What is Your Diagnosis?

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Signalment

A thirteen kilograms, 6-year-old, male, Shih Tzu dog.

History

The patient was presented to the diagnostic imaging unit, The Small Animal Teaching Hospital, Faculty of Veterinary Science, Chulalongkorn University with the chief complaints of depression and vomiting for 2 weeks.

Clinical examination

Based on general physical examination, dehydration status, color of mucous membrane, heart rate and sound, respiratory rate and lung sound, femoral pulse, and body temperature of the dog were in normal limit. However, abdominal discomforts with mild abdominal cramp were detected during abdominal palpation.

Radiographic examination

Due to the clinical signs of vomiting and abdominal cramp that suggested gastrointestinal problems, the patient was subjected for abdominal radiography to investigate any abnormalities of intra-abdominal organs. In addition, barium contrast medium was administered for further gastrointestinal tract evaluation.

What is your diagnosis?
Please turn to next page for the answer.

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Radiographic findings

Abdominal survey radiographs, both of right lateral and ventrodorsal projections (Fig. 1a and 1b), revealed mild degree of gastric dilatation with fluid and gas content which latter was markedly observed at the pyloric area (asterisk). The rest of intra-abdominal gastrointestinal tract seemed normal without any evidences of radiopaque foreign body and small bowel ileus signs. Other intra-abdominal organs such as spleen and urinary system were in normal appearance. After upper gastrointestinal tract study with barium swollen, abdominal radiographs at 15, 30, 60, 120 and 240 minutes (Fig. 2a and 2b) showed that barium was retained in gastric lumen without the evidence of any radiopaque barium content in duodenum. Besides, a 5.0 x 5.0 cm, round shape, radiolucent foreign body was detected at the pyloric antrum (asterisk).

