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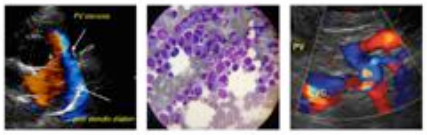

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Clinical Sonography & Telecytology
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PATIENT

Slim Roberts

SPECIES

Canine

BREED

Shepherd Mix

SEX

Neutered Male

AGE

13 years

WEIGHT

60 Pounds

INTERPRETED BY

Lisa Carioto, DVM, DVSc, Diplomate ACVIM

IMAGING PERFORMED BY

Amy Mayhew LVT

HOSPITAL NAME

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INVOICE

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PRESENTING CLINICAL SIGNS

History: 0/22/20 Blood Panel for a dental procedure revealed elevation in ALT:153 (131-345). Started on Denamarin 425mg SID Previously on long term NSAID use for lameness. Ursodiol 250mg SID started 6-15-21 11/17/22 Recheck ALT: 238 once off NSAIDs. Added Tramadol and low dose of Gabapentin 100mg 1BID. 12-2-20 ALT:259 12-29-20 Recheck BW 216 once started Denamarin 425mg SID. 3-15-21 ALT 192 after Denamarin. Doing very well. 6-15-21 ALT:281. 7-26-21 ALT : 199, ALKP: 317. Stable for a long time. 4-4-22 Exam polyuria/polydipsia reported by owner. BW sent to Idexx and abdomen radiographs performed. Liver enlarged and abdomen shape concerned about possible mass. Referral for ultrasound.
Abnormal PE/Chem/CBC/UA Results: See attached BW and rads.

ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN

Urinary System

The urinary bladder is inadequately filled; however the wall is mildly to moderately irregular. No abnormalities are present with the trigone or proximal urethra, and there is no evidence of polyps, or a mass. Based on the appearance of the urinary bladder, a bacterial cystitis is suspected. A urinalysis, culture and sensitivity are recommended.

The trifurcation revealed no abnormal findings.

The left kidney measures at least 6.6 cm (within normal limits). A 0.38 cm cyst is noted. The pelvis measures 0.26 cm in the transverse view. The capsule is smooth. Its overall architecture, including the definition of the cortico-medullary junction, are well preserved for a dog of Slim's age. Very mild diverticular mineralizations are observed, without signs of nephroliths or pyelectasia, in addition to mild accumulation of fat within the pelvis. Striations of mineralization with the cortex. The surrounding mesentery is not hyperechoic.

The right kidney measures 6.46 cm (within normal limits). A 0.54 cm cortical cyst is observed in the transverse view. Findings are similar to the left.

Adrenal Glands

The left adrenal gland measures 0.57 cm at the cranial pole, 0.50 cm at the caudal pole and 2.30 cm in length. No abnormalities are noted with the gland's shape, overall architecture, echogenicity or echotexture. The phrenico-abdominal vein and surrounding vasculature and mesentery are unremarkable.

The right adrenal gland measures 0.43 cm at the cranial pole, 0.44 cm at the caudal pole and 2.00 cm in length. No abnormalities are noted with the gland's shape, overall architecture, echogenicity or echotexture. The phrenico-abdominal vein and surrounding vasculature and mesentery are unremarkable.

Spleen

The spleen is within normal limits in size, architecture, echotexture, and echogenicity. The capsule is smooth. No abnormalities are observed with its vasculature, i.e. congestion and thrombi are not identified.

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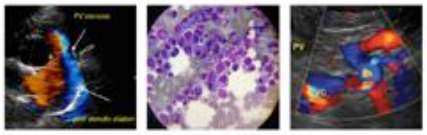

