



PATIENT PRESENTING CLINICAL SIGNS

Beau Lecuyer 2 year history of elevated (yet stable) ALT and ALP. This year both are higher. Hepatosupport daily. Xrays revealed enlarged liver.
Abnormal PE/Chem/CBC/UA Results: Urine pH 6.5, trace protein, UPCr 0.2(0.1-0.2) Sp grav 1.025.
ALP 591, ALT 705, Cholesterol 12.3, Lipemia 2+, platelets high

SPECIES

Canine

ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN

BREED

Urinary System

Maltese X Shih Tzu

The urinary bladder is moderately distended with mild primarily suspended echogenic debris present. The Bladder wall, trigone, ureteral papillae and visible urethra (to a depth of 2cm) appear normal with no evidence of wall thickening, mucosal irregularities, masses or calculi. Echogenic debris of this type can be associated with small crystals, cellular debris and proteinaceous debris.

SEX

Neutered Male

The prostate is normal in size (0.51 cm) and shape for this neutered male dog. The parenchyma is homogenous and the external margins are smooth. The prostatic urethra appears normal with no evidence of irregularity, invasion, mass effect or calculi.

AGE

12 Years

The left kidney has a normal shape and size (4.3 cm). Overall echogenicity is normal with adequate corticomedullary distinction and a typical 1:3 cortex:medulla ratio. There is no evidence of perinephric inflammation or effusion. There is no evidence of pyelectasia, nephroliths, infarcts or hydroureter. Renal vasculature is normal.

WEIGHT

7.2 kg

The right kidney has a normal shape and size (4.9 cm). Overall echogenicity is normal with adequate corticomedullary distinction and a typical 1:3 cortex:medulla ratio. There is no evidence of perinephric inflammation or effusion. There is no evidence of pyelectasia, nephroliths, infarcts or hydroureter. Renal vasculature is normal.

INTERPRETED BY

Kathleen Sennello DVM,
MS, Diplomate ACVIM
(Small Animal Internal
Medicine)

Adrenal Glands

The left adrenal gland is normal in size measuring 0.35 cm at the caudal pole. It is observed in its normal position cranial to the left renal artery. It is normal in appearance (uniformly hypoechoic) and shape with no evidence of a mass effect.

IMAGING PERFORMED BY

Crystal Hill

The right adrenal gland is normal in size measuring 0.49 cm at the caudal pole. It is observed in its normal position between the cranial aspect of the right kidney and the caudal vena cava. It is normal in appearance (uniformly hypoechoic) and shape with no evidence of a mass effect.

HOSPITAL NAME

Hawkins AH

Spleen

The spleen is subjectively normal in size, echotexture is homogenous, and the splenic capsule is smooth with no irregularities. The blood flow through the hilus and splenic parenchyma appears normal. No focal parenchymal abnormalities are visualized.

REFERRING VET

Dr. Hawkins

Liver

The liver is large and irregular. The parenchyma is heterogenous in echotexture with subtle, indistinct focal mottling. The visible portions of the vasculature and biliary tract appear normal. The liver is diffusely irregular and severely heterogeneous with too numerous to count ill-defined, hypoechoic nodules varying in size from 0.25-1.5 cm. Some areas of the liver appear more nodular than other, particularly a more hyperechoic region measuring 4.58 cm x 5.5 cm on the left, which is somewhat rounded, almost creating a bulge or mass effect. Additionally, the caudate lobe appears markedly nodular.

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PATIENT

Beau Lecuyer

The gallbladder lumen is moderately distended. The wall of the gall bladder is not thickened and has a smooth mucosal surface. Luminal contents are primarily anechoic. The cystic and common bile ducts are normal/not visible.

SPECIES

Canine

Gastrointestinal

The stomach contains minimal luminal contents. It measures at a normal thickness of <0.7cm with some variability due to the presence of rugal folds. The distinction of the gastric wall layers is adequate and there is no impression of reduced peristaltic activity. No masses or focal lesions were observed.