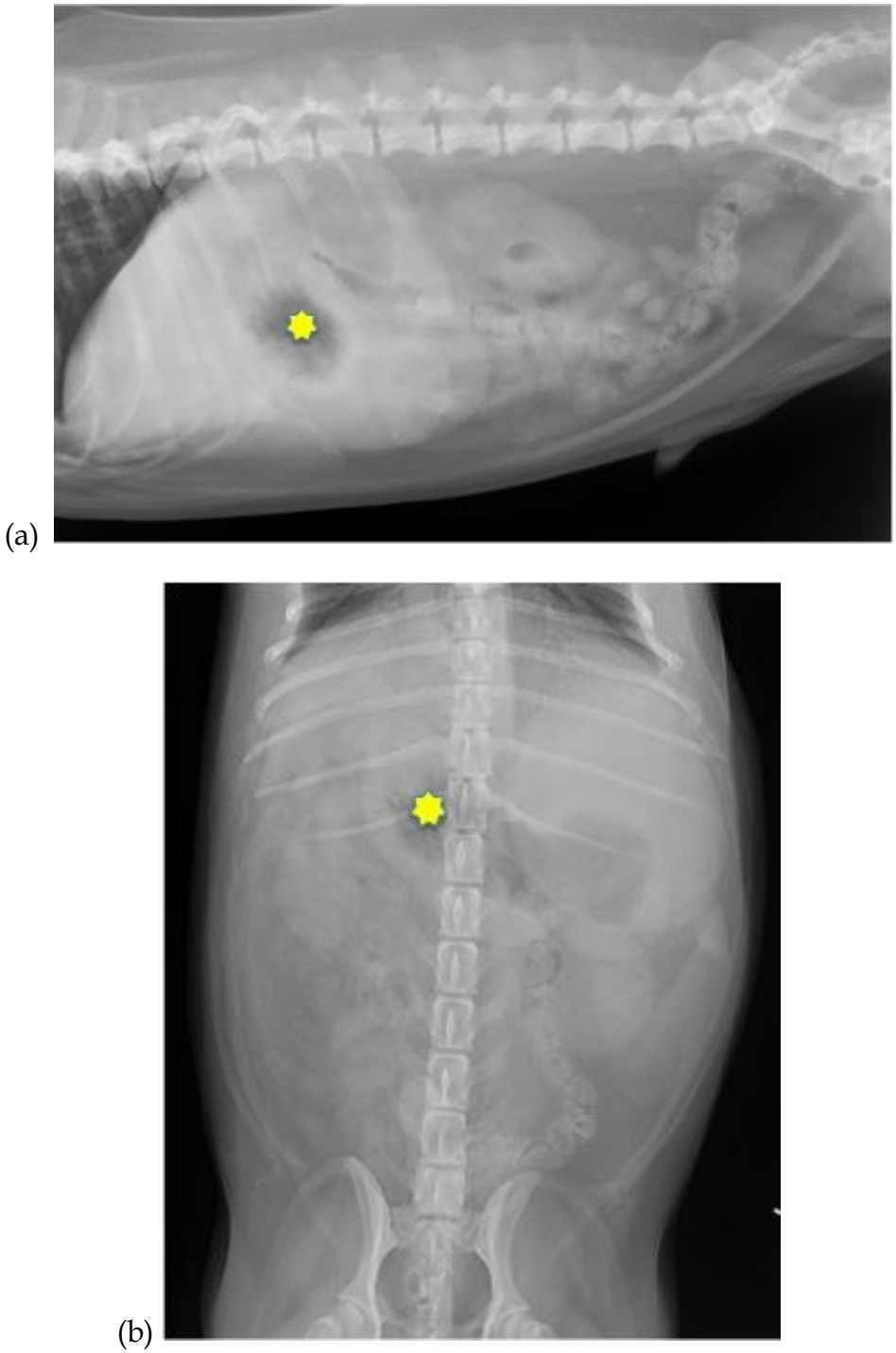

Figure 1 The plain, right lateral (a) and ventrodorsal (b) radiographs showed the moderate degree of gastric dilatation with fluid that mostly found at the fundus area on both views and radiolucent gas content at the pylorus (asterisk).

