IMAGING PERFORMED BY

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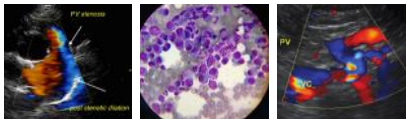

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DATE
2/18/22

PATIENT
Prancer Smitley

SPECIES
Canine

BREED
Chihuahua Mix

SEX
Spayed Female

AGE
1/1/08

WEIGHT
20.8 Pounds

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

HOSPITAL NAME
Honeygo AH

REFERRING VET
Dr. Moffa

INVOICE
13981

PRESENTING CLINICAL SIGNS

History: In for annual exam. DVM noted significant weight loss (6 lbs in 1 year).

Lab Results: ALT, AST, SAP elevated.
Date of Previous IntraPet Ultrasound: No previous IntraPet scans.
Sedation: Not required to complete full diagnostic ultrasound.
Stat Report: Declined/Not requested.
Imaging Performed By: Rachel Brilhart, RDMS.

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 (4.8 cm). Overall echogenicity is slightly hyperechoic with poor corticomedullary distinction and a typical 1:3 cortex:medulla ratio. There is no evidence of perinephric inflammation or effusion. There is renal pelvic dilation present (0.62 cm). Numerous small cortical cysts and a large cyst (0.91 cm) were present. There is no evidence of nephroliths, infarcts or hydroureter. Renal vasculature is normal.

The right kidney has a normal shape and size (5.8 cm). Overall echogenicity is slightly hyperechoic with poor corticomedullary distinction and a typical 1:3 cortex:medulla ratio. There is no evidence of perinephric inflammation or effusion. There is renal pelvic dilation present (0.3 cm). There are numerous, small cortical cysts and a large cortical cyst measuring 0.91 cm. There is no evidence of nephroliths, infarcts or hydroureter. Renal vasculature is normal.

Adrenal Glands

The left adrenal gland is normal in size measuring 0.71 cm at the caudal pole (insert other measurements if provided) 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 large in size measuring 1.02 cm at the cranial pole and 1.8 cm at the caudal pole and 3.46 cm in length. It is in its normal position, between the cranial aspect of the right kidney and the caudal vena cava. It is somewhat irregular in appearance; in that it is large and hypoechoic and there is evidence if invasion into the caudal vena cava filling the diameter of the cava and causing at least a partial obstruction of blood flow. There is no surrounding free fluid and minimal inflammation. Findings are consistent with a right sided adrenal mass with invasion into the caudal vena cava.

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 subjectively large in size and irregular in shape. 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 nodules within the hepatic parenchyma. A hypoechoic nodule, measuring 2.36 cm x

1.95 cm is seen on the diaphragmatic surface. There is an isoechoic nodule visualized, measuring 2.31 cm and there is an expansile isoechoic, large mass effect on the left side of the liver, measuring approximately 10.76 cm x 8.32 cm.

The gall bladder 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/region of 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

Primary Findings

- Decreased corticomedullary distinction in both kidneys with bilateral pyelectasia and cortical cysts. The bilateral renal findings are consistent with age-related change. Pyelectasia of the left and right kidney could be consistent with pyelonephritis, chronic renal disease, secondary to PU/PD or fluid therapy (if applicable), other.

- Large heterogeneous liver with small hypoechoic nodules and a large isoechoic 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.

- Right sided adrenal mass with invasion into the caudal vena cava

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

The liver is large and has numerous hypoechoic nodules within the parenchyma. Additionally, there is a large expansile mass effect on the left side of the liver, which is isoechoic to the liver and most consistent with a primary liver mass (adenoma or carcinoma). I suspect the liver enzyme elevations are secondary to these lesions and they could represent either benign or neoplastic change. Additionally, there is an enlarged right adrenal gland, most consistent with an adrenal mass. There is evidence of invasion of this mass lesion into the caudal vena cava. Findings are most consistent with adrenal neoplasia (pheochromocytoma, carcinoma, etc.). 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 (recommend referral to a board certified veterinary surgeon and possible pre op CT)-This can be a challenging surgery with significant risk for complication

- 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.

