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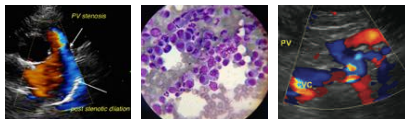

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DATE
1/14/22

PATIENT
Sugar Napier

SPECIES
Canine

BREED
Pekingese Mix

SEX
Intact female

AGE
1/11/02

WEIGHT
13.7 lbs

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

HOSPITAL NAME
Northwind AH

REFERRING VET
Dr. Miller

INVOICE
95248

PRESENTING CLINICAL SIGNS

History: anorexia (starting 1/3), diarrhea, weight loss, lethargy.
Current Medications: Cerenia 16mg start 1/6/2022, Metronidazole 2.5 md BID.
Lab Results: cbc/chem 17/t4 - alp 244. Attached separately.
Radiographs: decrease detail in cranial abdomen w/suspected hepatopathy. dorsally deviated trachea at heart base on rads.
Date of Previous IntraPet Ultrasound: No previous IntraPet scans.
Sedation: Not required to complete full diagnostic ultrasound.
Stat Report: Not requested.
Imaging Performed By: Andi Parkinson, 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 (4.32 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. Small cortical cysts and small, non-obstructive nephroliths were noted. There is no evidence of pyelectasia, infarcts or hydroureter. Renal vasculature is normal.

The right kidney has a normal shape and size (4.54 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. Small cortical cyst and small, non-obstructive nephroliths were noted. There is no evidence of pyelectasia, infarcts or hydroureter. Renal vasculature is normal.

Adrenal Glands

The left adrenal gland is normal in size measuring 0.54 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 large in size measuring 1.3 cm at the cranial pole and 0.78 cm at the caudal pole and 1.9 cm in length. It is located in its normal position between the cranial aspect of the right kidney and caudal vena cava. It is normal in shape, but large in size and somewhat hyperechoic. This is consistent with a right adrenal mass.

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 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 is an ill-defined, somewhat hyperechoic, irregular mass effect visualized in the ventral portion of the liver. The lesion measures 2.73 x 3.5 cm. The gallbladder lumen is moderately distended. The wall of the gallbladder is not thickened and has a relatively smooth mucosal surface. There is a small, organized area of non-vascular tissue/organized debris near the gallbladder neck measuring 1.0 x 0.92

cm. This could be consistent with a mass effect or a ball of organized debris. The cystic and common ducts are normal/not visible. There is moderate distension of the gallbladder, but no overt obstruction noted.

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 prominent and hypoechoic as compared to the surrounding isoechoic 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:

- Right adrenal mass. Right adrenomegaly could be consistent with neoplasia (e.g., adenoma, carcinoma, pheochromocytoma), hyperplasia, inflammation, other.

- Focus of organized debris or possible small effect at gallbladder neck. This is a non vascular structure. I recommend to continue monitoring lab work and ultrasonographic findings.

- Large, heterogenous liver with an irregular hyperechoic 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. The focal hyperechoic mass effect could represent either a benign or cancerous lesion. Appearance favors a primary hepatic lesion rather than a metastatic lesion.

SECONDARY FINDINGS:

- Decreased corticomedullary distinction in both kidneys with small cortical cysts and non-obstructive nephroliths. Mild loss of corticomedullary distinction in both kidneys could be consistent with chronic degenerative disease or interstitial nephrosis. The hyperechoic mineralized foci observed at the corticomedullary junction of the left/right kidney are consistent with small, non-obstructive nephroliths.

- Prominent hypoechoic pancreas. The pancreatic changes are most consistent with age-related parenchymal remodeling, potentially secondary to a prior inflammatory episode, early fibrosis or chronic pancreatitis.

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

There are numerous lesions described, which is not unexpected in an older pet like this. The difficulty lies in trying to determine which lesions are significant. The liver is somewhat irregular and heterogenous with an ill-defined mass effect. Additionally, there is some material near the gallbladder neck, which could represent debris or a small mass effect. Given that the liver values are mildly elevated these could both represent incidental findings, but close continued monitoring is warranted of both liver values and the appearance on ultrasound to look for growth, biliary obstruction, etc.

There is a mass effect involving the right adrenal gland. There is no obvious vascular invasion, but this can be difficult to see given the proximity to the liver lobe, etc. This may be a benign or cancerous lesion and can secrete hormones or be non-active. Options moving forward include:

- 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 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 Cushing's 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.
- If conservative therapy is desired and there are no symptoms of Cushing's you can consider close monitoring with ultrasound with the knowledge that possible vascular invasion could occur. Some aggressive adrenal tumors can grow quickly and cause acute hemorrhage.

The changes repeated in the pancreas and kidneys likely represent age related change. An obvious cause for the diarrhea is not visualized. It is not uncommon for some types of GI disease to cause relatively few ultrasonographic lesions:

- Consider a GI panel to Texas A&M for a qualitative PLI, TLI, cobalamin and folate to further evaluate the pancreas and GI tract.
- If this is an acute enteritis consider a low fat bland diet. If this has been going on while you can consider a hydrolyzed protein or a novel prescription diet.
- I recommend probiotic therapy.

A mentioned previously there are many lesions and it is difficult which can be the source of the anorexia and weight loss reported.


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C11-3s
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Liver
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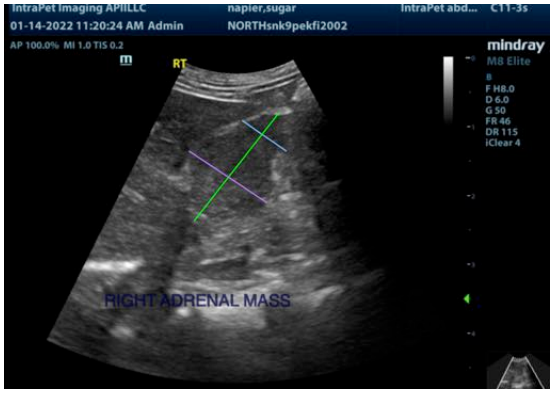
M8 Elite
MASS VS DEBRIS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RT
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M8 Elite
RIGHT ADRENAL MASS


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LT
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1 Dist 1.55 cm
2 Dist 0.54 cm
3 Dist 0.55 cm


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LT
1 Dist 4.32 cm
mindray
M8 Elite


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Spleen
mindray
M8 Elite


IntraPet Imaging APIILLC
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1 Dist 4.54 cm
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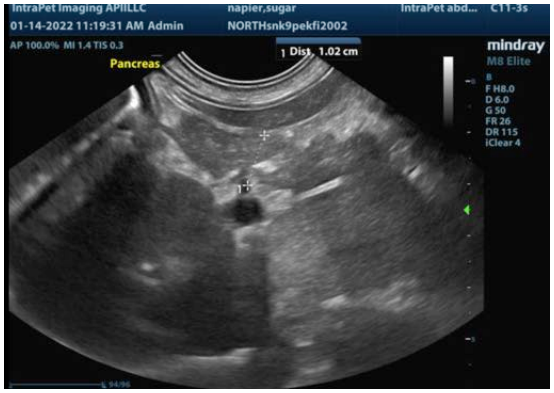

The information and recommendations provided are based on the images presented by the referring veterinarian. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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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