IMAGING PERFORMED BY

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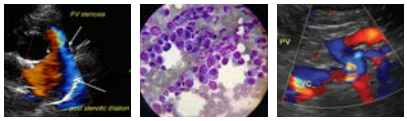

SonoPath
Clinical Sonography & Telecytology
EDUCATIONAL TELECONSULTATION SERVICES™
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DATE

7/18/23

PATIENT

Sparrow Falkenhan

SPECIES

Canine

BREED

Chihuahua

SEX

Spayed Female

AGE

9/21/20

WEIGHT

5.56 Pounds

INTERPRETED BY

Beth Johnson, DVM DACVIM

HOSPITAL NAME

Banfield Abingdon

REFERRING VET

Dr. Simpson

INVOICE

44086

PRESENTING CLINICAL SIGNS

Ongoing intermittent anorexia. Has had ongoing hepatopathy. Previous acute kidney injury/azotemia. Most recent bloodwork performed on 6/21/23 shows elevated ALKP (434 U/L) and mildly elevated GLOB (4.8 g/dL). Previous ultrasound showed sludge in gallbladder and enlarged liver

Current Medications: Currently on Denamarin (0.25 sm-md tab SID), Ursidiol (0.4 mL SID), Cerenia (1/4 24mg tab SID)
Lab Results: Most recent bloodwork performed on 6/21/23 shows elevated ALKP (434 U/L), mildly elevated GLOB(4.8 g/dL), mildly elevated ALT (202 U/L) and elevated platelet count (561)
Date of Previous IntraPet Ultrasound: 8/26/22. See attached.
Sedation: Not required to complete full diagnostic ultrasound.
Stat Report: Not requested.
Imaging Performed By: Stephanie Warga RDCS, RVT.

ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN

Urinary System

The urinary bladder is moderately distended with anechoic urine. 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 cystic calculi.

The left kidney is small, measuring 1.95 cm, with decreased corticomedullary distinction and moderate sized non-obstructive nephroliths, as well as pyelectasia at 0.34 cm. A small cortical cyst is noted measuring 0.48 cm. There is no evidence of focal perinephric inflammation or effusion. There is no evidence of infarcts or hydroureter. Renal vasculature is normal.

The right kidney is slightly small at 2.17 cm, with pyelectasia at 0.34 cm and occasional small non-obstructive nephroliths/mineralizations. Overall echogenicity is slightly hyperechoic with poor corticomedullary distinction and a typical 1:3 cortex:medulla ratio. There is no evidence of focal perinephric inflammation or effusion. There is no evidence of infarcts or hydroureter. Renal vasculature is normal.

Adrenal Glands

The left adrenal gland is normal in size measuring 0.48 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 in size measuring 0.43 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.

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. There is a small hypoechoic nodule visualized within the parenchyma measuring 0.80 cm x 0.60 cm (previous measurement from 8/26/22 was 0.70 cm x 0.40 cm).

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. There are numerous

moderately sized, ill-defined, hypoechoic nodules throughout the parenchyma. Examples measure 1.64, 1.8, and 1.82 cm.

The gall bladder lumen is significantly distended. Some areas of the wall appear mildly thickened with adherent debris and there is organization and stranding of this debris into a mucocele. There is minimal surrounding inflammation and no obvious free fluid observed. The bile duct is normal/not visible. Findings are consistent with a mucocele. Consider close monitoring and initial medical management.

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 measures 0.42 cm. Jejunum wall measures 0.37 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.

Other

The right auricle and pericardium were visualized and were unremarkable. No obvious pathology is visualized. If cardiac function evaluation is desired a full echocardiogram is warranted.

ULTRASONOGRAPHIC FINDINGS

- Small, slightly irregular kidneys with decreased corticomedullary distinction and non-obstructive nephroliths and mild pyelectasia – Mild loss of corticomedullary distinction in both kidneys could be consistent with chronic degenerative disease or interstitial nephrosis. Pyelectasia of the kidney(s)could be consistent with pyelonephritis, chronic renal disease, secondary to PU/PD or fluid therapy (if applicable), other.

