ULTRASOUND DIAGNOSIS

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History

A thirteen-year-old, spayed, Shih-Tzu dog was presented at the Chulalongkorn University, Small Animal, Veterinary Teaching Hospital for the investigation of a large lump on its back. The dog had a normal appetite and showed no clinical sign of abnormal gait. A complete blood count and a serum biochemistry profile were within the normal range, with the exception of mild elevation of ALP (268 units). The lesion was about 3 by 5 cm in diameter and fixed to the dorsal aspect of the thoracic wall. It was firm in consistency. Survey radiographs revealed a localized, lobulated, soft tissue mass. The mass was 7-cm in circumference and located at the right, dorsal aspect of the thoracic wall, at the level of the 5-10^{th} thoracic vertebrae. It was superimposed on some parts of the heart and lung. There was no evidence of any surrounding bone reaction. An ultrasonography was performed to confirm the intrusion of the mass into the intrathoracic cavity.

Ultrasonographic Findings

An ultrasonographic evaluation of the lesion was performed using a real time scanner with an 8-5 MHz broadband, convex, phased array transducer. From sagittal (Figure 1A and 2A) and transverse scans, a discrete 3.3 x 6.4 cm hypoechoic structure, with diffuse anechoic cavitation was seen to be located within the extrathoracic wall, just dorsal to the intact rib cage. The structure was surrounded by an echogenic capsule and did not invade beneath the intrathoracic wall. An ultrasound-guided, tissue-core biopsy from the lesion was obtained for a histopathological examination (Figure 1B and 2B).

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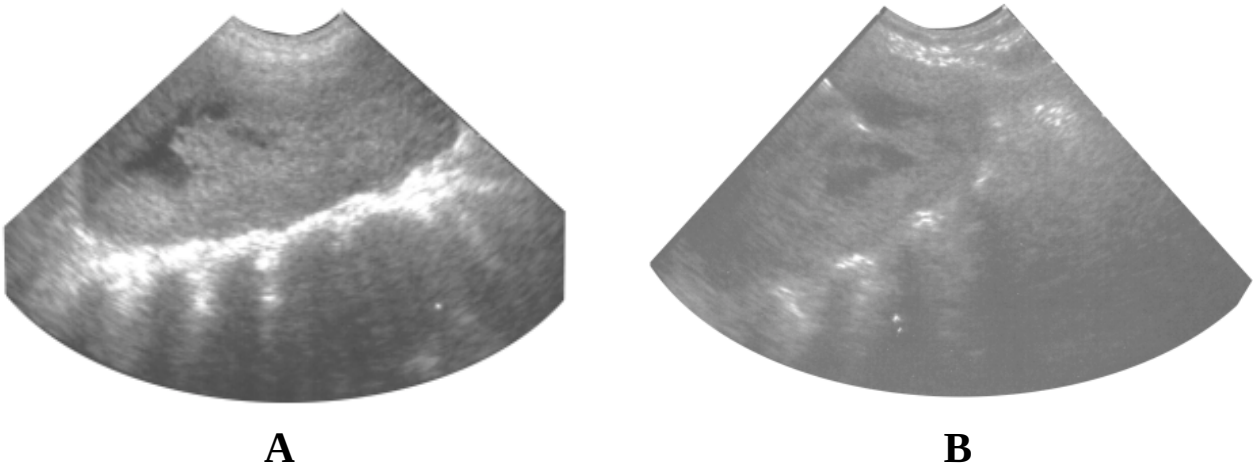

A B

Figure 1 Sagittal ultrasonograms of the extrathoracic wall mass of a 13-year-old in ventral recumbency. A. A hypoechoic mass, with diffuse anechoic cavitation and an echogenic capsule, was seen to be located just dorsal to the intact rib cage. B. An ultrasound-guided, tissue-core biopsy was obtained from the lesion. The position of the needle could be monitored continuously during insertion and at the actual time of biopsy.

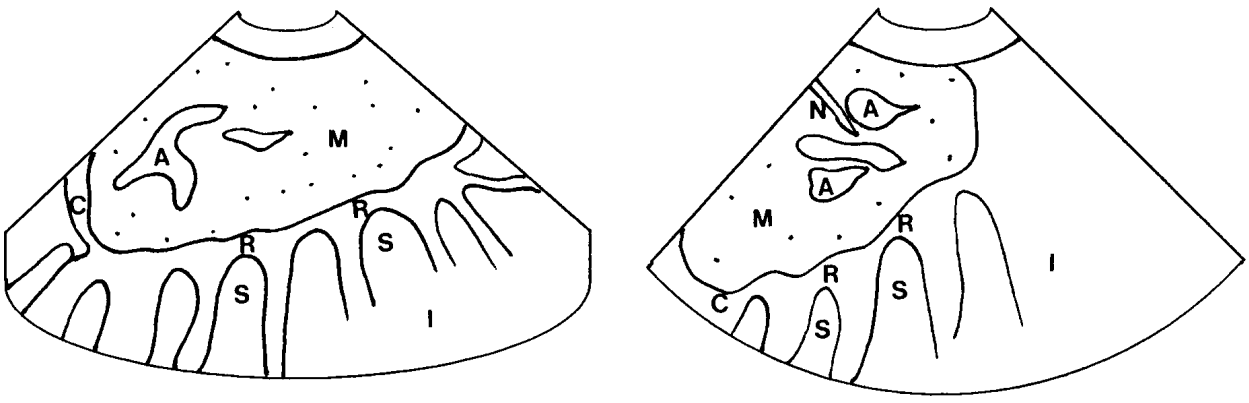

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Figure 2 Schematics of the relative positions of the structures scanned in figure 1. M -hypoechoic mass; A -anechoic cavitation; C -echogenic capsule; R -rib; S -distal acoustic shadowing; I -intrathoracic cavity; N -biopsy needle.

Diagnosis

Ultrasonographic diagnosis——Extrathoracic wall mass

Comments

It is sometimes not possible to localize a soft tissue mass accurately on a radiograph. In contrast, an ultrasonographic examination yields precise information about the size and location of a mass lesion. Using ultrasound in this dog, it was possible to rule out an intrathoracic presence with a high degree of certainty. This is an important factor in the management of such case.

The ultrasonographic features found in this dog were nonspecific, they may represent haematomas, abscesses, granulomas or neoplasia (Samii and Long, 2002). Tissue samples obtained from the lesion are necessary for diagnostic confirmation. Centesis or tissue-core biopsy can be performed safely under ultrasonographic guidance. A basal cell tumor was histopathologically diagnosed in this dog.

References

Samii V.F. and Long C.D. 2002. Musculoskeletal System. In: Small Animal Diagnostic Ultrasound. 2nded. T.G. Nyland and J.S. Mattoon (eds.) Philadelphia: W.B. Saunders Company. 267-284.