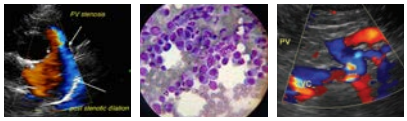
IMAGING PERFORMED BY

IntraPet.com



SonoPath

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DATE

8/16/22

PATIENT

Zammis Cohen

SPECIES

Canine

BREED

Husky X

SEX

Neutered Male

AGE

1/10/09

WEIGHT

30.75 Pounds

INTERPRETED BY

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

IMAGING PERFORMED BY

Andi Parkinson RDMS

HOSPITAL NAME

Banfield Towson

REFERRING VET

Dr. Lewis

INVOICE

40492

PRESENTING CLINICAL SIGNS

Vomiting few times in the morning. Excessive panting.

Current Medications: Cerenia injection 3.1mls SQ.
Lab Results: Hepatopathy, Positive CPL.
Radiographs: Distended stomach.
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 prostate is normal in size 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.

The left kidney has a normal shape and size (6.98 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.

The right kidney has a normal shape and size (6.69 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. There is no evidence of pyelectasia, nephroliths, infarcts or hydroureter. Renal vasculature is normal.

Adrenal Glands

The left adrenal gland is large in size measuring 1.79 cm at the cranial pole, 1.04 cm at the caudal pole, and 3.45 cm in length. It is observed in its normal position cranial to the left renal artery. It is somewhat abnormal in appearance in that the cranial pole is large and hyperechoic, measuring 1.79 cm x 1.64 cm, creating the appearance of a mass effect. Findings are most consistent with a left-sided adrenal mass. No obvious vascular invasion is noted.

The right adrenal gland is large in size measuring 1.96 cm at the cranial pole, 0.88 cm at the caudal pole, and 2.39 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 somewhat abnormal in appearance in that the cranial pole is large, hyperechoic and irregular, measuring 1.88 cm x 1.16 cm. Findings are most consistent with a mass effect involving the cranial pole of the right adrenal gland. There is no obvious vascular invasion noted.

Spleen

The spleen is borderline large in size. The spleen echotexture is heterogenous and mottled, 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 in size, and hypoechoic with smooth peripheral margins. The parenchyma is heterogenous in echotexture with subtle, indistinct focal mottling. Prominent/dilated hepatic vessels. No focal nodules or cystic lesions are observed.

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.

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. The duodenum measured as normal (between 0.3-0.5cm in wall thickness) and the jejunum measured as normal (between 0.2-0.47cm.) 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
A brief view of the heart was submitted. A small volume of pericardial effusion is noted. Recommend full cardiac ultrasound.

ULTRASONOGRAPHIC FINDINGS

- Bilateral adrenal masses - Both adrenals have enlarged, hyperechoic cranial poles, most consistent with nodules/masses affecting the cranial pole of the adrenal glands. These could represent benign lesions (hyperplasia, adenomas, etc.), or could represent neoplastic lesions such as pheochromocytoma, carcinoma, metastasis, other.

- Borderline large, mottled spleen – The diffuse splenic changes are non-specific and could be consistent with lymphoid hyperplasia, extramedullary hematopoiesis, infiltrative neoplasia, inflammation, other. Cytology or histopathology would be necessary to get a definitive diagnosis.

- Large, hypoechoic, heterogeneous liver with prominent vasculature – 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 prominent vasculature is concerning for possible congestion.

- Small volume pericardial effusion – recommend cardiac evaluation.

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

Both adrenals have a hyperechoic mass effect/nodule on the cranial pole. These likely represent independent disease processes, but also could represent metastatic lesions. I do not see evidence of clear vascular invasion, but this is still possible. These masses can be benign or malignant and can secrete hormones or be non-active. Options moving forward include:

- If signs of cushings 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 cushings is suspected and supported by adrenal function testing, consider medical therapy with lysodren or trilostane and/or consider surgical removal. A preoperative CT scan would be strongly recommended. Bilateral adrenalectomy is possible, but can be challenging to manage in the perioperative time period. Recommend referral to a tertiary referral clinic with an ICU if this is pursued.

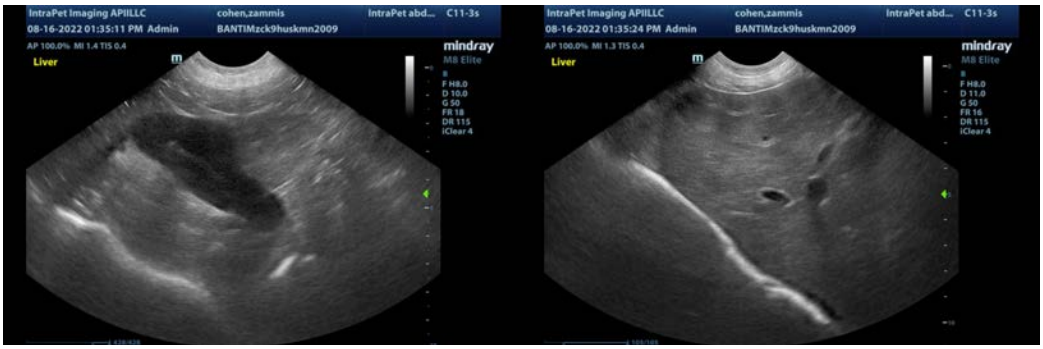
- Recommend blood pressure evaluation-if hypertensive consider testing catecholamine levels for a possible pheochromocytoma