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Liver

A severely heterogenous, "honeycomb" type pattern is observed in the left sagittal view of the liver. Hepatomegaly is present. A similar pattern is observed from the right sagittal view. A different echotexture is present in the caudate lobe. Two target lesions are present. One measures 8.6 mm x 8.8 mm. Other lesions appear to be blood vessels surrounded by hyperechoic walls. The caudate lobe shows multiple target lesions (hypoechoic center surrounded by a hyperechoic wall) are visualized. One of the lesions measures 1.4 cm in diameter x 1.2 cm in length. In the transverse view, the caudate lobe appears as a mass effect with irregular borders and measures 5.3 cm in diameter 7.1 cm in length with both cavitary lesions and additional target lesions. Two of these lesions are evaluated with Doppler and are not vascularized. The "honeycomb" appearance of the liver lobes may be due to severe nodular hyperplasia and regeneration, although hepatomegaly does not usually develop with cirrhosis. However, the appearance of the caudate liver lobe is highly suspicious for neoplasis. A carcinoma or adenocarcinoma must be high on list of differential diagnoses. A sarcoma cannot be excluded.

The gall bladder is mildly dilated. A moderate amount of echogenic material (sludge) is present within the lumen. The sludge is free floating, but has also settled by gravity. The sludge casts an acoustic shadow; therefore, cholelithiasis is present. Inspissated, hyperechoic sludge, in the form of nodules, are attached to the wall. There are no signs of an obstruction.

Gastrointestinal

A large amount of gas is present in the stomach and may affect visualization of certain organs, particularly the liver.

The gastric wall and pylorus are within normal limits in thickness. There is no loss of definition of the normal architecture of the wall layers. No obvious abnormalities are observed with its peristalsis. The duodenum is normal.

The small intestinal wall thickness is within normal limits and the definition of the wall layers is preserved.

Dilated loops of bowel are not observed. The colonic wall is not thickened and mural detail is considered normal. There are no obvious signs of a mass, foreign body, infiltrative disease or an obstruction.

Pancreas

The pancreas has a coarse echotexture and is mildly heterogeneous. These changes are most likely due to nodular hyperplasia and areas of fibrosis, which are considered secondary to age and possibly to previous episodes of pancreatitis, respectively. There are no signs of active pancreatitis or neoplasia.

Other:

Lymph nodes: No abnormalities are observed.

Abdominal effusion is not visualized.

ULTRASONOGRAPHIC FINDINGS

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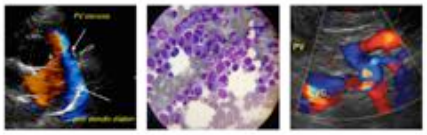

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Although the appearance of the majority of the liver lobes may be due to nodular hyperplasia, regeneration and fibrosis, neoplasia is considered the most likely diagnosis based on the appearance of the caudate liver lobe. A carcinoma or adenocarcinoma and a sarcoma are differential diagnoses.

Very mild degenerative changes of both kidneys, which are suggestive of age related degeneration.

Nodular hyperplasia and fibrosis of the pancreas are suspected, both of which are age-related changes, with or without fibrosis caused by previous episodes of pancreatitis. There are no signs of active pancreatitis or neoplasia.

Multiple small cystoliths are present within the urinary bladder. There are no signs of an obstruction

A urinary tract infection cannot be excluded based on the irregular mucosa of the bladder wall and the presence of the cystoliths.

Although the presence of gall bladder sludge is most likely clinically insignificant, some dogs may show clinical signs of gastroesophageal reflux disease, therefore, obtaining a history regarding signs of GERD from the client is suggested. Furthermore, cholestasis may be present due to cholelithiasis. Cholecystitis cannot be excluded despite the absence of sonographic signs.

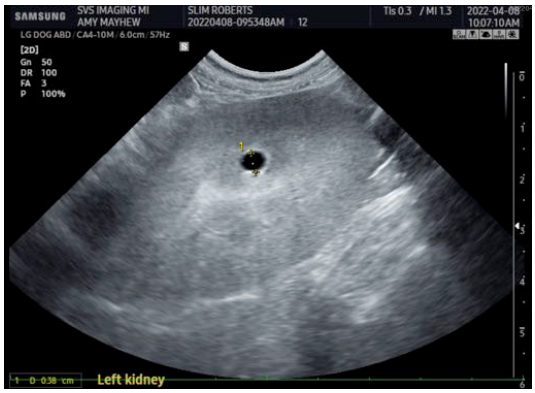
INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