- Small hypoechoic splenic nodule – There is a non-cavitated, hypoechoic splenic nodule visualized. Differentials include lymphoid hyperplasia, extramedullary hematopoiesis, infiltrative neoplasia, inflammation, other. Cytology or histopathology would be necessary to get a definitive diagnosis. This lesion appears similar in size to the previous scan on 8/26/22.

- Large heterogeneous liver with numerous moderate sized, ill-defined hypoechoic nodules – 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 nodules observed trend toward a more benign process but underlying neoplasia cannot be ruled out.

- Distended gallbladder with a large amount of intraluminal debris and early organization of the debris – The gall bladder changes are most consistent with a developing mucocele. Consider medical management and close monitoring for progression of this lesion.

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

Many of the changes described on today's exam were previously described on the scan performed 8/26/22 and appear similar or have mildly progressed.

The significance of the hypoechoic nodules in the liver is uncertain. The appearance trends towards a more benign lesion, but there are numerous nodules and they are slightly larger than the typical regenerative nodule. Consider the following for further evaluation:

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

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

- 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 differentia list (25 g needle, normal coags)

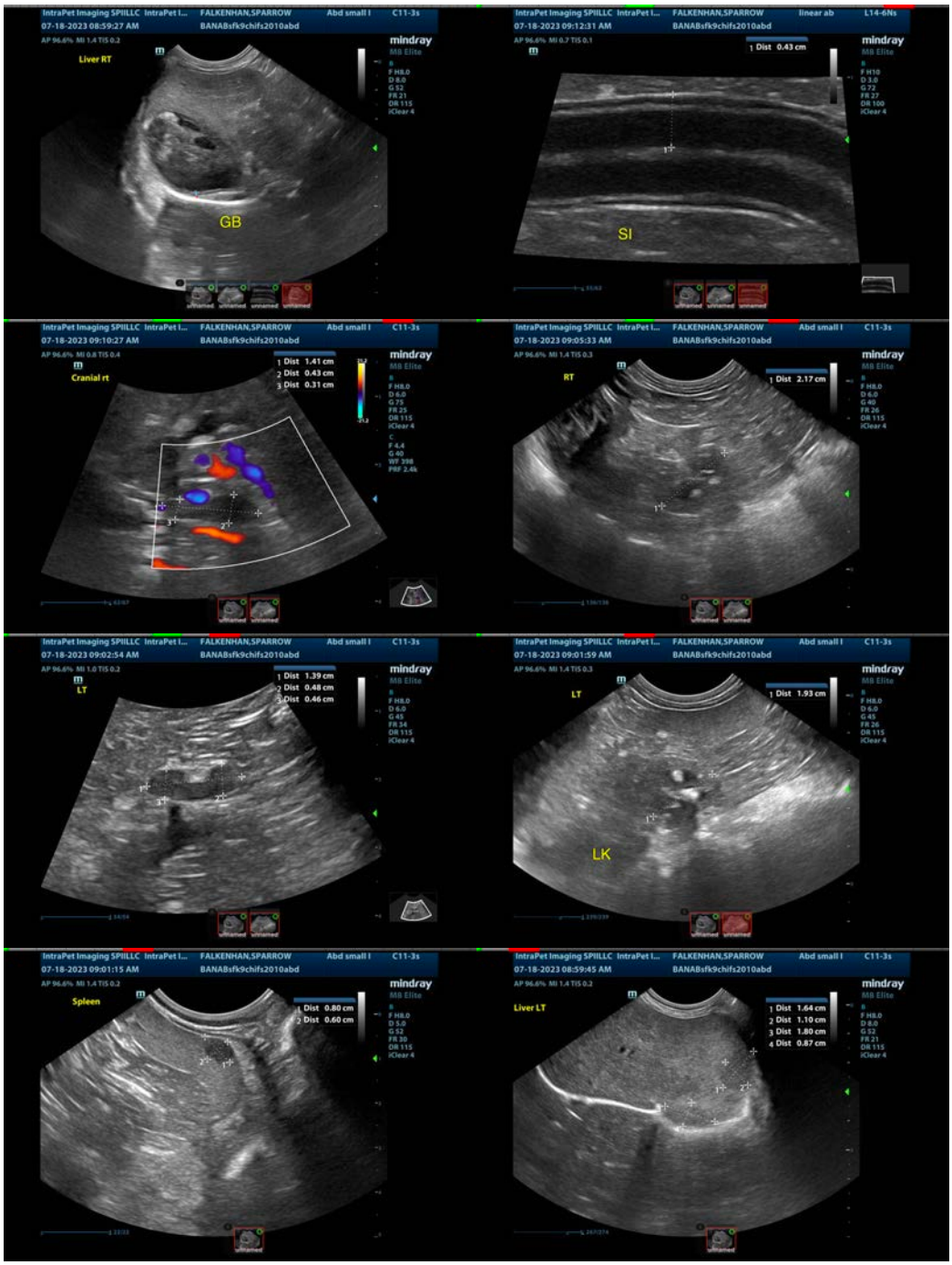
- If no response to supportive care (Denamarin, fluids, antibiotics, +/- ursodiol etc.) Consider liver biopsy with samples obtained for histopathology, culture, and copper levels.

