IMAGING PERFORMED BY

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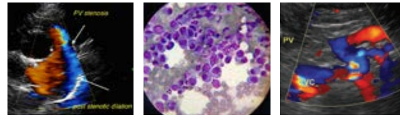

SonoPath
Clinical Sonography & Telecytology
EDUCATIONAL TELECONSULTATION SERVICES™
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DATE

3/22/22

PATIENT

Bonnie Hashagen

SPECIES

Canine

BREED

Beagle

SEX

Spayed Female

AGE

6/23/08

WEIGHT

31.7 Pounds

INTERPRETED BY

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

IMAGING PERFORMED BY

Stephanie Pearce RDCS, RVT

HOSPITAL NAME

Homeward Bound Vet

REFERRING VET

Dr. Keil

INVOICE

36334

PRESENTING CLINICAL SIGNS

Hx: Multiple people involved with patient care, with different information being conveyed. O's friend(Samuel Robertson) says dog has cancer, unsure where diagnosed and what type. Coughing up phlegm, coughing has gotten worse recently. No v/d. Eating/drinking well. Another veterinary hospital told them possible mass in chest.

T: See tech vitals, P: 104, R: Eup, CRT: 1-2 sec, MMb: Pink/Moist, QAR.
INTEG: Dirty, scaling, EENT: Dental Dz 2/4, MS: 8/9, CV: 3/6 L apical systolic, RESP: NSF, ABD: Hepatomegaly, G/U: NSF, NEURO: WNL
LN: WNL.

Current Medications: None.
Lab Results: See attached.
Radiographs: Enlarged L atrium, generalized bronchovesicular pattern, suspect medialstinum mass on lateral view, significant hepatomegaly, no obvious abd masses. The diffuse bronchial changes warrant ruling out chronic lower airway disease. Generalized cardiomegaly and suspected left atrial enlargement suggestive of MR. The right ventricular prominence may represent incidental variation; however, rule outs may include: TR, pulmonary hypertension, etc. Severe hepatomegaly.
Chronic multifocal IVD disease. Metallic foreign bodies as noted.
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 (6.27 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 no evidence of pyelectasia, nephroliths, infarcts or hydroureter. Renal vasculature is normal.

The right kidney has a normal shape and size (5.88 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 no evidence of pyelectasia, nephroliths, infarcts or hydroureter. Renal vasculature is normal.

Adrenal Glands

The left adrenal gland is normal in size measuring 1.08 cm at the cranial pole, 0.43 cm at the caudal pole, and 2.39 cm in length. It is observed in its normal position cranial to the left renal artery. It is somewhat irregular in appearance, in that the cranial pole is enlarged and slightly irregular. There is no evidence of regional vascular invasion or inflammation. Findings are most consistent with a nodule in the cranial pole of the left adrenal gland.

The right adrenal gland is normal in size measuring 0.60 cmk 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. No focal parenchymal abnormalities are visualized.

Liver
The liver is large in size 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, hypoechoic nodules throughout the hepatic parenchyma. These vary in size from approximately 0.40-0.75 cm. Additionally, there is a larger nodule visualized measuring 1.9 cm.

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 is moderately dilated with fluid and irregular shadowing material most consistent with normal ingesta and gas. 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 layering 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 measured 0.45 cm. Jejunum wall measured 0.32 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 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.

PRIMARY FINDINGS

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

- Large, heterogeneous liver with hypoechoic adrenal nodules – 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.

SECONDARY FINDINGS

- Decreased corticomedullary distinction in both kidneys – The bilateral renal findings are consistent with age-related change.

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

- Moderate amount of shadowing ingesta within the gastric lumen – Correlate with feedings history and abdominal radiographs. If adequately fasted then consider such differentials as delayed gastric emptying or a partial outflow tract obstruction (none visualized).

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

The liver is large and heterogeneous with numerous hypoechoic nodules evident. Additionally, there is a larger nodule visible measuring 1.9 cm. The appearance of the smaller nodules trends towards a more benign appearance, but the larger nodule is more concerning and should be monitored. Consider a fine needle aspirate of the liver.

Additionally, there is an enlargement of the cranial pole of the left adrenal gland. This is relatively subtle, and there is only mild irregularity at this time. These types of lesions can represent benign or malignant disease, 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)

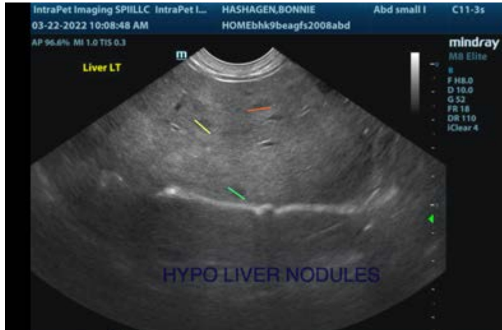
- If adrenal dependent cushings is suspected and supported by adrenal function testing consider medical therapy with lysodren or trilostane or consider surgical removal (recommend referral to a board certified veterinary surgeon and possible pre op CT)

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

- If no symptoms of cushings are present, consider either referral for surgery (idealy after CT scan) or continued monitoring with ultrasound (in 3-4 months).

- Some of these nodules can be benign and incidental in nature, unfortunately that is difficult to determine with a single ultrasound.

