CASE REPORT

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Severe gastric impaction in an 8-Year-old Nigerian local dog

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Abstract
An 8-year old male, neutered Nigerian indigenous dog was presented to the Usmanu Danfodiyo University Veterinary Teaching Hospital, Sokoto because of chronic intermittent vomiting, off feed and progressive wasting. Physical examination of the abdomen revealed hard mass in the abdominal cavity. Survey abdominal radiography (lateral view) revealed impacted material along with electrical wire in the stomach. Standard gastrotomy was successfully performed to evacuate the gastric foreign body.

Keywords: Dog, Foreign Body, Gastrotomy, Pica, Radiography
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Introduction

Gastric foreign bodies are common in dogs due to dietary indiscretion and may be seen as incidental findings on abdominal radiographs in the absence of clinical signs. Foreign bodies may be responsible for vomiting secondary to gastric outflow obstruction or the initiation of gastritis (Halfacree, 2010). Dogs eat all sorts of objects ranging from stone to nail, grass, paper, bones and faeces. This condition of non food eating is referred to as pica (Jahun *et al*., 2007). The incidence rate of consuming inedible materials is high in puppies compared to adult dogs except in rabid dogs (Shuler & Tobias, 2006). Occasionally, objects that the dog could only chew or hold onto in its mouth are inadvertently swallowed. Fortunately, most objects that make it to the stomach are either digested or passed out with the stool or regurgitated. Wooden and metallic foreign bodies have been reported in the intestine and stomach of dogs in Nigeria (Jahun *et al*., 2007).

Gastric disease is usually accompanied by acute or chronic vomiting. In cases of severe disease, animals may become depressed, dehydrated and hypovolaemic, and chronic disease may be associated with significant weight loss (Halfacree, 2010). Loss of appetite, abdominal pain and weight loss may be present if the foreign body is chronic (Suresh *et al*., 2011).

Abdominal palpation is rarely diagnostic unless severe obstruction has occurred or the stomach is seriously impacted. Diagnostic tools, including radiography, ultrasonography, and computed tomography (CT) are used for definite diagnosis and determination of location within the gastrointestinal tract (Chiang & Chou, 2005). We report a case of gastric foreign body predominantly made up of leaves combined with polythene materials and electrical wire in a matured dog; diagnosis was made by abdominal palpation and confirmed by survey radiography.

Case Report

An 8-year-old, 10 kg body weight, neutered male Nigerian local dog was presented to Usmanu Danfodiyo University, Veterinary Teaching Hospital, Sokoto with complaints of intermittent chronic vomition, off feed and progressive wasting noticed about two months prior to presentation. It was reported that the dog had been eating polythene materials and grasses before its presentation. The personality of the dog was intact, medical history revealed current vaccination against rabies.

Physical examination revealed impacted mass in the stomach; the dog was cachectic and dull, but alert. Visible mucous membranes were pale and capillary refill time was greater than two seconds.

Blood was collected for packed cell volume and complete blood count, and faecal sample for parasitological investigation. Xylazine (2%) was administered at 0.5mg/kg i.m to sedate the patient to aid in plain radiographic study.

The haematology results obtained showed that the packed cell volume was 28%. A lateral abdominal plain radiographic finding was suggestive of gastric foreign bodies. Radiography revealed well impacted stomach with radiolucent objects along with radiopaque electrical wire as shown in plate I.

The patient was scheduled for gastrotomy; catheterized for pre and intra- operative intravenous administration of lactated ringers' solution and prepared for aseptic emergency surgery. Penstrep® (procaine penicillin 200mg/ml and dihydrostreptomycin 250mg/ml) at 20,000 i.u/kg and 10mg/kg respectively were administered before the surgery. The patient was premedicated with xylazine at 1mg/kg, i.m and atropine at 0.05mg/kg, i.m. Surgical plain anesthesia was induced with 2.5% thiopentone sodium at 10mg/kg i.v given to effect and maintained with the same agent through an indwelling catheter. The patient was placed on dorsal recumbency supported with sand bags on the sides and draped. A 9 cm cranial mid-ventral skin incision was made from the xiphoid to below the umblicus through the linea alba. The stomach was gently exteriorized and stabilized. About 6 cm gastric incision was made on the less vascular portion of the stomach from the serosa to the mucosa. 350 grammes of indigestible foreign body materials were recovered from the stomach (plate II). The gastrotomy was closed in two layers mucosa and serosa separately with size 2/0 polyglycolic acid (PGA-Ethicon®); using lambert suture pattern over sown with cushing. Closure of the linea alba was done with chromic catgut size 0, in simple interrupted pattern; subcutaneous layer was closed using subcuticular suture pattern with chromic catgut size 1/0, and the skin was closed with nylon size 0, using simple interrupted horizontal mattress pattern (plate III). Surgical site was dressed and covered with sterile gauze bandage and held in place with adhesive plaster.