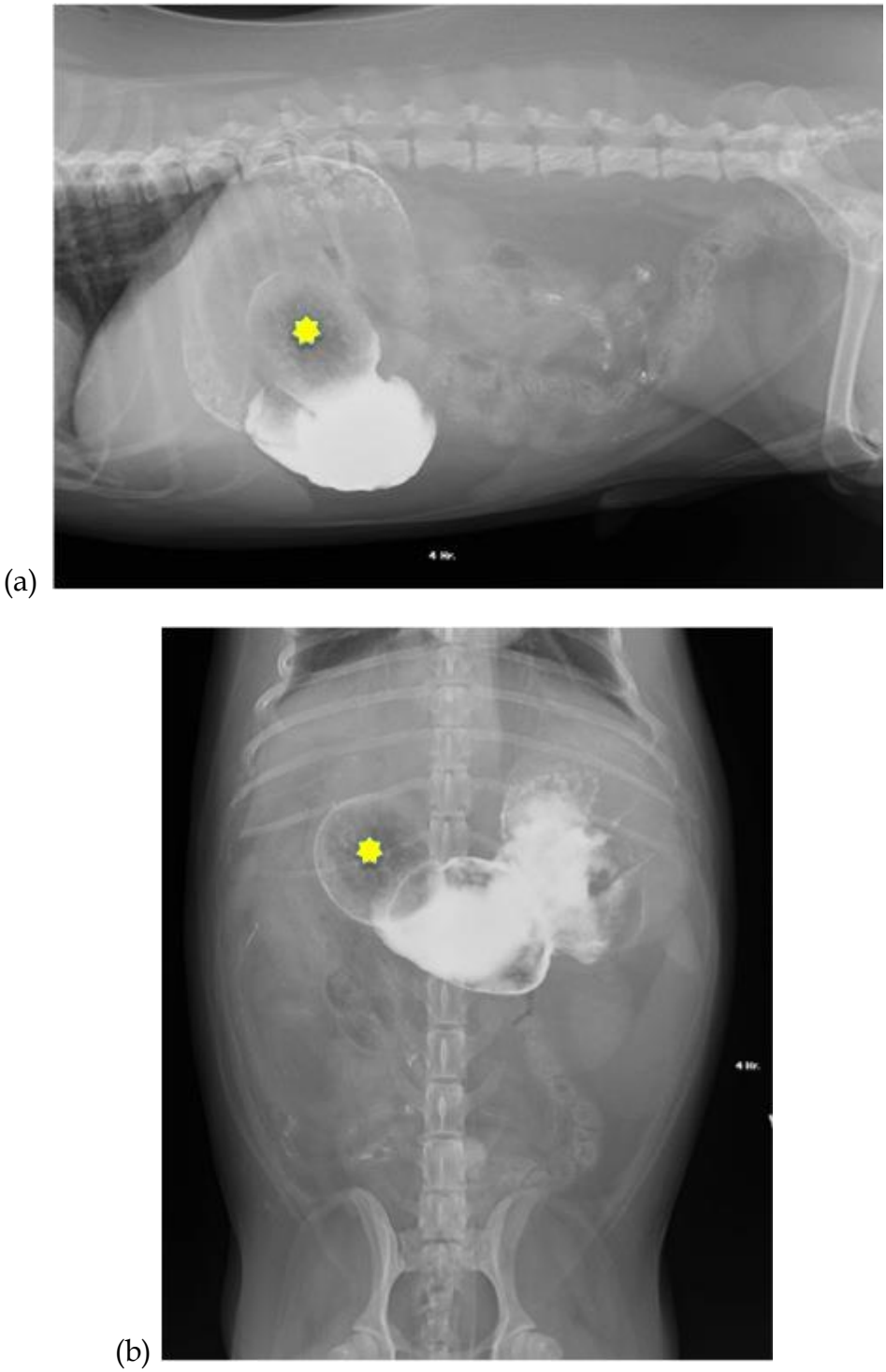

Figure 2 Upper gastrointestinal study with barium swollen on both of right lateral (a) and ventrodorsal (b) radiographs at 240 minutes showed that all barium content was retained in gastric lumen without any evidences of barium in small bowel. Besides, the pyloric area was radiolucent in both radiographic views (asterisk). Therefore, radiolucent foreign body was suggested.

Radiographic diagnosis

Gastric foreign body (rubber ball) with obstructive sign.

Discussion

The survey radiograph is commonly used for detection of high atomic number, radiopaque foreign materials such as bone fragments, coin or other metallic instrument that can be found within the lumen along gastrointestinal tract extending from cervical esophagus through intra-abdominal small bowel. However, in the case of low atomic number-materials such as plastic ball, cloth, low-density rubber that cannot absorb the X-ray, the radiolucent condition would be found. To detect the radiolucent foreign body in widen gastrointestinal tract such as in gastric lumen might be difficult on plain abdominal radiographs if the material is not corked at the narrow location e.g.

pyloric area. In normal dogs, radiolucent gas content is usually found at the fundus on both ventrodorsal and right lateral projections. However, the radiolucent lesion was found at the pylorus area in this patient could be suggested for corked radiolucent foreign body. Clinical signs and prognosis of gastrointestinal tract foreign body cases are varied to the shape of material such as linear or non-linear structure (Hobday et al., 2014). In the case of gastric foreign body, gastric obstruction induced gastric dilatation and volvulus must be aware (Battisti et al., 2012) In the case of severe dilatation of stomach that upper gastrointestinal study with barium swollen may delay the diagnostic procedure, abdominal ultrasonographic examination would be one of desired modalities.

Reference

Battisti A, Toscana MJ and Formaggina L 2012. Gastric foreign body as a risk factor for gastric dilatation and volvulus in dogs. JAVMA. 241: 1190 – 1193.

Hobday MM, Pachtinger GE, Drobatz KJ ad Syring RS 2014. Linear versus non-linear gastrointestinal foreign bodies in 499 dogs: clinical presentation, management and short-term outcome. J Small Anim Pract. 55: 560 – 565.