What Is Your Diagnosis?

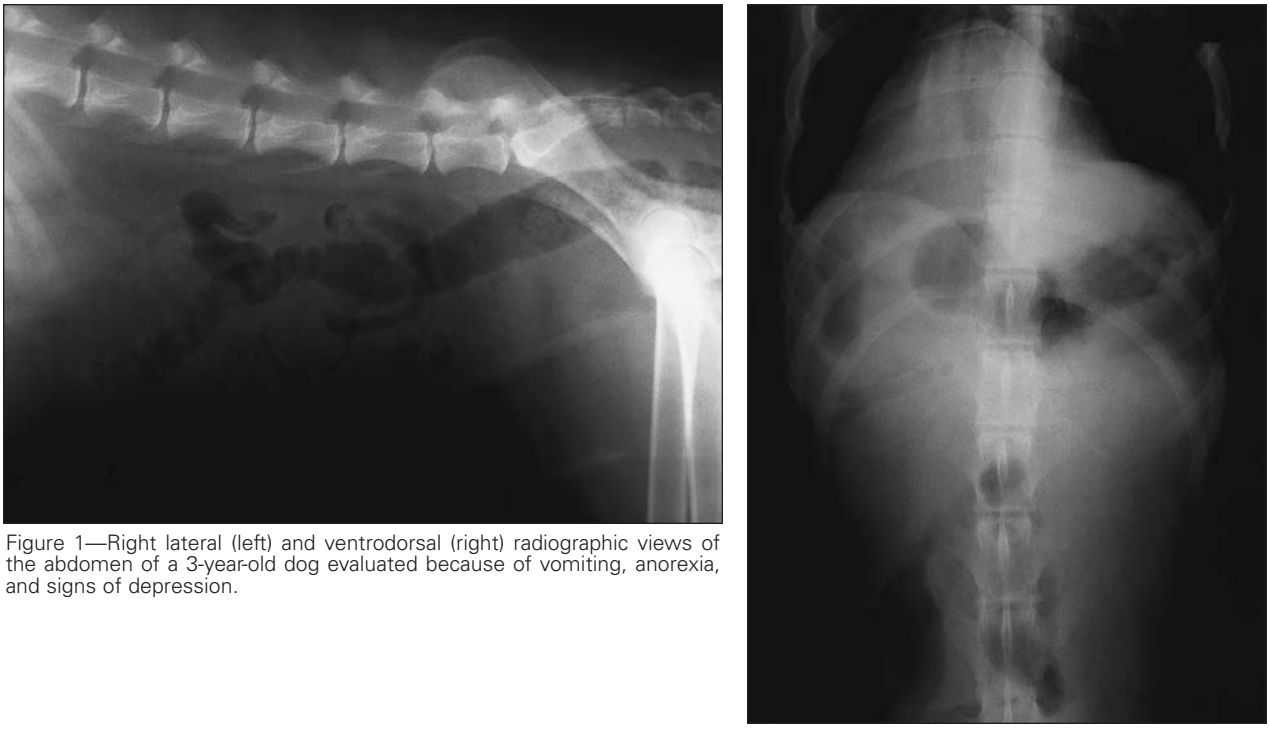

Figure 1—Right lateral (left) and ventrodorsal (right) radiographic views of the abdomen of a 3-year-old dog evaluated because of vomiting, anorexia, and signs of depression.

History

A 3-year-old castrated male Great Pyrenees was referred because of anorexia, vomiting, and signs of depression. The dog had a history of intermittent episodes of vomiting since it was a puppy. In addition, the dog had been hit by a car 3 weeks prior to referral. Immediately after the accident, the dog had been treated with fluids and antibiotics administered IV; vomiting episodes began to increase in frequency the day after the accident. Two weeks prior to referral, the referring veterinarian prescribed metoclopramide to be given orally 30 minutes before the dog ate. The owner reported that this treatment decreased the frequency of vomiting episodes.

On physical examination, the dog appeared lethargic and thin; other abnormalities were not detected. Complete blood count revealed monocytosis (2,268 cells/µl; reference range, 175 to 1,700 cells/µl) and eosinophilia (2,106 cells/µl; reference range, 120 to 1,300 cells/µl). Results of serum biochemical analyses and urinalysis were within reference ranges. Survey abdominal radiographs were obtained (**Fig 1**).

Determine whether additional imaging studies are required, or make your diagnosis from Figure 1—then turn the page ➧

