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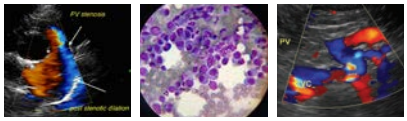

SonoPath
Clinical Sonography & Telecytology
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DATE

9/30/21

PATIENT

Martini Richmond

SPECIES

Canine

BREED

Maltese X

SEX

Spayed Female

AGE

2011

WEIGHT

13 Pounds

INTERPRETED BY

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

HOSPITAL NAME

North Laurel AH

REFERRING VET

Dr. Cohn

INVOICE

25976

PRESENTING CLINICAL SIGNS

Alk Phos has jumped back up to 1316 and according to Dawn she is drinking more (she feels it's due to the heat but last week it was in to low 70s or upper 60s and it was not humid. She also said she is having more difficulty going on her long walks because she drinks so much. I told her that w the Reticulocytosis, Hypercholesterolemia, elevated Alk phos, U/P:C of 2.1 (down from 3.7) I told her increase the benazepril to 1 5 mg in AM and 1/2 5 mg in PM and we should recheck her U/P:C 2-3 and then consider MEASURING HER WATER CONSUMPTION BOTH AM AND PM so we can see if she really is PD and if sp we should retest for Cushings' Disease (BC).

Current Medications: Benazepril 5mg - 1.5 tablets daily
Lab Results & Radiographs: See attachment.
Date of Previous IntraPet Ultrasound: No previous.
Sedation: Not needed.
Stat Report: Not requested.

ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN

Urinary System

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, or masses. Echogenic debris of this type can be associated with small crystals, cellular debris and proteinaceous debris. There are numerous small shadowing calculi/sandy, mineralized debris evidence in piles in the urinary bladder, and as isolated small stones in the urethra, measuring approximately 0.3 cm.

The left kidney has a normal shape and size (3.9 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. Small, rare, non-obstructive nephrliths. There is no evidence of pyelectasia, infarcts or hydroureter. Renal vasculature is normal.

The right kidney has a normal shape and size (4.69 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. Small, non-obstructive nephroliths are present. There is no evidence of pyelectasia, infarcts or hydroureter. Renal vasculature is normal.

Adrenal Glands

The left adrenal gland is normal in size measuring 0.46 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.

The right adrenal gland is normal/borderline large in size measuring 1.02 cm at the cranial pole, 0.43 cm at the caudal pole, and 1.7 cm in length. 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.

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.

Liver
The liver is large size, and echogenicity with smooth peripheral margins. The parenchyma is heterogenous in echotexture with subtle, indistinct focal mottling. The visible portions of the vasculature and biliary tract appear normal. No focal nodules or cystic lesions are observed.

The gall bladder lumen is moderately distended. The wall of the gall bladder is not thickened and has a smooth mucosal surface. There is a mild amount of non-organized echogenic debris. The cystic and common bile ducts are normal/not visible.

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.

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. Duodenum wall measured 0.42 cm. Jejunum wall measured 0.31 cm. Visualized peristalsis appears appropriate. There were no focal lesions consistent with obstruction or a mass effect observed.

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
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
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.

PRIMARY FINDINGS

- Large, heterogeneous liver – 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.

- Small mineralizations/calculi in the urinary bladder and urethra – These mineralizations are mobile, and I suspect are moving between the urethra and bladder. Recommend radiographs to better evaluate number and size. Many of the smaller stones could likely be passed.

SECONDARY FINDINGS

- Borderline enlarged right adrenal gland – I suspect this is a normal variation, as it is very mildly enlarged. Recommend continued monitoring.

- Rare, non-obstructive nephroliths in both kidneys – The hyperechoic mineralized foci observed at the corticomedullary junction of the left and right kidney are consistent with small, non-obstructive nephroliths.

- Mild/moderate gallbladder debris – The significance of the aggregated gallbladder sludge is unclear. This could represent an early mucocele, cholestasis, or may be secondary to fasting.

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

The two most likely differentials for the elevation in the ALP are a primary hepatopathy or endocrine disease. This is how I approach a primary ALP elevation.

- Induction phenomena is the most common cause for an elevated ALP. These are systemic illnesses that 'turn on' the liver enzyme. Causes of this include Cushing's disease, dental disease, arthritis, and numerous others. In many cases the exact cause is unclear but as long as ultrasound and bile acids tests are normal most patients do not have progressive changes in their liver. While liver biopsy is not routinely performed, vacuolar hepatopathy, is noted on most biopsies. This is often non-progressive but in rare cases can be more severe and lead to liver failure.

- If signs of cushings disease are present recommend endocrine function testing to evaluate for cushings disease.

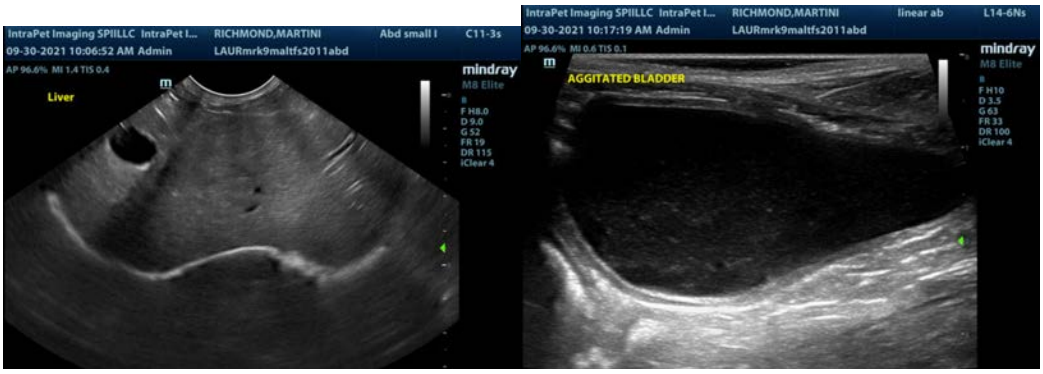
- Consider fine needle aspirate to rule out round cell neoplasia -if this is a concern.

