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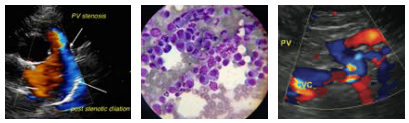

SonoPath
Clinical Sonography & Telecytology
EDUCATIONAL TELECONSULTATION SERVICES™
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DATE
10/27/21

PATIENT
Harley Toop

SPECIES
Canine

BREED
Mix

SEX
Neutered male

AGE
3/6/10

WEIGHT
64.6 lbs

INTERPRETED BY
Eric Lindquist, DMV
DABVP, Cert. IVUSS

HOSPITAL NAME
Banfield Pet Hospital
of Westminster

REFERRING VET
Dr. Stephens

INVOICE
92710

PRESENTING CLINICAL SIGNS

History: (4/9/21) Presented for routine preventative care, WT 79.2 lbs. (10/20/21) Presented for routine dental cleaning, doctor notes weight loss, WT 67 lbs., bloodwork wnl except drop in HCT, HCT low normal but 10 points lower than previous measurement. Dr recommends postpone dental and schedule abdominal U/S. Owner declines and elects to proceed with dental. (10/26/21) Vomiting and not eating since dental. WT 64.6. Again, recommended abdominal U/S and owner agrees.
Current Medications: 10/26/21 Cerenia 60 mg tablet: 1 tab po. 10/26/21 Entyce 30 mg/ml: 3 ml po.
Lab Results: HCT 4/9/21 48.09, HCT 10/20/21 38.086.
Radiographs: Not provided by the veterinarian.
Date of Previous IntraPet Ultrasound: No previous IntraPet scans.
Sedation: declined, required for further imaging.
Stat Report: not requested by the veterinarian.

ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN

****Sedation was recommended (declined) to better visualize deeper abdominal structures with optimal detail**

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 visualized areas of prostate and surrounding tissue appear normal. Unfortunately, the prostate is not fully visualized likely due to its intrapelvic location. Correlate with rectal exam findings.

The left kidney has a normal shape and size (7.63 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. Pinpoint, 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 (7.93 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. Pinpoint, 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 0.7 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.

There is a mass lesion in the area of the right adrenal gland, which is medial to and cranial to the right kidney. It is somewhat adrenal shaped with a cranial pole measuring 1.8 cm, caudal pole measuring 4.99 cm and is 9.83 cm in length. The mass deviates local vasculature, but direct invasion is not visualized. This is most 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 large 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. The deeper portions of the caudal liver appear very irregular with an expansile mass effect that has mixed echogenicity and is irregular. The margins appear somewhat nodular. This area of abnormal liver/mass effect measures 5.29 x 10.73 cm. Additionally, discrete, hypoechoic nodules are visualized and vary in size from 0.7-1.5 cm. The gallbladder lumen is moderately distended. The wall of the gallbladder 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 prominent and mottled 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:

- Large, heterogenous liver with numerous mass effects. There is a high concern for a neoplastic process, but nodular hyperplasia, etc. are possible.

- Mass effect in the area of the right adrenal gland. The mass is large enough that it is difficult to see its extent in margins clearly. I suspect that this is right adrenal in origin.

SECONDARY FINDINGS:

- Small pinpoint nephroliths in both kidneys. The hyperechoic mineralized foci observed at the corticomedullary junction of the left/right kidney are consistent with small, non-obstructive nephroliths.

- Prominent, mottled pancreas. The pancreatic changes are most consistent with age-related

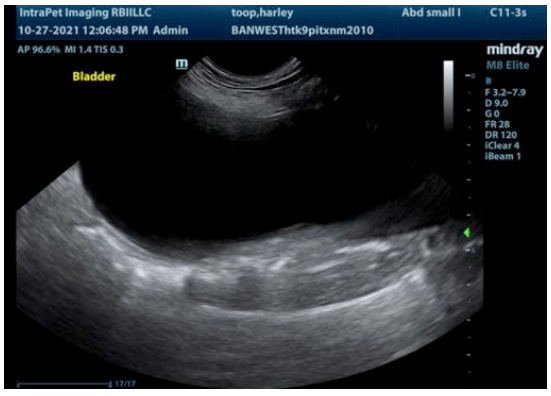
parenchymal remodeling, potentially secondary to a prior inflammatory episode, early fibrosis or chronic pancreatitis.