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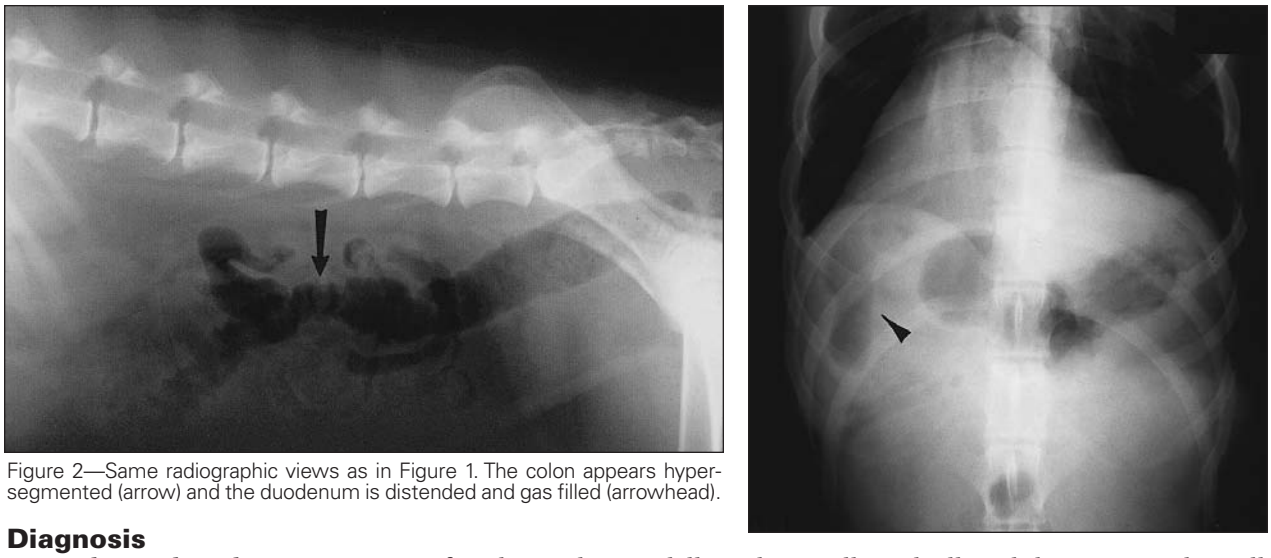

Figure 2—Same radiographic views as in Figure 1. The colon appears hypersegmented (arrow) and the duodenum is distended and gas filled (arrowhead).

Diagnosis

Radiographic diagnosis—Loss of radiographic detail in the mid-abdominal region, hypersegmented colon, and distended and gas-filled duodenum (**Fig 2**).

Comments

The left kidney was not visible on abdominal radiographs. Differential diagnoses included foreign body, trauma to abdominal organs, renal hematoma or abscess, and neoplasia. Abdominal ultrasonography revealed a large, hypoechoic left renal pelvis (2 cm wide; the renal pelvis is not typically seen on an ultrasonogram of a healthy dog[1]). Excretory urography revealed left hydronephrosis and hydroureter. In addition, contrast material was evident in the peritoneal cavity between the left kidney and the urinary bladder. These findings were consistent with a diagnosis of ureteral rupture. Abdominal contrast radiography was performed, and a coil-spring pattern was evident in the proximal portion of the descending colon on the radiographic views obtained 2 hours after oral administration of barium (**Fig 3**). This finding was consistent with a diagnosis of intussusception.[2]

During celiotomy, the left kidney was found to be dark, soft, and approximately half as large as the right kidney. The left kidney and renal vasculature were surrounded by fibrous adhesions that continued caudally and ventrally and adhered the ureter to the wall of the bladder. Purulent material also surrounded the left ureter. The descending colon was compressed by fibrous adhesions located diagonally across the ventral and lateral surfaces. These adhesions were thought to be the cause of the coil-spring appearance evident on radiographic views, because the lumen of the colon was patent and distensible with saline (0.9% NaCl) solution. Serosal surfaces of the intestines and urinary bladder were granular and hyperemic. In addition, the walls of the ileum and distal portion of the jejunum were abnormally thick and firm. The left kidney and ureter were removed, and full-thickness biopsy specimens of the duodenum, jejunum, ileum, and descending colon were obtained.

Our decision to proceed with surgery was made on the basis of abnormalities detected during radiography and ultrasonography. We believed that damage to the left kidney and ureter was attributable to trauma sustained when the dog was hit by a car, and that the adhesions and changes in the serosal surfaces were attributable to chemical irritation secondary to peritonitis caused by urine and peritoneal trauma.[3] The loss of radiographic detail in the mid-abdominal region that was apparent on the survey radiographs was consistent with a local peritonitis. Eosinophilic enteritis was diagnosed on the basis of microscopic examination of the small intestine biopsy specimens. The dog was treated with prednisone (1 mg/kg [0.45 mg/lb] of body weight, PO, q 12 h) beginning 10 days after surgery, and the owner was instructed to begin feeding a fish and potato diet. Five months after nephrectomy, the owner reported that the dog was doing well and had maintained body weight.

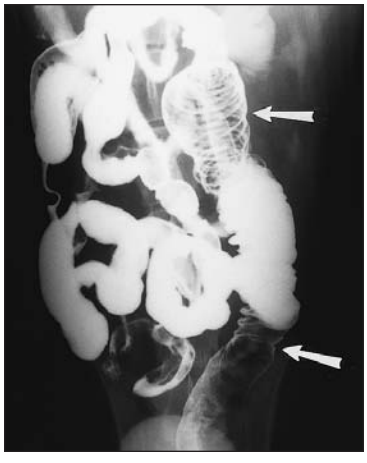

Figure 3—Ventrodorsal radiographic view of the abdomen of the dog described in Figure 1, obtained 2 hours after oral administration of barium. Notice the coil-spring appearance of the descending colon (arrows).

1. Finn Bodner ST. The kidney. In: Cartee RE, ed. *Practical veterinary ultrasound.* Philadelphia: The Williams & Wilkins Co, 1995;164.

2. Kealy JK. The alimentary tract. In: Kealy JK, ed. *Diagnostic radiology of the cat and dog.* 2nd ed. Philadelphia: WB Saunders Co, 1987;89–91.

3. Crowe DT, Bjorling DE. *Peritoneum and peritoneal cavity.* In: Slatter D, ed. *Textbook of small animal surgery*. 2nd ed. Philadelphia: WB Saunders Co, 1985;407–429.