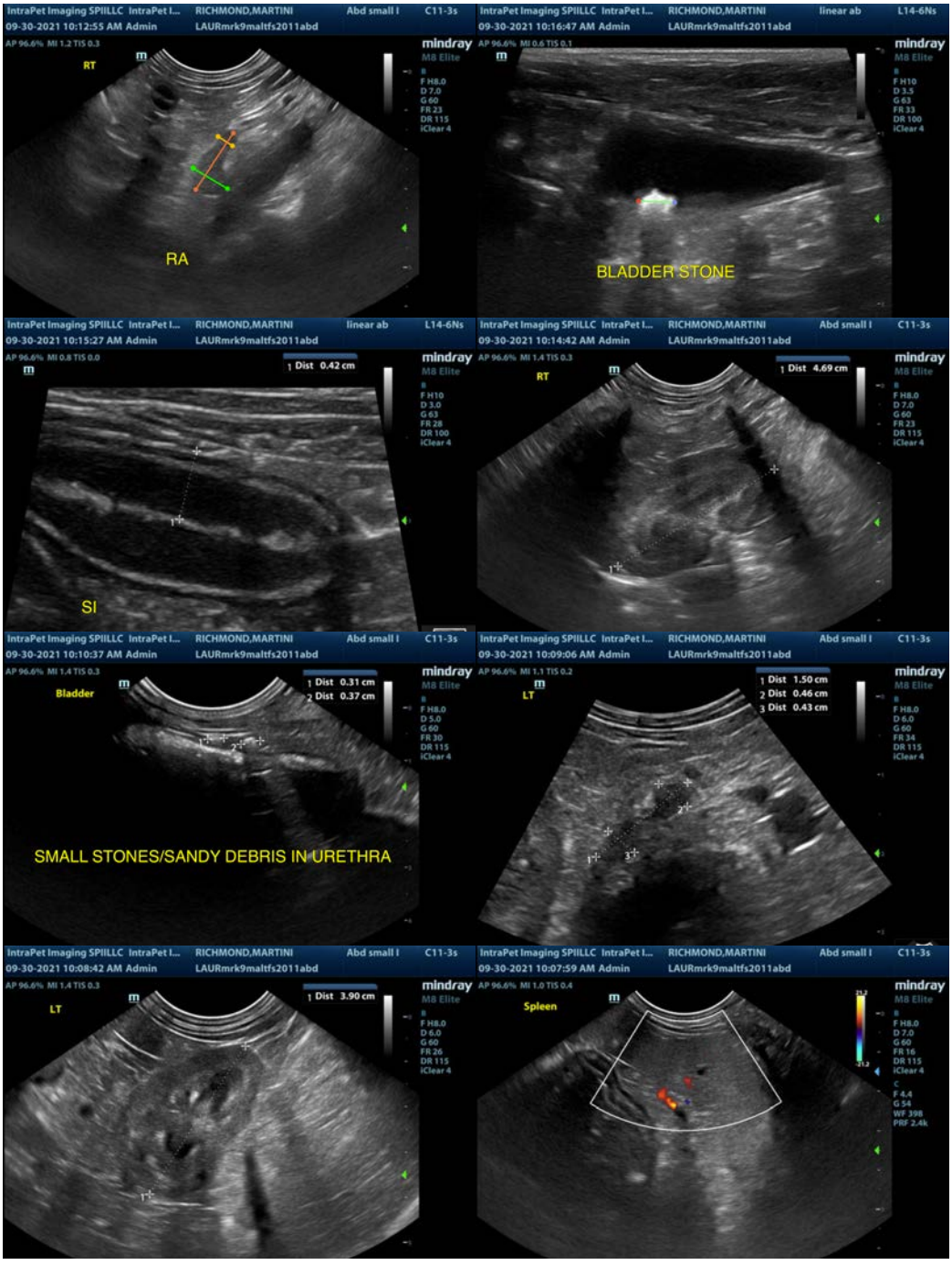
- If a cause for the ALP elevation is not identified: I recommend recheck general blood work every 6 months, ultrasound once per year, and bile acids test every 1-2 years based on other results. If the ALP continues to climb a biopsy could be considered.

- Consider long term use of denamarin, and monitoring for the signs of cushings developing.

- A primary vacuolar hepatopathy can be breed related and is seen in Scottish Terriers, Schnauzers, Cocker spaniels etc.

Additionally, there are small stones within the urinary bladder and urethra. These are small enough to also potentially be piles of sandy debris. Correlate these findings with radiographs to better evaluate the numver and size of the calculi, and if intervention is needed, recommended urinalysis and culture. The medical plan provided in the history sounds like a good plan, particularly the confirmation of PU/PD, as the urine appears mildly concentrated.

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RT
RA
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BLADDER STONE
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Dist 0.42 cm
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RT
Dist 4.69 cm
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Bladder
Dist 0.31 cm
Dist 0.37 cm
SMALL STONES/SANDY DEBRIS IN URETHRA
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LT
Dist 1.50 cm
Dist 0.46 cm
Dist 0.43 cm
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LT
Dist 3.90 cm
IntraPet Imaging SPIILLC IntraPet I... RICHMOND,MARTINI Abd small I C11-3s
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Spleen
mindray
M8 Elite

The information and recommendations provided are based on the images presented by the referring veterinarian. 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.

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