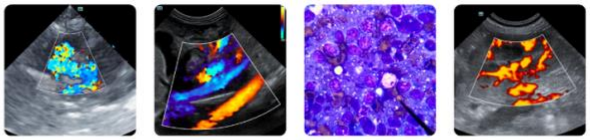


PATIENT

Winnie Benner

SPECIES

Canine

BREED

Yorkshire Terrier

SEX

Neutered Male

AGE

10 Years

WEIGHT

6.5 Pounds

INTERPRETED BY

Beth Johnson, DVM, DACVIM (SAIM)

IMAGING PERFORMED BY

Julia Bakker, DVM

HOSPITAL NAME

Orange Blossom VI

REFERRING VET

Frieda Hottenstine, DVM

INVOICE

37078

DATE

5/11/26

PRESENTING CLINICAL SIGNS

History of elevated liver enzymes. Episodes of shortness of breath. Treated with clavamox for possible pneumonia. Currently on Vetoryl, furosemide, methocarb and hydroxyzine (was on Tem P but developed GI bleed). Discontinued Denamarin when started vetoryl. Previous xrays: moderate hepatomegaly. Heart shadow enlarged. Spondylosis present L 5/6 and L1/2. Decreased disc space L 1/2.

Discussed progressive liver enzyme elevations (ALT ALKP GGT). Shunt, mass, gallbladder, hepatitis etc Resting cortisol wnl but dog placed on Vetoryl Rec LDDS off vetoryl 2 cavity US scheduled; Check liver, GB, adrenals etc and find cause of abnormal heart shadow.

ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN

Urinary System

Urinary bladder is adequately distended with anechoic contents. No masses, inflammatory changes, echogenic sediment or cystoliths are observed. The urinary bladder, trigone and visible pelvic urethra are normal in thickness with a smooth mucosal surface.

The area of the prostate is examined without evident prostatic pathology.

Kidneys are overall normal in size and shape with smooth peripheral margination. A normal 1:3 cortex to medulla ratio is maintained. The medulla and cortices are uniform in texture with some mild increased cortical echogenicity and mild loss of corticomedullary distinction, expected in this age patient. There is no evidence of pyelectasia or infarcts observed. The left kidney measures 3.59 cm. The right kidney measures 3.74 cm. Pinpoint nonobstructive mineral densities were noted bilaterally.

Adrenal Glands

Left adrenal gland is normal in size (0.47 cm at cranial pole and 0.54 cm at caudal pole), shape and overall architecture, echogenicity and echotexture. Visible surrounding vasculature appears normal.

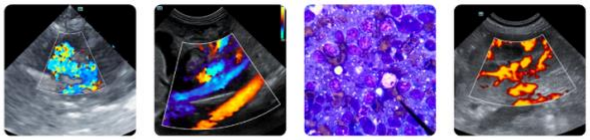
Right adrenal gland is normal in size (0.87 cm at cranial pole and 0.42 cm at caudal pole), shape and overall architecture, echogenicity and echotexture. Visible surrounding vasculature appears normal.

Spleen

Spleen is subjectively normal in size with a normal smooth capsular contour. Parenchyma is appropriately finely textured and homogenous with normal echogenicity relative to surrounding tissue (hyperechoic to liver). Multifocal well-demarcated hyperechoic homogenous nodules are noted. Splenic vasculature appears normal.

Liver

Liver is subjectively enlarged with mildly irregular margins. Parenchyma is (mildly, moderately or markedly) heterogenous characterized by multiple poorly defined hypoechoic nodules within otherwise hyperechoic liver parenchyma. Visible vasculature and biliary tree appear normal without distension or congestion.



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Gallbladder is moderately distended with anechoic bile as well as suspended and gravity dependent echogenic debris. The wall is smooth without visible thickening. There is no evidence of cystic or CBD dilation. There is no evidence of effusion or inflammation.

Gastrointestinal

The visible stomach wall is normal in thickness and layering. The lumen of the stomach is mildly distended with a small to moderate amount of echogenic non-shadowing luminal contents and gas consistent with normal ingesta. There is no evidence of obstruction, foreign material or infiltrative disease. Pyloric outflow tract appears patent.

The visible small intestines are normal in wall thickness and layering. Hyperechoic mucosal fogging or speckling is noted. Small intestinal motility appears adequate (1-3 contractions per min). The lumen of the small intestine is mildly distended with echogenic non-shadowing luminal contents and gas consistent with normal ingesta/chyme. There is no evidence of obstruction, foreign material or infiltrative disease.