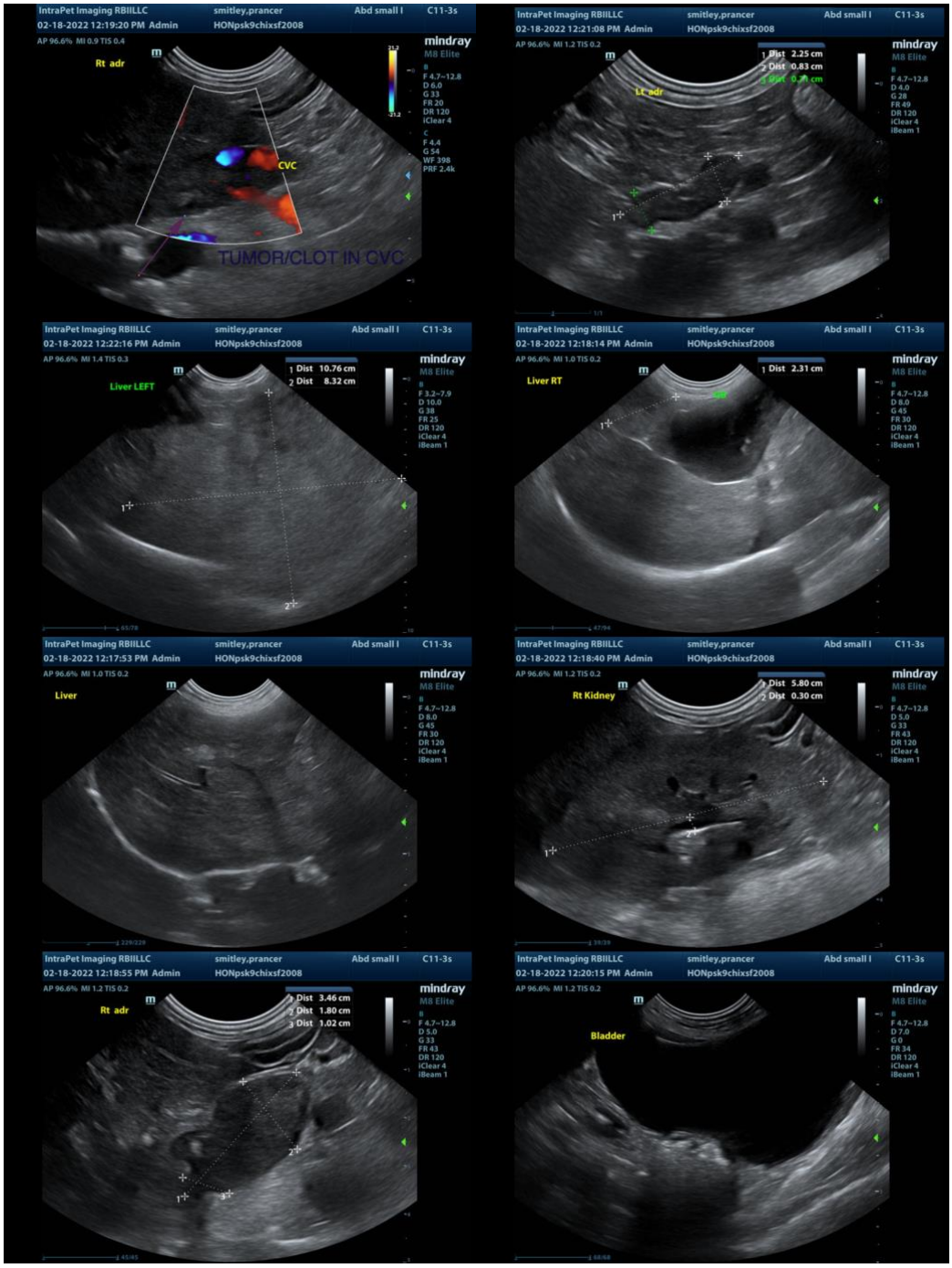
- If no symptoms of cushings are present, consider either referral for surgery or if surgery is not an option consultation with a veterinary oncologist regarding chemotherapeutic options and continued monitoring with ultrasound (in 4-6 weeks) can be considered.

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

As there is evidence noted already for vascular invasion in this patient, this would change the prognosis somewhat, but does not definitively rule out the possibility for surgery. Unfortunately, with the concurrent liver issues, palliative therapy may be the optimal route.

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

The kidneys show change consistent with chronic progressive renal disease. Consider urinalysis and culture due to the pyelectasia noted.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mindray
M8 Elite
Rt adr
CVC
TUMOR/CLOT IN CVC
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Lt adr
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Liver LEFT
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Dist 8.32 cm
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Liver RT
Dist 2.31 cm
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Rt Kidney
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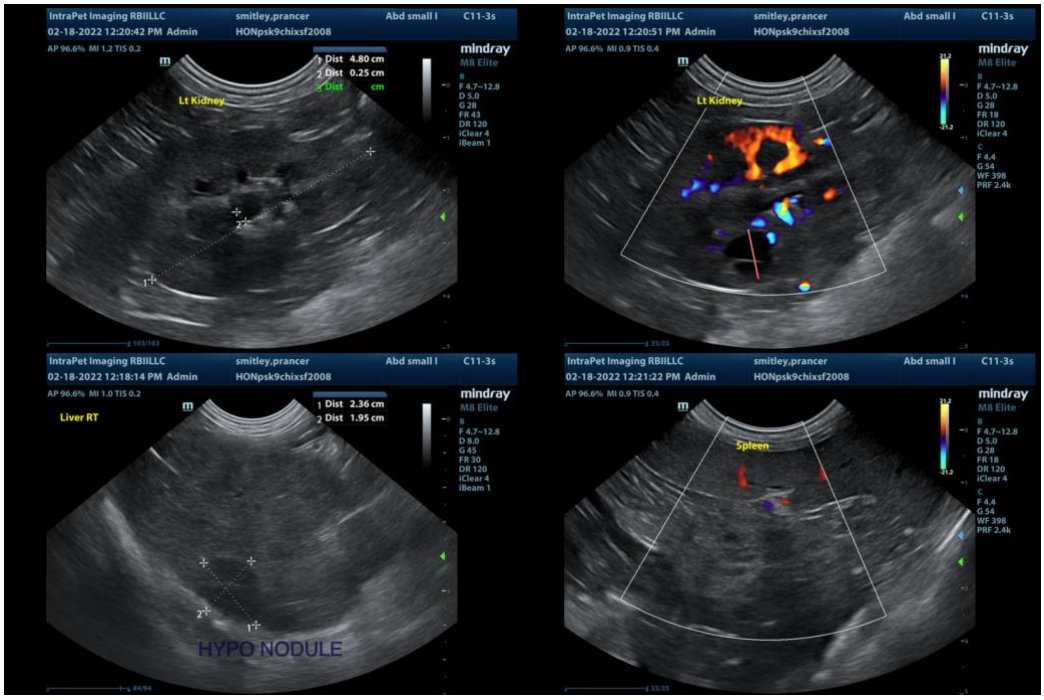
Bladder



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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