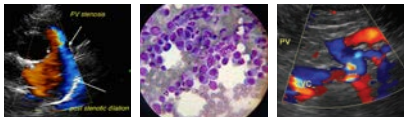
IMAGING PERFORMED BY

IntraPet.com



SonoPath

Clinical Sonography & Telecytology

EDUCATIONAL TELECONSULTATION SERVICES™

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DATE

9/20/22

PATIENT

Finn Harper

SPECIES

Canine

BREED

Papillon

SEX

Spayed Female

AGE

9/1/13

WEIGHT

14.3 Pounds

INTERPRETED BY

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

IMAGING PERFORMED BY

Andi Parkinson RDMS

HOSPITAL NAME

Timonium AH

REFERRING VET

Dr. McIntyre

INVOICE

41420

PRESENTING CLINICAL SIGNS

9-20-22 – Timonium Animal Hospital – Dr. McIntyre.
Finn Harper Canine Papillon 14.3lbs FS 9/1/2013.

Hx of PU/PD. Hx of progressive elevation of ALT, ALP despite Denamarin/Amoxicillin trial.

Current Medications: Hx Denamarin and Amoxicillin, completed course
Lab Results: Aug 2022: ALT 206, ALP 250. Sept 2022: ALT 260, ALP 394
Date of Previous IntraPet Ultrasound: No previous.
Sedation: Not required to complete full diagnostic ultrasound.
Stat Report: Not requested.

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 has a normal shape and size (4.33 cm). Overall echogenicity is normal with adequate 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 pyelectasia, nephroliths, infarcts or hydroureter. Renal vasculature is normal.

The right kidney has a normal shape and size (4.12 cm). Overall echogenicity is normal with adequate 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 pyelectasia, nephroliths, infarcts or hydroureter. Renal vasculature is normal.

Adrenal Glands

The left adrenal gland is normal in size measuring 0.62 cm at the cranial pole, 0.57 cm at the caudal pole, 1.78 cm in length. It is observed in its normal position cranial to the left renal artery. It is somewhat abnormal in appearance in that there is a focal hyperechoic nodule in the cranial pole measuring 0.31 cm x 0.36 cm. There is no evidence of vascular invasion visualized.

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.

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 very small cystic lesion visualized in the cranial third of the spleen measuring 0.40 cm x 0.29 cm.

Liver

The liver is subjectively normal in 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. There are numerous ill-defined, hyperechoic nodules visualized throughout the parenchyma. Two of these measure at 1.1 cm and 1.35 cm. There is no deviation in the margins of the liver.

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 moderate 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 measures 0.42 cm. Jejunum wall measures 0.36 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.

ULTRASONOGRAPHIC FINDINGS

- Hyperechoic nodule in the cranial pole of the left adrenal gland – Left/right adrenomegaly could be consistent with neoplasia (e.g., adenoma, carcinoma, pheochromocytoma), hyperplasia, inflammation, other.

- Small cystic lesion in the spleen – The appearance of this lesion trends towards a benign lesion, but an underlying neoplastic process cannot be ruled out.

- Heterogeneous liver with ill-defined hyperechoic nodule – 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 appearance of these hyperechoic nodules trends towards a benign lesion.

- Moderate gallbladder debris – The significance of the aggregated gallbladder debris is unclear. This could represent an early mucocele, cholestasis, or may be secondary to fasting but seems unlikely to be causing a current issue. Recommend continued monitoring.

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

There are numerous ill-defined hyperechoic nodules within the liver, but no large focal lesions, and the appearance of these hyperechoic nodules trends towards more benign lesions. Consider the following for further evaluation of a possible primary hepatopathy, as the gallbladder changes are relatively mild at this time.

- 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

- If the ALP is significantly elevated relative to the ALT and symptoms consistent with Cushing's are present, consider adrenal function testing (ACTH stim)

- 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.

Additionally, there is a hyperechoic nodule in the cranial pole of the left adrenal gland. This lesion is relatively small, but nonetheless this could represent a benign or early neoplastic lesion, and could represent an active secretory lesion or non-active lesion. Consider the following for further evaluation:

- If signs of Cushing's are present, consider adrenal function testing. I prefer an ACTH stimulation test combined with an adrenal panel to the University of Tennessee's endocrine lab to look for atypical adrenal hormones as well as cortisol. (Other testing can suffice)

- If adrenal dependent Cushing's is suspected and supported by adrenal function testing, consider medical therapy with lysodren or trilostane or consider surgical removal (recommend referral to a board certified veterinary surgeon and possible pre op CT)

