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ULTRASOUND DIAGNOSIS

Phiwipha Kamonrat*

History

A ten-year-old, intact male, crossbreed dog was presented at the Chulalongkorn University, Small Animal Veterinary Teaching Hospital showing inappetance and hindlimb weakness. Physical examination revealed that both inguinal lymph nodes were enlarged and a caudal abdominal mass was palpable. The results of hematology and serum chemistry profiles were in the normal range with the exception of elevated alkaline phosphatase (105

units). Blood morphology showed anisocytosis. Urinalysis indicated an inflammatory condition to be present (red blood cell +3, white blood cell +2, and bacteria +4). Urine pH was 6.0 and the urine specific gravity was 1.018. Survey radiographs revealed a narrowed intervertebral disc space at L₃-L₄. Spondylosis deformans were visible in the vertebral endplates of T₅- T₁₀, L₃-L₄ and L-S. A large soft tissue mass was present in the caudal abdomen.

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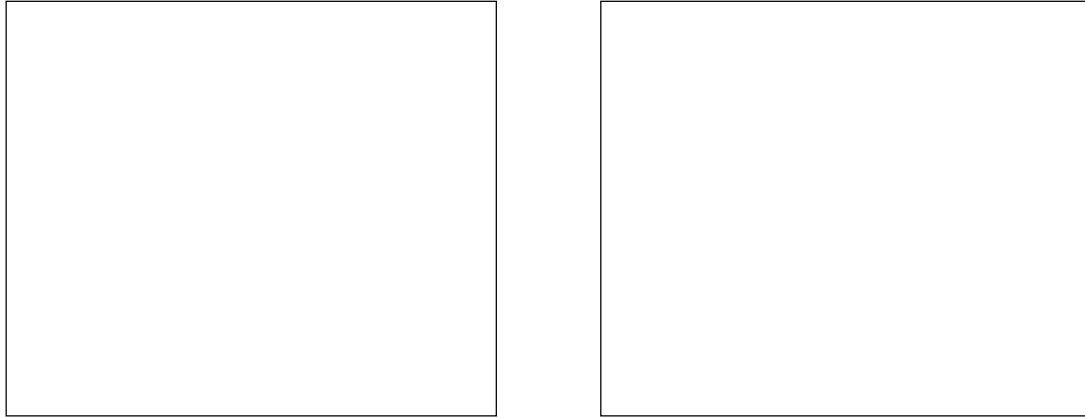


Figure 1 Sagittal (A) and transverse (B) ultrasonographic images of the paraprostatic cyst in a 10-year-old, intact male dog, in dorsal recumbency. A. A 5 by 12 cm anechoic, fluid-filled cyst, with a thick, smooth wall and internal septa, was located just caudal to the anechoic, fluid-filled urinary bladder. B. The cyst was located right and dorsal to the hyperechoic, enlarged prostate gland, 5.6 by 4.7 by 4 cm in diameter. Multifocal, irregularly shaped, anechoic cavities were present in both intraprostatic lobes.

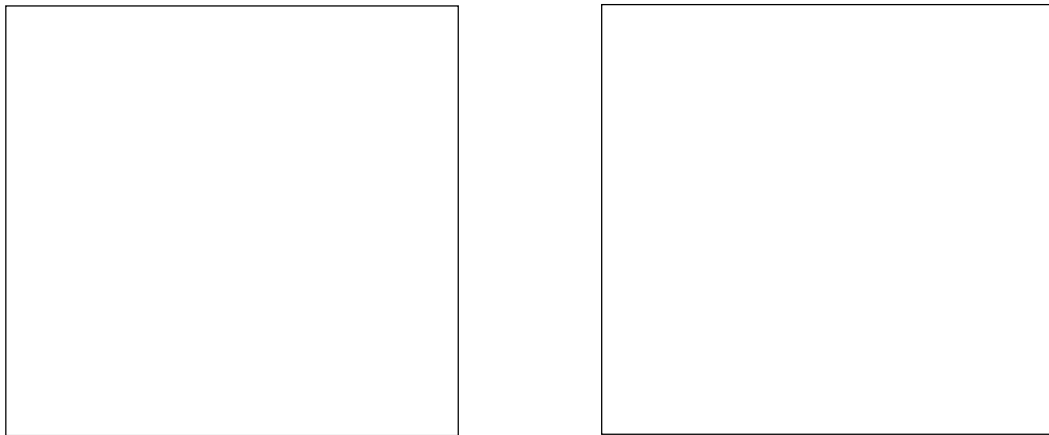


Figure 2 Schematics of the relative position of the structures scanned in figure 1. C-anechoic paraprostatic cyst; W-cyst wall; S-internal septum; U-anechoic urinary bladder; E-acoustic enhancement; P-hyperechoic prostate gland; A-anechoic cavity.

Ultrasonographic Findings

An ultrasonographic examination of the caudal abdomen was performed with the dog in dorsal recumbency using a real-time scanner. An 8-5 MHz broadband, convex, phased array transducer was used. With ventral abdominal prepubic scanning, the urinary bladder was seen fully distended with anechoic urine (figure 1A and 2A). The urinary bladder wall was smooth, echogenic, and 1.4 mm thick. Longitudinal and transverse scans of the prostate gland showed it to be enlarged, 5.6 by 4.7 by 4 cm in diameter. The gland was well defined from the surrounding tissues with a normal bilobed appearance (figure 1B and 2B). Multifocal, irregularly shaped, anechoic cavities were identified in both intraprostatic lobes.

A quite large, 5 by 12 cm, anechoic fluid-filled structure was located right and dorsal to the prostate gland. This structure had a thick, smooth wall and internal septa and contained a few focal echogenicities.

Diagnosis

Ultrasonographic diagnosis—Paraprostatic and prostatic cysts.

Comments

Ultrasonography is of considerable value in evaluating the normality of prostatic parenchyma compared with focally hypoechoic or anechoic parenchyma, associated with retention cysts or abscesses and radiographic prostatomegaly caused by neoplasia or paraprostatic cysts (Feeney et al., 1987). Prostatic cystic lesions in dogs are associated with prostatic hypertrophy or squamous metaplasia,

retention cysts, and paraprostatic cysts (McEntee, 1970). The ultrasonographic appearance of paraprostatic cysts typically shows as large anechoic structures, which are located cranially and/or dorsally to the prostate gland or the bladder trigone (Stowater and Lamb, 1989). Cyst walls may be thin, thick, smooth, or irregular, with or without hyperechoic internal septa. The cyst may contain anechoic, hyperechoic, or a mixture of hypoechoic and hyperechoic contents, demonstrated as hyperechoic echoes in the dependent portion of the cyst and capped by hypoechoic fluid. Intraprostatic anechoic cavities, which represent parenchymal retention cysts, small abscesses, or an area of necrosis, may be present in some dogs with paraprostatic cysts. Some of these cavities may communicate with the cyst. However, there are no specific ultrasonographic features to differentiate septic from nonseptic paraprostatic cysts.

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