

## What Is Your Diagnosis?

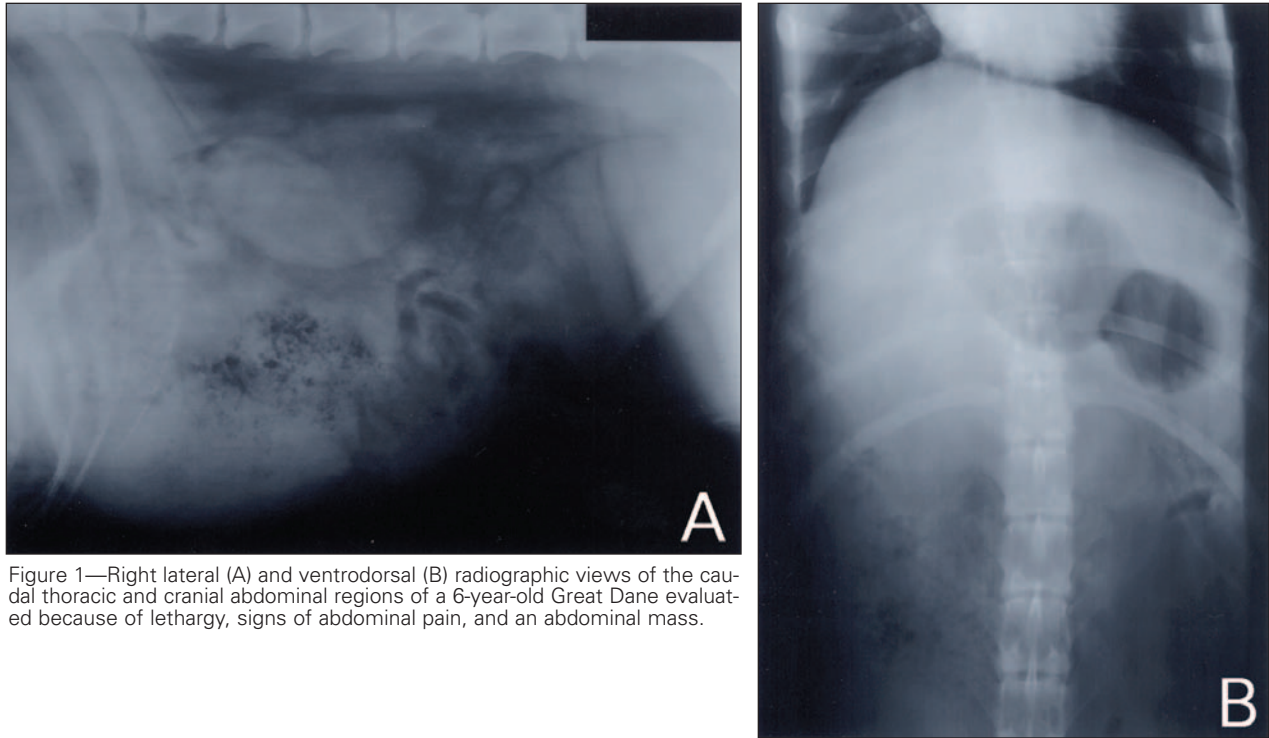


Figure 1—Right lateral (A) and ventrodorsal (B) radiographic views of the caudal thoracic and cranial abdominal regions of a 6-year-old Great Dane evaluated because of lethargy, signs of abdominal pain, and an abdominal mass.

### History

A 6-year-old spayed female Great Dane was evaluated because of lethargy and signs of abdominal pain of 2 days' duration. In addition, the dog was unable to stand. Physical examination revealed weak pulse quality and icterus. Signs of pain were elicited on palpation of a mass in the cranial abdominal region. A CBC, urinalysis, and serum biochemical analyses revealed mature neutrophilia ( $17.544 \times 10^3$  cells/ $\mu\text{l}$ ; reference range,  $2.9$  to  $12.0 \times 10^3$  cells/ $\mu\text{l}$ ), hematuria, high serum alkaline phosphatase activity (319 U/L; reference range, 13 to 22 U/L), and hyperbilirubinemia (total bilirubin, 1.1 mg/dl; reference range, 0.0 to 0.2 mg/dl). Abdominal radiographs were obtained (Fig 1).