Recovery from anesthesia was smooth and the patient was hospitalized for 7 days during which the postoperative care was carried out. The patient was also maintained on 5% dextrose saline at 25 drops/min i.v for 2 days. Then as from 8 hours post surgery the patient was placed on penicillin/streptomycin combination for seven days, 10% iron dextran at 10mg/kg for haemopoiesis and piroxicam at 0.3mg/kg as analgesic. The skin sutures were removed on the 12th day post surgery. The patient recovered fully and weighted 18kg five months after the gastrotomy.

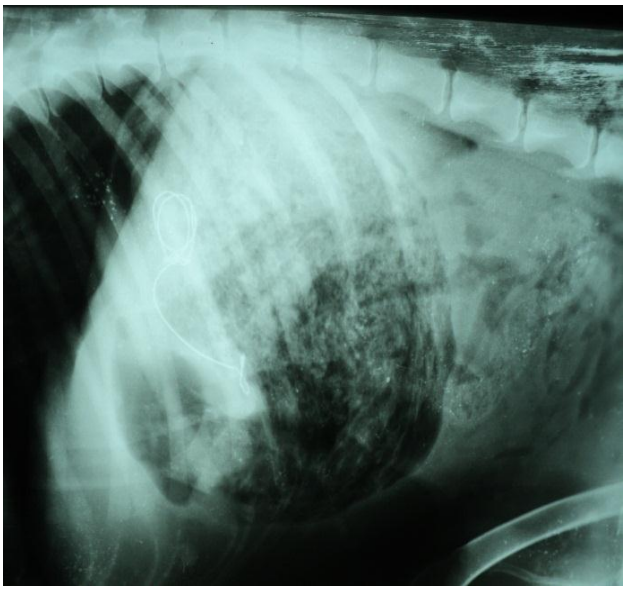

Plate I: Lateral abdominal radiograph showing impacted stomach

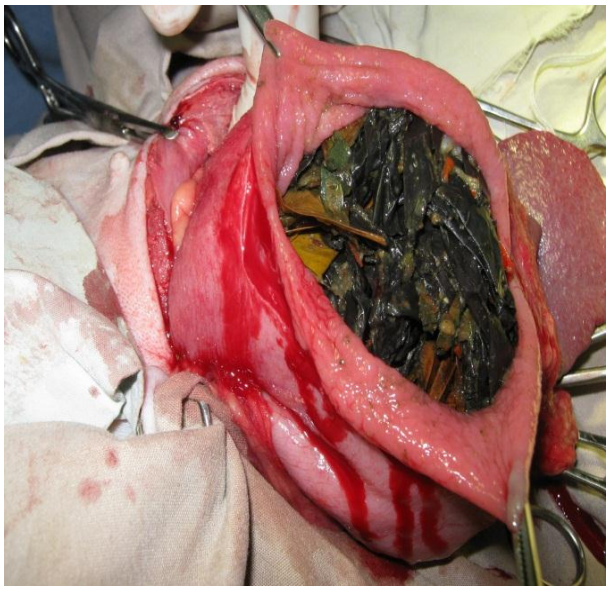

Plate II: Gastric incision exposing the gastric foreign Body, space between gastric and foreign

Discussion

Aberrant appetite in animals is usually referred to as "pica" This is usually common in puppies as they play with inedible materials that get accidentally swallowed. In rabies and in deficiency of some essential vitamins, dogs and cats regardless of age ingest materials (stones, sand, grass, plastics and metallic objects) and these could impact on the stomach (Hunt *et al.,* 1991; Hall, 2000; Fossum, 2002; Rasmussen, 2003; Shuler & Tobias, 2006). Some hospitalized patients out of boredom could also bite on the wooden furniture or plastic materials used in feeding in the cage and could accidentally swallow such (Jahun *et al.,*2007).

When a positive history of pica appetite is given and rabies is ruled out, physical examination findings could include constipation, intestinal obstruction, impacted stomach and there could be history of vomition in the early case of such patient.

Plate III: Skin closure using interrupted horizontal mattress suture pattern

Dehydration is a usual finding, and there could be structural dental damage (Nicholson, 2000; Fossum, 2002; Rasmussen, 2003; Halfacree, 2010). The location of the indigestible material is usually confirmed through radiography or ultrasonography (Hunt *et al.,* 1991; Chiang & Chou, 2005; Halfacree, 2010).

The case presented involved an eight-year-old Nigerian local dog. The dog had a good personality but was dehydrated, had abnormal dental wear and had impacted stomach. The above findings differ from earlier ones which associated aberrant appetite with puppies and older dogs with rabies (Hunt *et al.,*1991; Hall, 2000). Furthermore, they were not able to rule out deficiency of some essential minerals or vitamins in this case. Gastic foreign body causing impaction was tentatively diagnosed through physical examination and confirmed through radiography as documented by other authors (Hunt *et al.,* 1991; Nicholson, 2000; Fossum, 2002; Chiang & Chou,2005).

Gastric evacuation through gastrotomy identified the impacting materials as eucalyptus leaves, polythene bags, sand and electric wire. Five months post surgery

the patient weighted 18kg. Surgery remains the most effective method of management of gastric impaction by indigestible materials and the outcome of this case agrees with previous reports (Fossum, 2002; Rasmussen 2003; Shuler & Tobias, 2006).

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