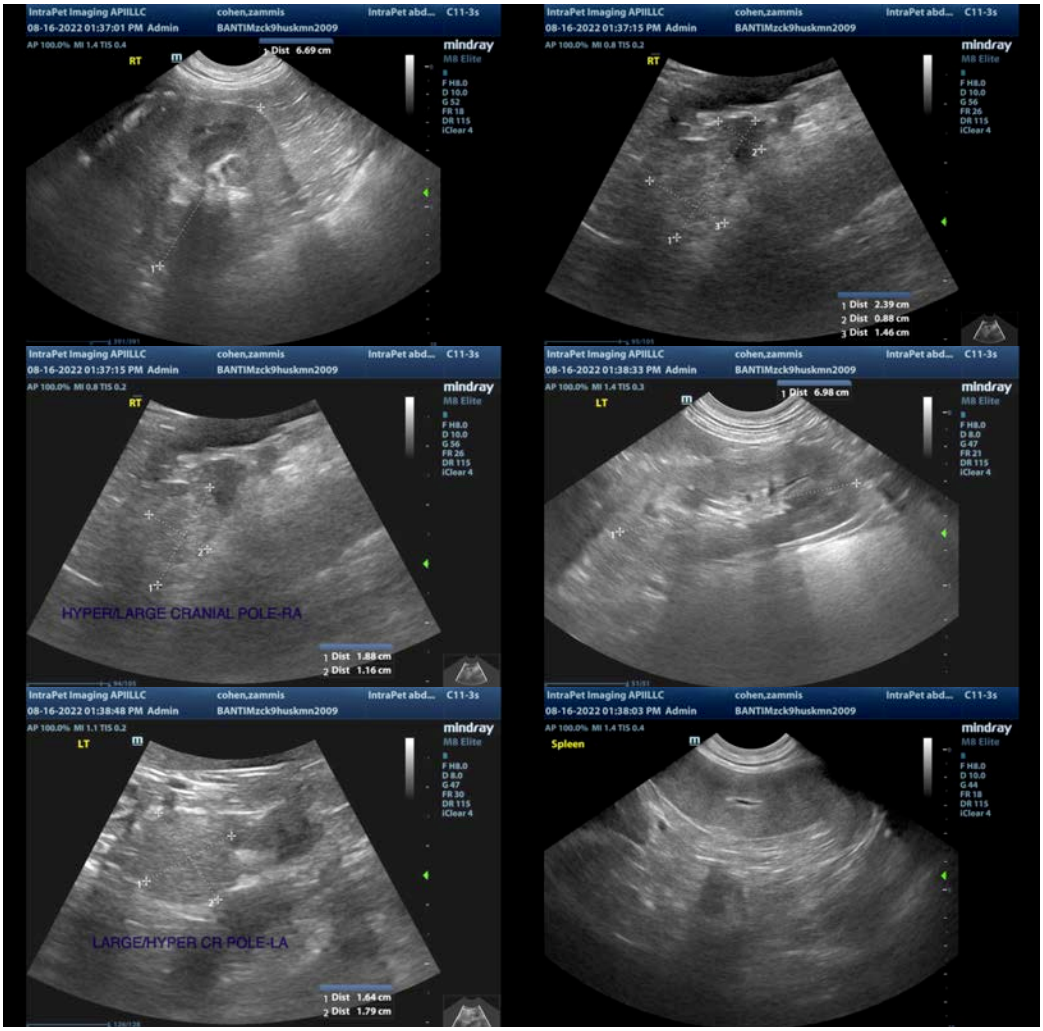
- Due to the invasive nature of these masses a CT scan is recommended to evaluate for metastasis and vascular invasion.

- If no symptoms of cushings are present, consider either referral for surgery or if surgery is not an option consultation with a veterinary oncologist or internist regarding treatment options and prognosis.

- Some aggressive adrenal tumors can grow quickly and there is risk for acute hemorrhage from vascular invasion.

The liver appears large with prominent vasculature. This combined with the small amount of pericardial effusion increases concern for possible cardiac disease greatly. Recommend a full cardiac evaluation, blood pressure evaluation, and 3-view thoracic radiographs.





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)
kathleen.sennello@sonopath.com