The visible colon is normal in wall thickness (< 0.2 cm) and layering. Contents are consistent with normal formed feces and gas.

Pancreas

The area of the pancreas contains irregular hyperechoic pancreatic remodeling.

Free Abdomen

There is no visible free peritoneal effusion noted in these images.

There is no apparent pathologic lymphadenopathy noted in these images.

ULTRASONOGRAPHIC FINDINGS

Primary Findings

- Moderately heterogeneous liver- These changes are most consistent with benign processes such as nodular hyperplasia, steroid (vacuolar) hepatopathy, extramedullary hematopoiesis or possibly chronic inflammatory disease and less commonly infiltrative round cell or metastatic neoplasia.

- Moderate gallbladder debris- Cholecystic debris is of unknown clinical significance. It can be seen with biliary stasis from fasting or illness. Cholecystic debris is not necessarily related to hepatobiliary disease. Echogenic bile is most commonly an incidental finding in dogs and should be interpreted in combination with clinical signs such as nausea, inappetence, cranial abdominal discomfort and/or laboratory changes such as increased ALP and/or increased Tbili.

- Mucosal speckling- Mucosal speckling is often present with inflammatory bowel disease (IBD). It is not specific for type or severity of disease. Mild speckling change can occur as a normal patient variant in the post-prandial state.

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- Hyperechoic pancreas- This finding is suggestive of pancreatic fibrosis, possibly secondary to chronic pancreatitis. A TLI is recommended to rule out exocrine pancreatic insufficiency (EPI), especially if clinical signs (weight loss, diarrhea, etc.) are present.

Secondary Findings

- Hyperechoic splenic nodules- most consistent with benign myelolipomas. Other differentials such as fibrosis or calcification caused by old hematomas or infarcts, chronic inflammation, granulomatous disease or metastatic disease cannot be ruled out, but are considered less likely.

- Moderate age-related kidney changes with pinpoint non-obstructive mineral densities bilaterally.

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

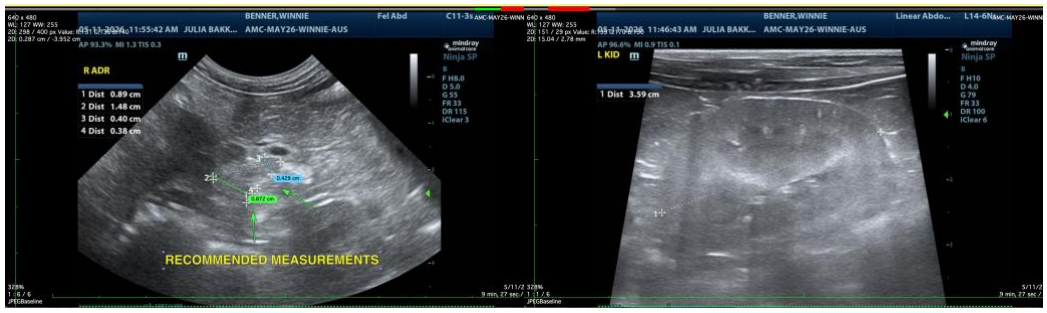
Given patients reported shortness of breath, three view thoracic radiographs are recommended for further assessment of cardio-pulmonary status as well as to further evaluate for any evidence of metastatic disease, if not recently evaluated.

As is reportedly already pending, cardiac evaluation, including an echocardiogram, +/- EKG, etc., is recommended.

A blood pressure is recommended if not recently evaluated.

Further recommendations regarding patients reported liver enzyme changes are largely dependent on the degree of liver enzyme changes, as well as the specific pattern, i.e., primarily hepatocellular injury pattern versus cholestatic pattern, etc. Having said that, medical management of hyperadrenocorticism is not recommended based on a baseline cortisol alone.

Further evaluation of the pancreatic and bowel changes described above is largely dependent on patients' clinical history but could warrant further gastrointestinal workup, including gastrointestinal malabsorption panel (including cobalamin, folate, TLI and PLI) to Texas A&M GI Laboratory, for further evaluation of GI and pancreatic function. +/- a fecal enteropathogen PCR panel to Texas A&M GI Laboratory, for further evaluation of possible infectious disease. Contact lab for recommendations on how long to discontinue antibiotics (if indicated) prior to obtaining a stool sample for submission.



