

What Is Your Diagnosis?

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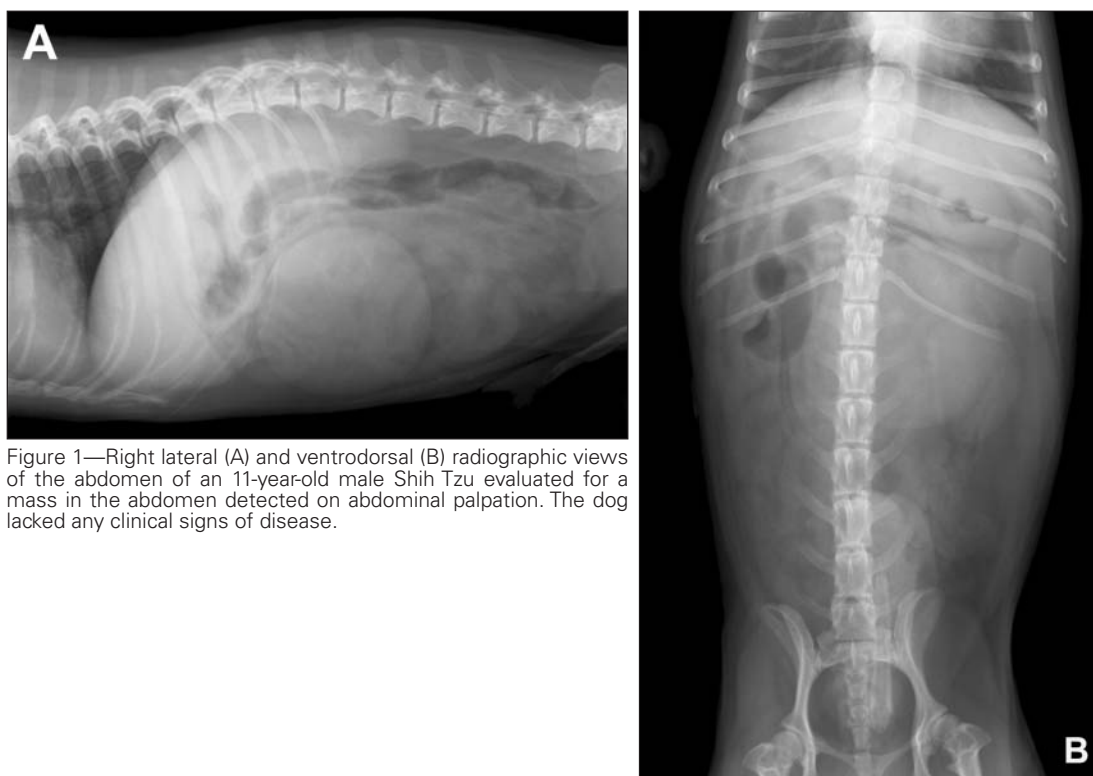


Figure 1—Right lateral (A) and ventrodorsal (B) radiographic views of the abdomen of an 11-year-old male Shih Tzu evaluated for a mass in the abdomen detected on abdominal palpation. The dog lacked any clinical signs of disease.

History

An 11-year-old sexually intact male Shih Tzu underwent a physical examination in preparation for routine teeth cleaning. During the preanesthetic evaluation, abdominal palpation revealed a round, nonpainful mass in the middle portion of the abdomen. The rest of the examination findings were unremarkable. Results of hematologic analysis, serum biochemical analysis, and urinalysis were within reference limits. Radiographs of the abdomen were obtained to investigate the mass (Figure 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. On the lateral view, notice a regular soft tissue opacity mass in the midabdomen, caudal to the liver and stomach and ventral to the colon (arrows). On the ventrodorsal view, the mass is evident on the left side of the abdomen, partially over the left kidney (arrows).



Diagnostic Imaging Findings and Interpretation

On the lateral view (Figure 2), an 8-cm-diameter regular soft tissue opacity mass that is slightly less opaque in its ventral aspect as a result of summation with peritoneal fat is observed in the midabdomen, caudal to the liver and stomach and ventral to the colon. The mass produces summation sign with some loops of small intestine, and others are displaced caudally. On the ventrodorsal view, the mass is on the left side of the abdomen, partially overlying the left kidney. According to the location of the mass within the abdomen, the organs potentially involved may be the spleen, liver, intestine, lymph nodes, mesentery, and pancreas. The differential diagnoses based on the radiologic findings include neoplasia, nodular hyperplasia, hematoma, abscess, granuloma, and cyst.

Abdominal ultrasonography was performed to further characterize the lesion. An 8-cm-diameter, hyperechoic, attenuating mass was found to be emanating from the central portion of the spleen and was deforming the contour of the spleen. The remainder of the spleen contained several hyperechoic nodules (diameter, approx 1 cm). No obvious abnormalities were noted in the rest of the abdominal structures.

Differential diagnoses for this splenic mass included splenic lipoma, myelolipoma, hemangioma, nodular hyperplasia, extramedullary hematopoiesis, hematoma, and hemangiosarcoma. Radiographic findings were suggestive of a soft tissue mass, but the ultrasonographic attenuation of the hyperechoic mass suggested a fat-rich component. On the basis of the ultrasonographic appearance, a myelolipoma or lipoma was considered most likely.

Comments

Despite the lack of clinical signs of disease, a laparotomy was elected. An 8-cm-diameter pale mass was found to emanate from the body of the spleen. A total splenectomy was performed, and the spleen was submitted for histologic evaluation. The dog made an uneventful recovery. On the basis of the histologic findings, the mass was identified as a splenic myelolipoma.

Myelolipoma is a benign tumor consisting of fat interspersed with hematopoietic elements resembling bone

marrow; this tumor is uncommon in small animals.¹ In dogs, the size and number can vary and, in rare instances, these lesions can grow to be quite large,² as in the dog described in the present report. Smaller lesions are typically subclinical, and large tumors may cause clinical signs as a result of a mass effect.³ Despite the large size of the mass in this dog, the lesion did not cause clinical signs of disease and was discovered only on palpation during a preanesthetic evaluation.

Ultrasonography is a good imaging technique for detecting splenic lesions. In contrast to many hypoechoic splenic lesions, myelolipomas have a characteristic ultrasonographic appearance. They are commonly described as hyperechoic masses or nodules with homogeneous echotexture, and they are usually found adjacent to the splenic veins. The ultrasonographic appearance of the myelolipoma is related to its architecture and constituents. When fat is the main component, the myelolipoma has an ultrasonographic pattern that is difficult to differentiate from lipoma. Histologic evaluation is required to reach the definite diagnosis. However, if the myelolipoma also contains macroscopic quantities of nonfatty material (blood, calcium, or myeloid tissue), the ultrasonographic appearance may have a more nonspecific heterogeneous pattern.³ In the patient described in the present report, the tumor did have a typical ultrasonographic appearance consistent with adipose tissue, making histologic evaluation necessary to differentiate between myelolipoma and lipoma.

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2. Schwarz LA, Penninck DG, Gliatto J. Ultrasound corner canine splenic myelolipomas. *Vet Radiol Ultrasound* 2001;42:347–348.
3. Rao P, Kenney PJ, Wagner BJ, et al. Imaging and pathologic features of myelolipoma. *Radiographics* 1997;17:1373–1385.