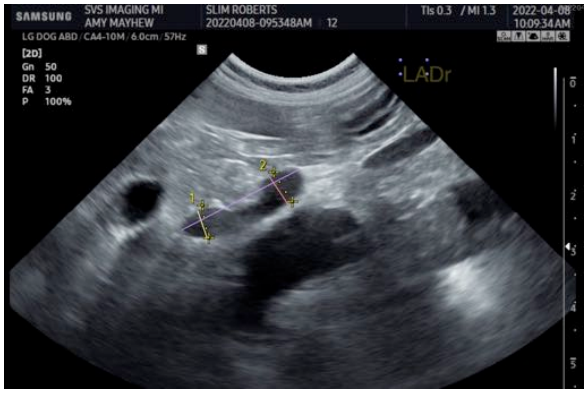
A urinalysis and urine culture and sensitivity are recommended to exclude a urinary tract infection due to the mildly irregular bladder wall and presence of cystoliths.

A coagulation profile is recommended prior to performing a FNA. Administration of vitamin K (0.5 mg/kg SQ q8-12h for 1-3 doses) is suggested even if the results of the PT/PTT are within normal limits.

One can consider administering a hepatic diet to determine whether or not decreased dietary copper will help control PU/PD and possibly slow down the progression of clinical signs.

Referral to a veterinary oncologist is suggested.





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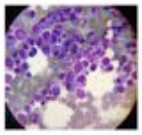


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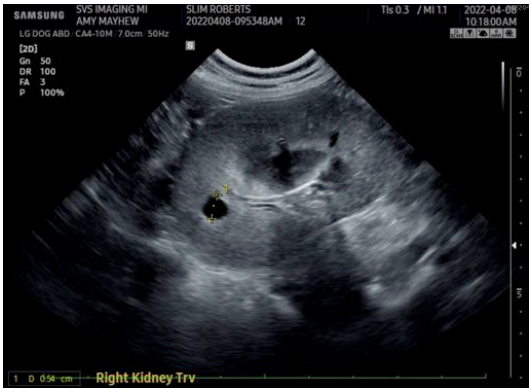