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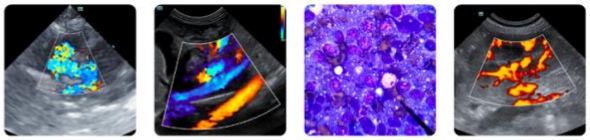

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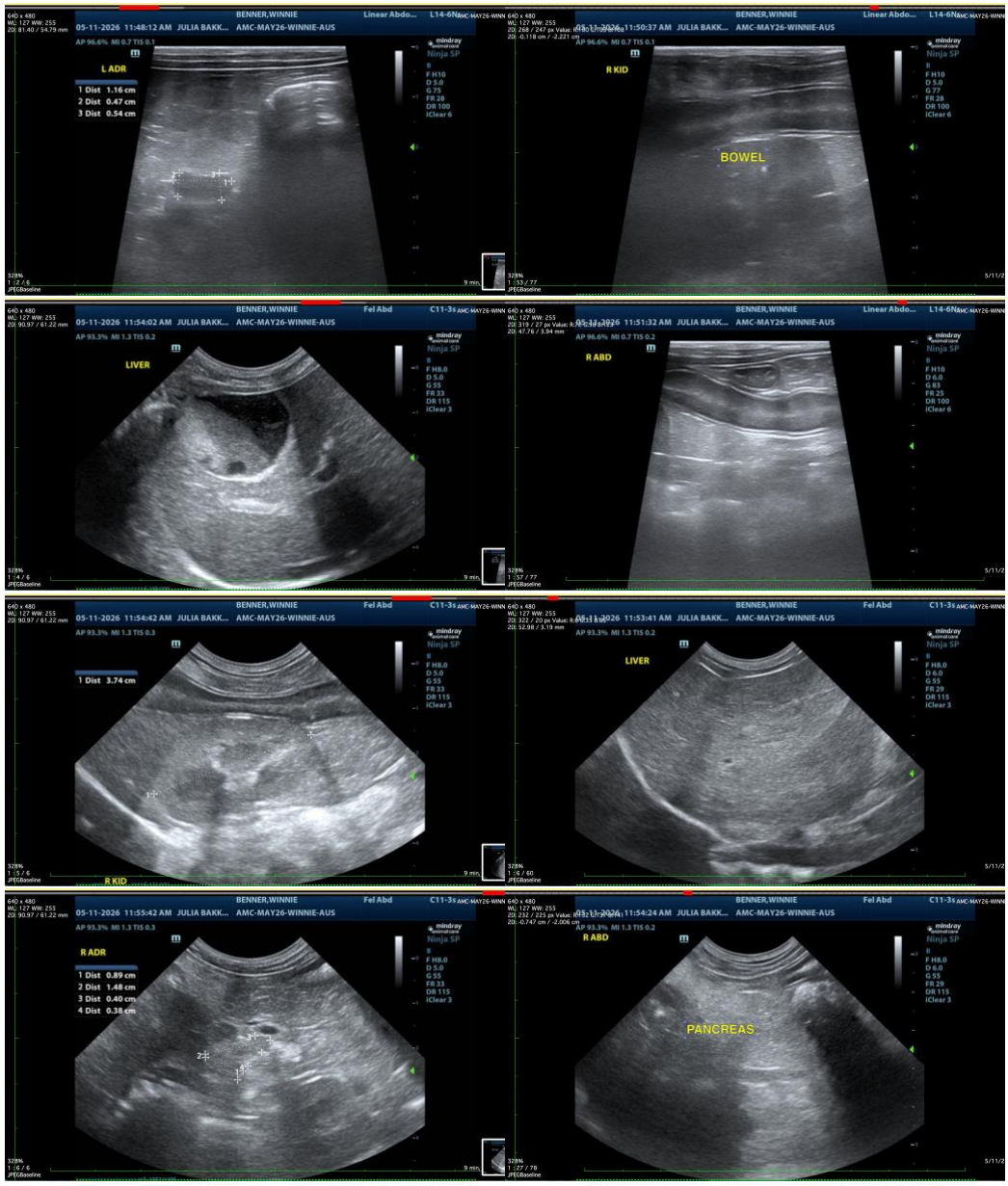

The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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.

Beth Johnson, DVM DACVIM

info@sonopath.com