BREED

Maltese X Shih Tzu

The visualized areas of duodenum, jejunum and ileum have a relatively uniform diameter with minimal fluid distension. Wall thickness is normal. Bowel loops follow a curvilinear path with distinct wall layering maintaining the typical 1:3 muscularis:mucosa layer ratio. The duodenum measured as normal (between 0.3-0.5cm in wall thickness) and the jejunum measured as normal (between 0.2-0.47cm.)

SEX

Neutered Male

Visualized peristalsis appears appropriate. There were no focal lesions consistent with obstruction or a mass effect observed.

AGE

12 Years

The ileocecal junction was visualized and exhibited normal intact wall layering and is subjectively of normal thickness. Sections of colon are visualized with formed fecal material and gas shadowing distally. There is no observed focal or generalized colon wall thickening or loss of layering.

Pancreas

WEIGHT

7.2 kg

The pancreas is normal and isoechoic to surrounding mesentery. There is no evidence of nodules or cystic lesions. There is no evidence of regional mesenteric inflammation or fluid.

Free Abdomen

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Evaluation of the peritoneal cavity did not reveal any evidence of effusion, or subjective lymphadenomegaly. The Medial iliac nodes appear normal and there was no evidence of a caudal aortic thrombus at the bifurcation. The omentum is of normal uniform echogenicity.

ULTRASONOGRAPHIC FINDINGS

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Crystal Hill

- Large, severely heterogeneous/nodular liver with a hyperechoic, rounded area, creating a mass effect – The diffuse hepatic changes are non-specific and could be consistent with vacuolar hepatopathy, nodular hyperplasia, inflammatory/immune-mediated disease, fibrosis, extramedullary hematopoiesis, toxic hepatopathy (e.g., copper), infiltrative neoplasia (less likely) or other hepatopathy. The changes observed could very well be benign lesions. An underlying neoplastic process cannot be excluded as a possibility.
- Echogenic debris in the urinary bladder – The echogenic debris in the bladder lumen could be consistent with cells, crystals, and/or mucus.

HOSPITAL NAME

Hawkins AH

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

REFERRING VET

Dr. Hawkins

The liver appears irregular and heterogeneous with ill-defined nodules. Some regions of the liver appear rounded and bulging, almost creating a mass effect. These are my recommendations for a liver enzyme elevation with a lack of definitive focal hepatic lesion. If cytology is pursued, consider sampling several different regions of the liver.

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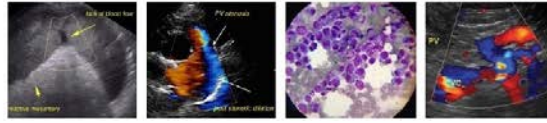
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- Consider close evaluation of history for possible toxic changes examine medications, diet, dietary indiscretion etc...

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- Consider PCR on urine/serum for leptospirosis (if not on antibiotics)/serology if recent antibiotic history