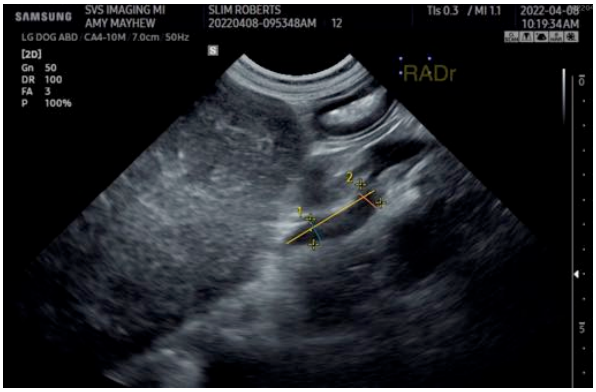

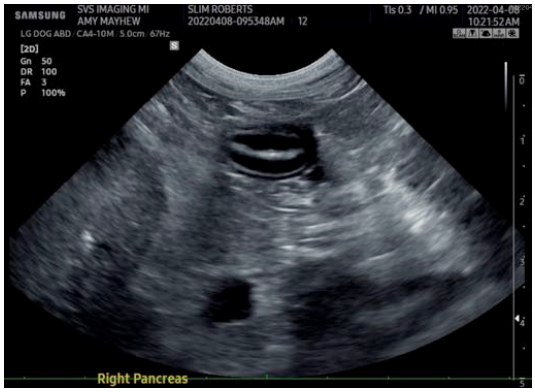

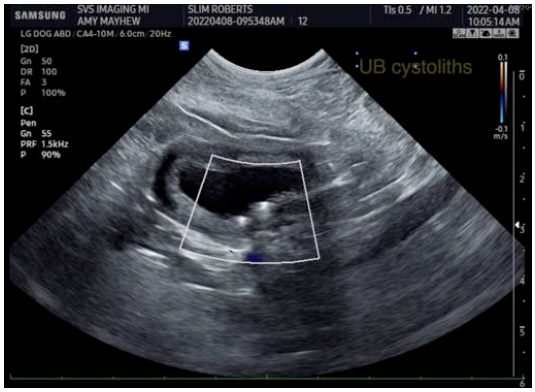

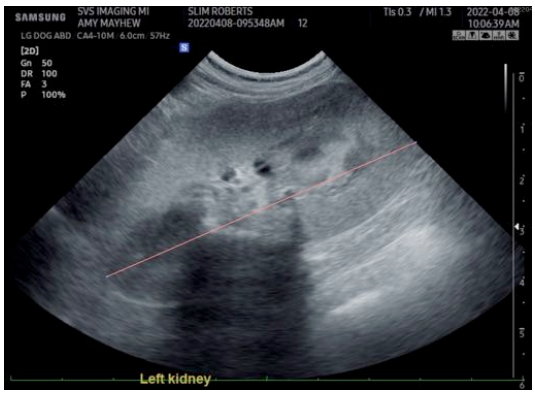

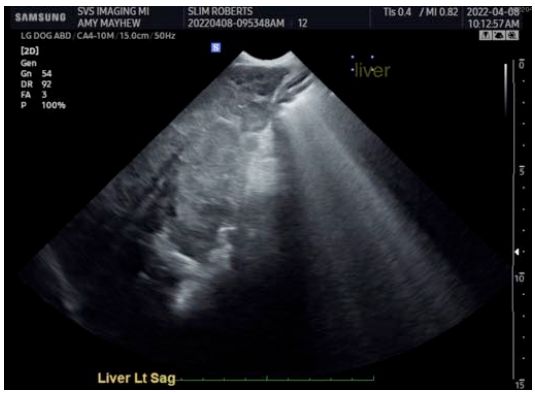

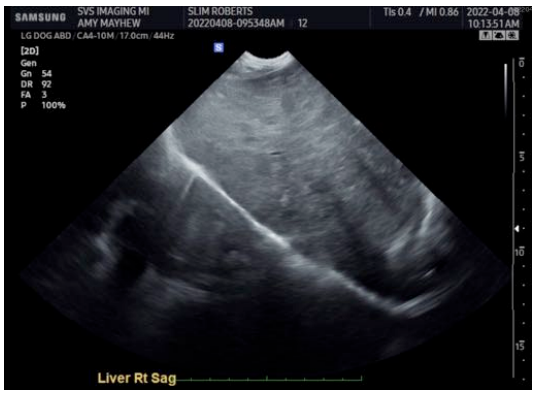

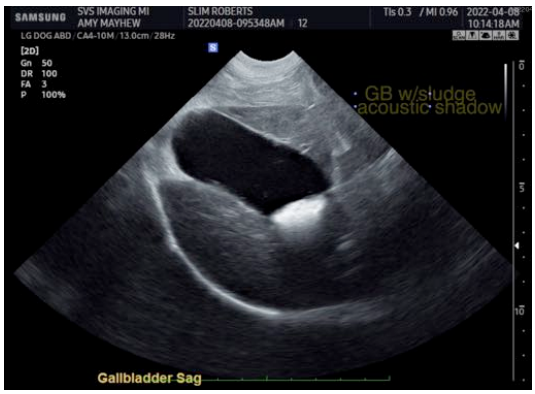

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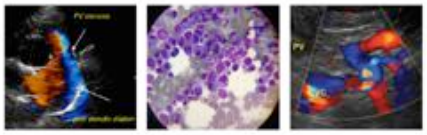

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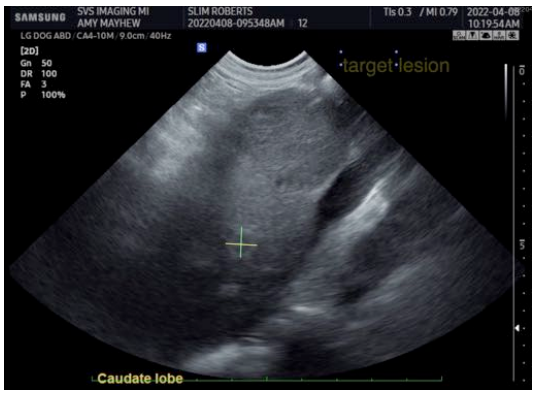