Both kidneys are small with nephroliths and decreased corticomedullary distinction. The significance of this is uncertain, particularly with no current azotemia. Consider a urinalysis and culture as well as blood pressure evaluation to obtain a baseline.

The hypoechoic nodule in the spleen appears relatively similar to the previous description. Options moving forward would include continued monitoring with ultrasound or a fine needle aspirate.

The gallbladder is large and distended with a large amount of intraluminal debris, which is starting to form into a gallbladder mucocele. The gallbladder wall may be slightly more prominent than normal but there is no evidence of surrounding inflammation. It is uncertain at this time if the gallbladder could be causing some of the symptoms described, but cholecystectomy could be considered, particularly if other causes of the symptoms described are not identified.

Recommend three view thoracic radiographs to evaluate for possible concurrent thoracic disease/involvement.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mindray
Liver RT
GB
IntraPet Imaging SPIILLC IntraPet I... FALKENHAN,SPARROW linear ab L14-6Ns
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mindray
1 Dist 0.43 cm
SI
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07-18-2023 09:10:27 AM BANABsfk9chifs2010abd
mindray
Cranial rt
1 Dist 1.41 cm
2 Dist 0.43 cm
3 Dist 0.31 cm
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RT
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mindray
LT
1 Dist 1.39 cm
2 Dist 0.48 cm
3 Dist 0.46 cm
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mindray
LT
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LK
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mindray
Spleen
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2 Dist 0.60 cm
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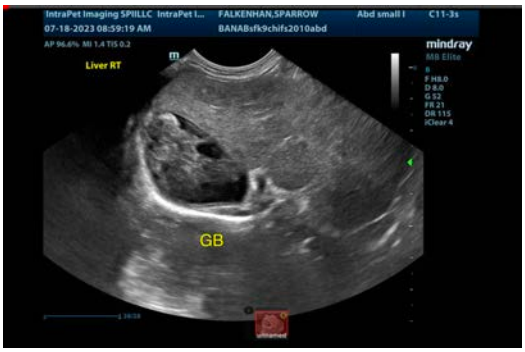
07-18-2023 08:59:45 AM BANABsfk9chifs2010abd
mindray
Liver LT
1 Dist 1.64 cm
2 Dist 1.10 cm
3 Dist 1.80 cm
4 Dist 0.87 cm



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)
info@sonopath.com