Based on the history provided, I think the chest radiographs and cardiac ultrasound are an excellent idea. The changes observed on today's scan may be significant, but are commonly seen in older dogs, and are likely not associated with the symptoms described, although these findings could become more significant in the future.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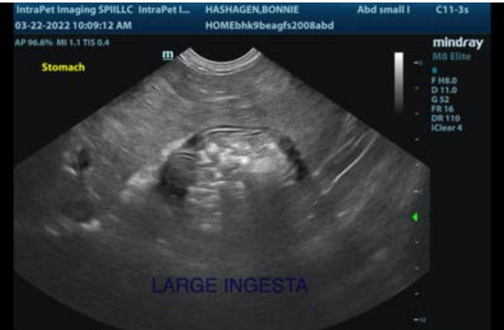
HYPO LIVER NODULES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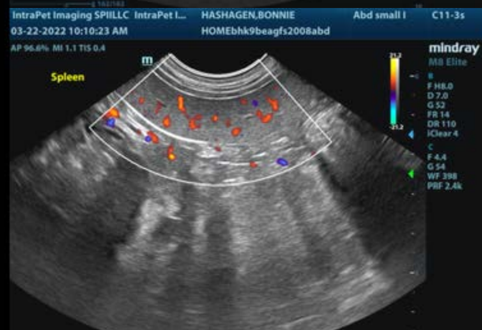
LARGE INGESTA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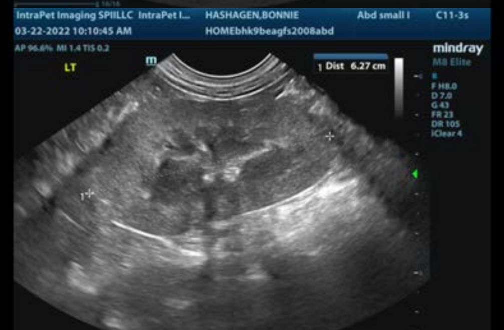
PRF 2.4k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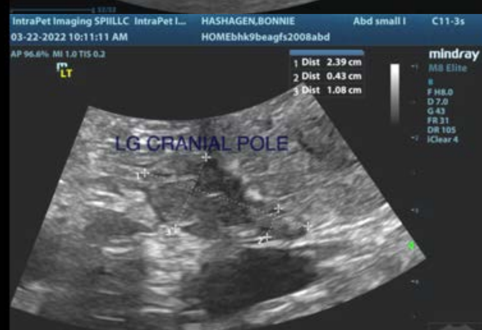
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LT
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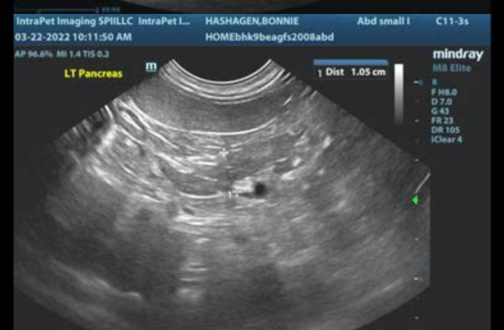
LG CRANIAL POLE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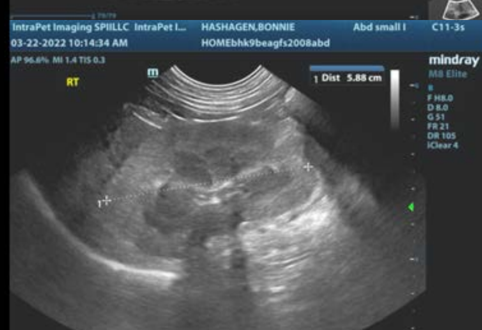
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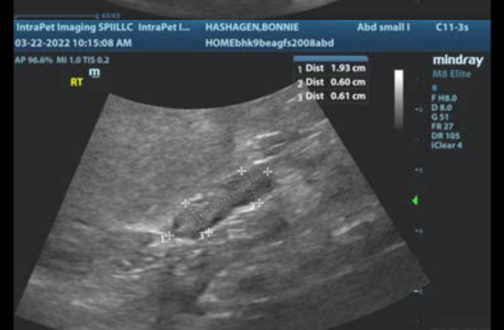
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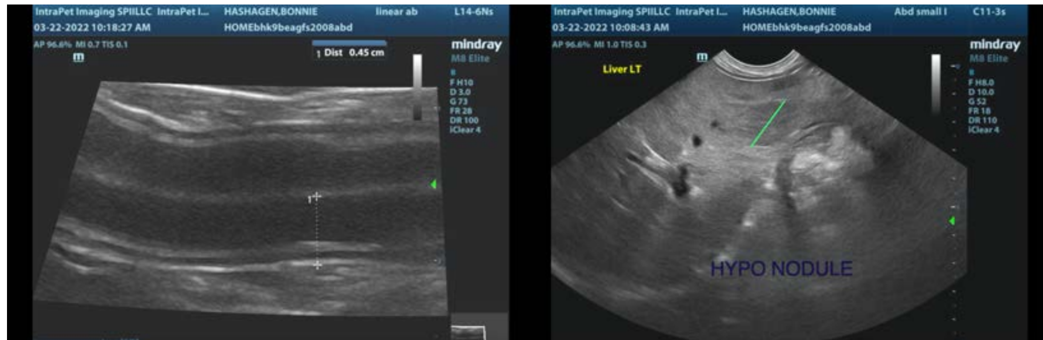

The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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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