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REFERRING VET

Dr. Hawkins

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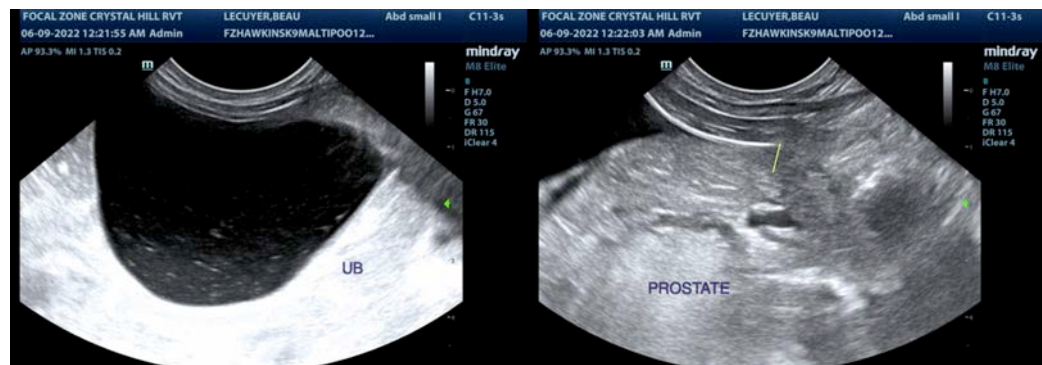
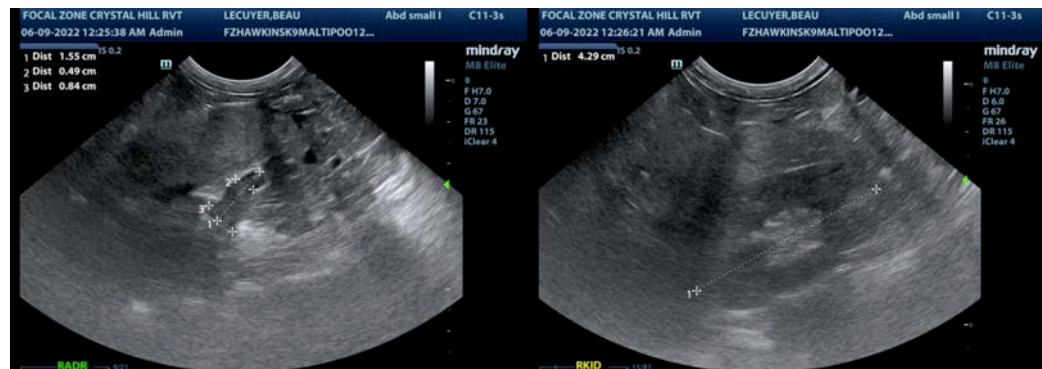
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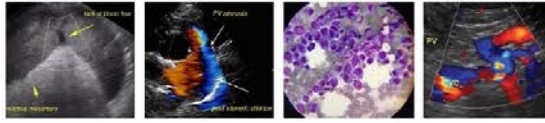
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- If not already done, consider pre and post prandial bile acids to evaluate liver function
- Consider Fine needle aspirate if round cell neoplasia is on your differential list (25 g needle, normal coags)
- If no response to medical care (denamarin, antibiotics,+/- ursodiol etc...) Consider liver biopsy with samples obtained for histopathology, culture, and copper levels.

Consider three view thoracic radiographs to rule out concurrent thoracic disease/involvement.

If more information is desired to determine if the bulging areas could be more discrete mass effects, then a contrast CT scan could be considered to determine if surgical options are available.





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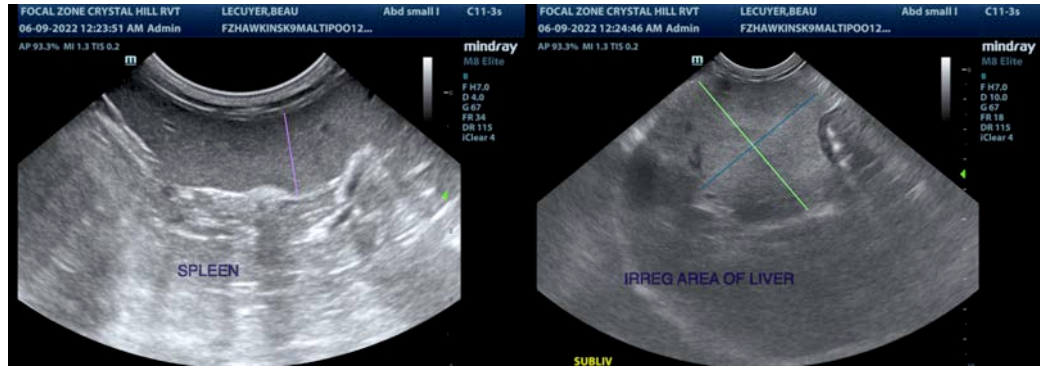
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The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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.

Kathleen Sennello DVM,MS, Diplomate ACVIM (Small animal Internal Medicine)

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