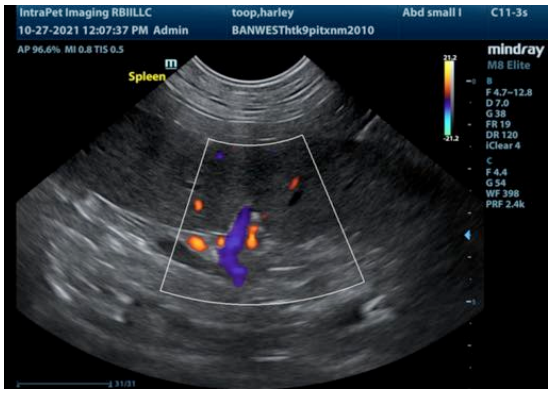
INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

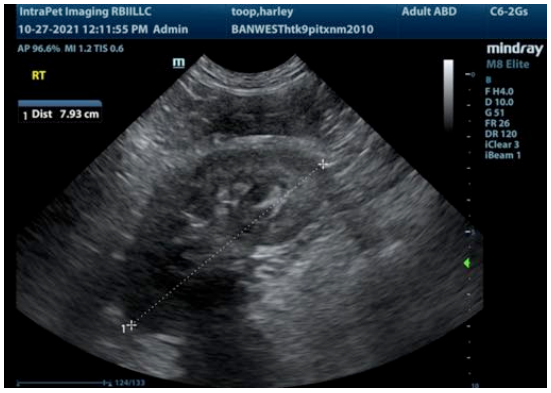
There is mass present involving the right adrenal gland. This mass is irregular and relatively large. I do not see evidence of clear vascular invasion, but this is still possible. These masses can be benign or malignant and can secrete hormones or be non-active. Based on the irregular appearance of this mass a cancerous process is considered more likely. 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.
- Some aggressive adrenal tumors can grow quickly and there is risk for acute hemorrhage from vascular invasion.

Additionally there is a mass effect in the liver. A CT scan of the right adrenal gland would also include the liver and be very helpful to further evaluate this area for the extent of disease and if surgical removal is an option. You can consider a FNA of the liver. If not already done recommend three view thoracic radiographs. There is no evidence of active hemorrhage or free fluid so I suspect that the reported anemia is an anemia of chronic disease, but I cannot rule out the possibility of previous reserved hemorrhage. The prognosis is guarded.



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C6-2Gs
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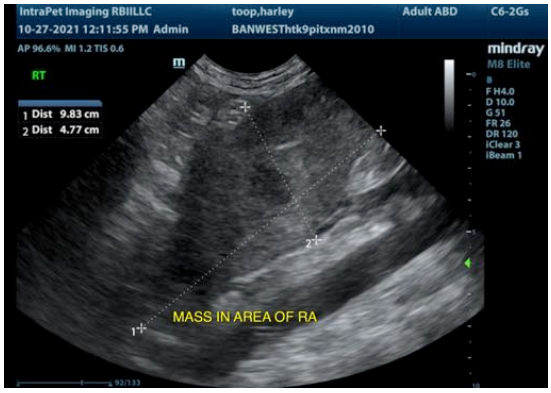
mindray
M8 Elite
RT
1 Dist 7.93 cm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toop,harley
Adult ABD
C6-2Gs
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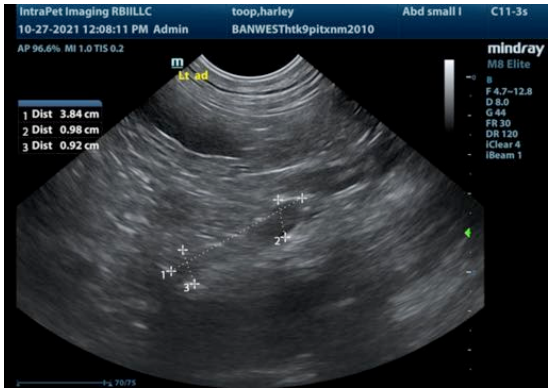
BANWESThtk9pitxnm2010
AP 96.6% MI 1.2 TIS 0.6
mindray
M8 Elite
RT
1 Dist 9.83 cm
2 Dist 4.77 cm
MASS IN AREA OF RA