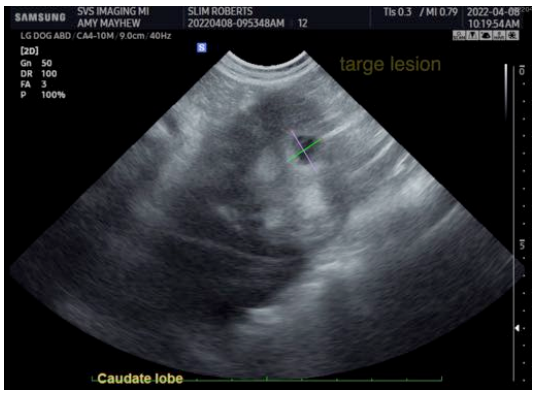

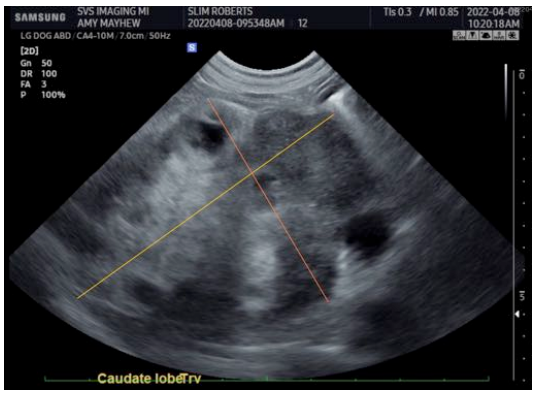

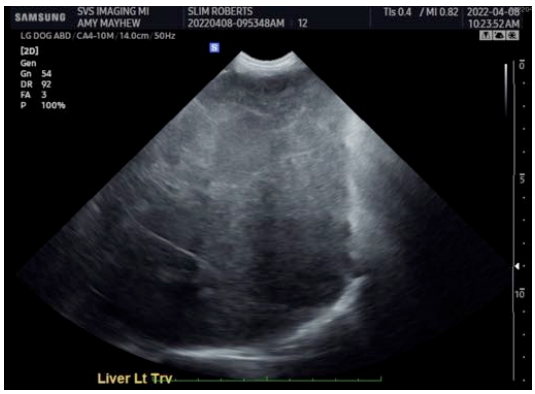

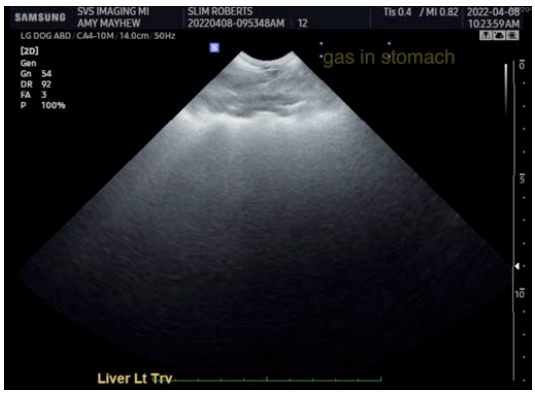

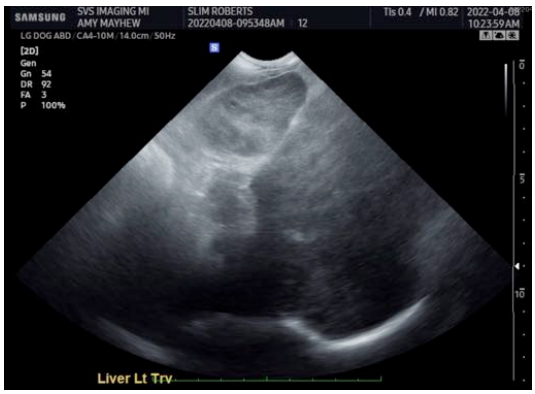

The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

Thank you for this referral. If the clinical or image interpretation does not parallel your findings or if I can be of any further assistance please contact me.

Lisa Carioto, DVM, DVSc, Diplomate ACVIM

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