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

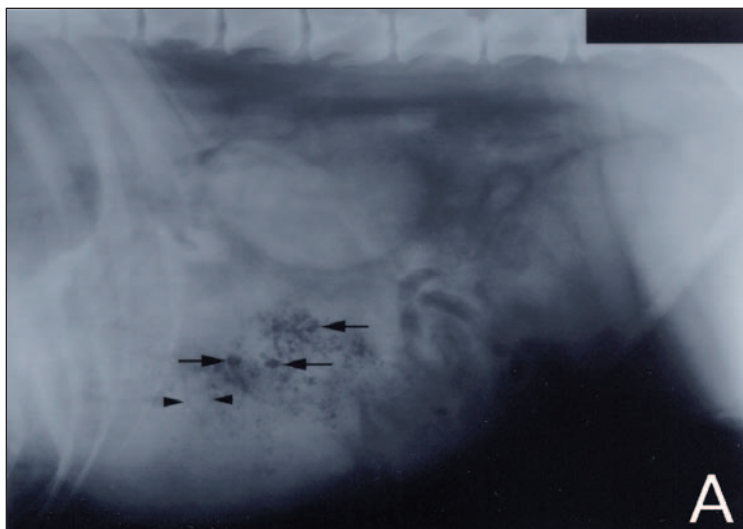


Figure 2—Same radiographic views as in Figure 1. The spleen is enlarged and contains numerous gas pockets (arrows) and air-filled splenic vessels (arrowheads).

## Diagnosis

**Radiographic diagnosis**—Soft-tissue opacity containing numerous gas pockets in the right cranioventral abdominal region (Fig 2).

## Comments

The soft-tissue opacity was consistent with an enlarged spleen. This created a mass effect that displaced the small intestines caudodorsally. Differential diagnoses for splenomegaly include splenic torsion, splenic congestion, splenitis, and splenic neoplasia.<sup>1</sup> The branching gas pattern within the soft-tissue opacity likely represented gas within splenic veins (Fig 2). A moderate loss of serosal surface detail was also noticed throughout the abdomen. This finding was consistent with free abdominal fluid.<sup>1</sup> On the basis of clinical signs and radiographic abnormalities, our presumptive diagnosis was splenic torsion.

Common clinical signs of splenic torsion in dogs include signs of depression or lethargy, icterus, anorexia, and splenomegaly.<sup>2,3</sup> Splenic torsion is especially prevalent in Great Danes and German Shepherd Dogs.<sup>2</sup> Laboratory tests often reveal leukocytosis characterized by neutrophilia,<sup>2</sup> high serum alkaline phosphatase activity,<sup>2,3</sup> and hematuria or hemoglobinuria.<sup>3</sup> Radiographic signs of splenic torsion include splenomegaly, decreased abdominal detail, displacement of the small intestine, change in splenic shape or location, and splenic gas.<sup>4</sup>

Splenic ultrasonography has been used to confirm splenic torsion in dogs. Typical findings include splenomegaly and diffuse hypoechoogenicity with linear echodensities separating large anechoic areas.<sup>5</sup> However, we did not believe that further diagnostic

imaging was necessary for the dog described in this report. Instead, splenic torsion was confirmed during emergency laparotomy, and a splenectomy was performed. Bacteriologic culture of biopsy specimens revealed gram-positive rods, consistent with *Clostridium* spp. The dog was treated with cefotetam (20 mg/kg [9.1 mg/lb], IV, q 8 h for 5 days) and was released from the hospital 5 days after surgery. Seven days later, the owners reported that the dog appeared healthy.

1. O'Brien TR. Liver, spleen, and pancreas. In: O'Brien TR, ed. *Radiographic diagnosis of abdominal disorders in the dog and cat*. Philadelphia: WB Saunders Co, 1978;376–480.

2. Neath PJ, Brockman DJ, Saunders HM. Retrospective analysis of 19 cases of isolated torsion of the splenic pedicle in dogs. *J Small Anim Pract* 1997;38:387–392.

3. Stickle RL. Radiographic signs of isolated splenic torsion in dogs: eight cases (1980–1987). *J Am Vet Med Assoc* 1989;194:103–106.

4. Saunders HM, Neath PJ, Brockman DJ. B-mode and Doppler ultrasound imaging of the spleen with canine splenic torsion: a retrospective evaluation. *Vet Radiol Ultrasound* 1998;39:349–353.

5. Konde LJ, Wrigley RH, Lebel JL, et al. Sonographic and radiographic changes associated with splenic torsion in the dog. *Vet Radiol* 1989;30:41–45.

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