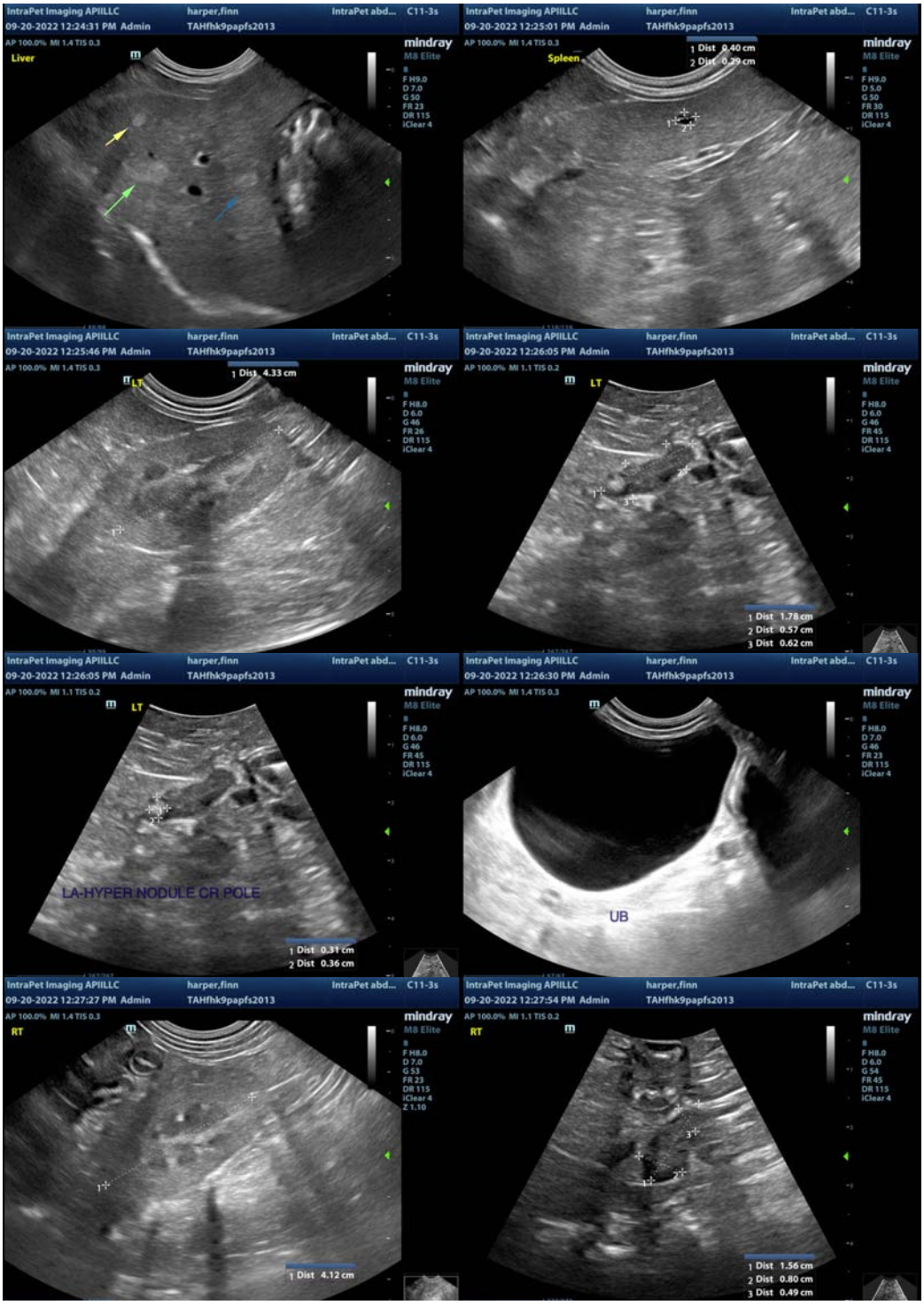
- Recommend blood pressure evaluation-if hypertensive consider testing catecholamine levels for a possible pheochromocytoma

- If no symptoms of Cushing's are present, consider either referral for surgery or continued monitoring with ultrasound (initially ins 2-3 months).

- Many of these nodules can be benign and incidental in nature and others can be more aggressive and grow quickly, unfortunately that is difficult to determine with a single ultrasound.

There is a very small cystic lesion visualized in the spleen. It would likely be difficult to sample at this time. Recommend close continued monitoring along with the adrenal gland.

Recommend three view thoracic radiographs to evaluate for possible concurrent thoracic disease/involvement.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Liver
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Spleen
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2 Dist 0.29 cm
mindray
M8 Elite
IntraPet Imaging APIILLC
harper,finn
IntraPet abd... C11-3s
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TAHfhk9papfs2013
LT
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mindray
M8 Elite
IntraPet Imaging APIILLC
harper,finn
IntraPet abd... C11-3s
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LT
1 Dist 1.78 cm
2 Dist 0.57 cm
3 Dist 0.62 cm
mindray
M8 Elite
IntraPet Imaging APIILLC
harper,finn
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LT
LA-HYPER NODULE CR POLE
1 Dist 0.31 cm
2 Dist 0.36 cm
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M8 Elite
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RT
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IntraPet abd... C11-3s
09-20-2022 12:27:54 PM Admin
TAHfhk9papfs2013
RT
1 Dist 1.56 cm
2 Dist 0.80 cm
3 Dist 0.49 cm
mindray
M8 Elite

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.

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