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Ultrasound Diagnosis

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History

A ten-year-old, 32-kilogram-body weight, castrated, Golden Retriever dog was presented at the Chulalongkorn University, Small Animal, Veterinary Teaching Hospital with clinical signs of marked edema in both hindlimbs, including prepuce and scrotum. Sixteen months ago, this dog had undergone a castration operation to remove the seminoma affected the left testicle. Physical examination revealed pink mucous membranes and a mildly tensed caudal abdomen, on palpation. A routine blood work, urinalysis and radiographic examination of thorax and abdomen were performed. Only a mild leukocytosis (14,700 white blood cells/μl) with neutrophilia (87%) was observed. Heart and lung fields radiographically were within normal limits. Survey radiographs of the abdomen demonstrated an ill-defined, irregular, soft tissue opacity, approximately 6 by 8 cm, in the sublumbar area, ventrally displacing the descending colon. An abdominal ultrasonography was performed to investigate sublumbar abnormalities.

Ultrasonographic Findings

Trans-abdominal ultrasonographic evaluation of the abdomen was performed using a real-time, 8 MHz microconvex, phased array transducer with the dog in dorsal and lateral recumbency. The overall liver was hyperechoic to the kidneys and hypoechoic to the spleen, indicating a normal echogenicity relationship. The sublumbar soft tissue mass diagnosed on radiographs was lateral to the iliac vessels, at the location of the medial iliac lymph nodes. In this region, there were two solid structures, ultrasonographically appeared well-circumscribed with slightly irregular margins, and heterogeneously hypoechoic relative to surrounding fat (Fig 1 and 2). The right and left masses were approximately 3 by 7 cm and 5 by 11 cm in diameter, respectively. A small amount of anechoic retroperitoneal fluid was detected adjacent to the cranial aspect of the left mass. In addition, several intra-abdominal lymph nodes were slightly enlarged (short/long axis ratio > 0.5), well-defined, hypoechoic, but remained relatively uniform. Ultrasonography of other abdominal organs appeared within normal limits. Fine-needle aspiration of the sublumbar mass revealed the presence of metastatic seminoma.

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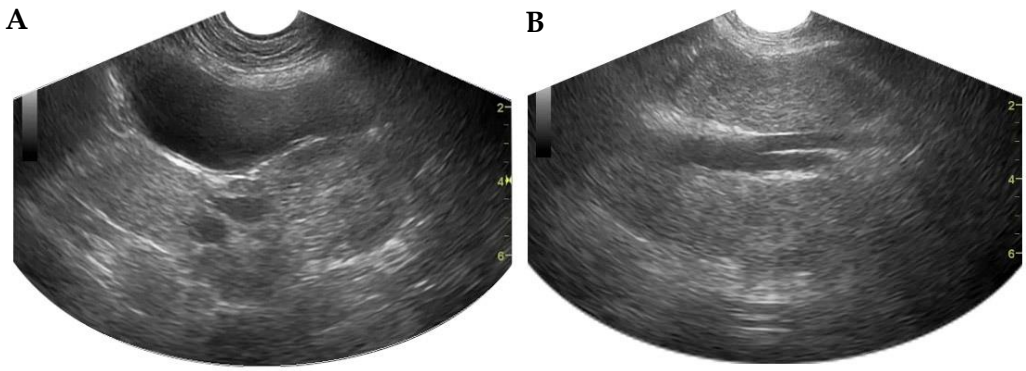

Figure 1 Transverse (A) and longitudinal (B) sonograms of the metastatic seminomas in the sublumbar area of a ten-year-old, 32-kilogram-body weight, castrated, Golden Retriever dog. Two large, irregular, heterogeneously hypoechoic masses, consistent with metastatic disease, were dorsal to the urinary bladder, at the location of the right and left medial iliac lymph nodes.

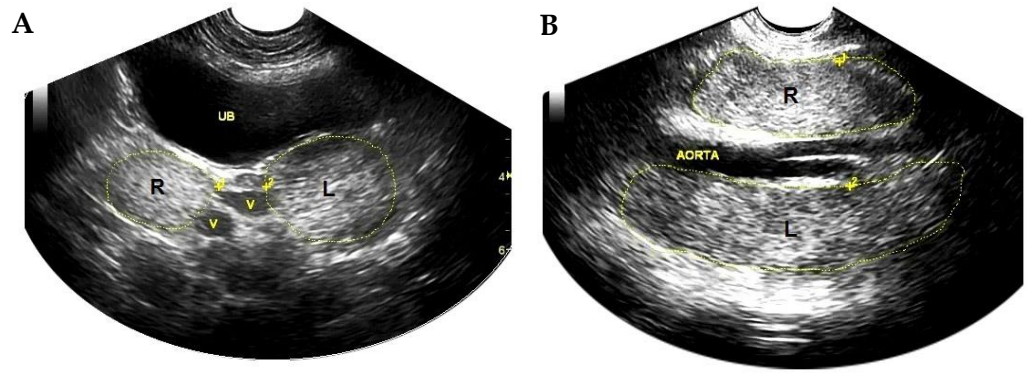

Figure 2 Schematics of the relative positions of the structures scanned in figure 1. UB –urinary bladder; V –external iliac vessels; R –right medial iliac lymph node mass; L –left medial iliac lymph node mass.

Diagnosis

Ultrasonographic diagnosis — Sublumbar metastatic seminomas.

Comments

Seminomas has the potential for metastases, especially to medial iliac lymph nodes. Focal sublumbar masses are mostly due to medial iliac lymphadenopathy. Ultrasonographic changes in size, shape, contour, echogenicity and Doppler flow patterns of lymph nodes have an association with malignancy (Llabres-Diaz, 2004). In canine, neoplastic lymphadenopathy is characterized as enlarged lymph nodes (the short/long axis ratio of the lymph node more than 0.5) with an irregular margin and heterogeneously hypoechoic (Nyman et al., 2004 and Kinns and Mai, 2007). Although these findings are not specific to the disease, abdominal ultrasound is considered a useful tool for establishing the diagnosis of the underlying disease, determining the extent of disease and giving a prognosis for treatment if used in conjunction with histopathology or cytology.

References

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