall was invariably damaged from bone impaction and subsequent retrieval efforts. In addition to the risk and complications of endoscopic removal include hemorrhage, esophageal rupture and its subsequent complications that comprise pneumo-mediastinum, pneumo-thorax and pyothorax.

CONCLUSIONS

Foreign bodies were diagnosed by either radiograph or endoscope. The endoscope considered most suitable for low radiodensity foreign bodies.

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