IntraPet Imaging RBIILLC
toop,harley
Abd small I
C11-3s
10-27-2021 12:07:51 PM Admin
BANWESThtk9pitxnm2010
AP 96.6% MI 1.1 TIS 0.2
mindray
M8 Elite
Lt Kidney
1 Dist 7.63 cm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C11-3s
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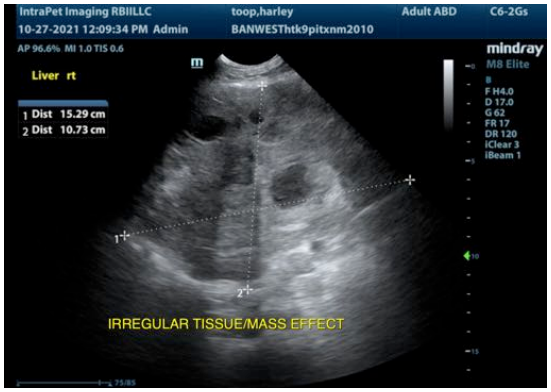
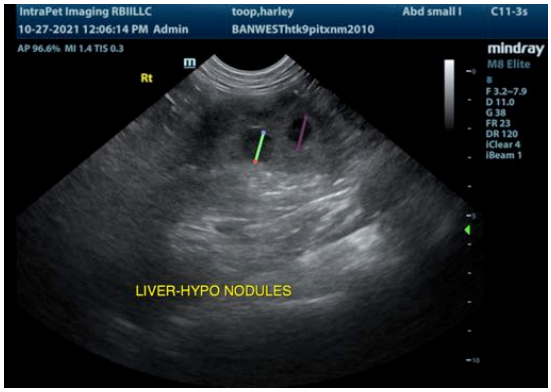
mindray
M8 Elite
Lt ad
1 Dist 3.84 cm
2 Dist 0.98 cm
3 Dist 0.92 cm


IntraPet Imaging RBIILLC
toop,harley
Adult ABD
C6-2Gs
10-27-2021 12:09:34 PM Admin
BANWESThtk9pitxnm2010
AP 96.6% MI 1.0 TIS 0.6
mindray
M8 Elite
Liver rt
1 Dist 15.29 cm
2 Dist 10.73 cm
IRREGULAR TISSUE/MASS EFFECT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toop,harley
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C11-3s
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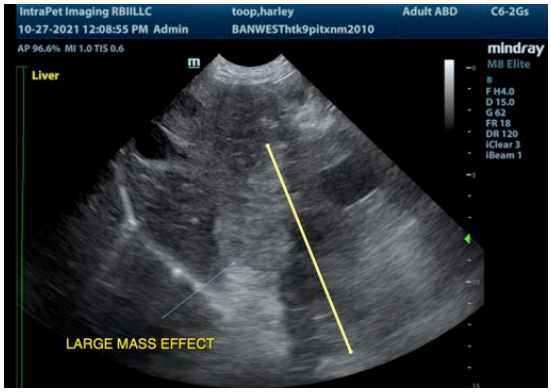
mindray
M8 Elite
Rt
LIVER-HYPO NODULES



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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