

**PATIENT**

Banjo Terrasi

SPECIES

Canine

BREED

Dachshund X

SEX

Neutered Male

AGE

10 Years

WEIGHT

20.6 Pounds

INTERPRETED BYBeth Johnson, DVM
DACVIM**IMAGING PERFORMED BY**

Amy Mayhew, LVT

HOSPITAL NAME

SVS Imaging MI

REFERRING VETWixom Family Pet
Practice**INVOICE**

43063

DATE

11/30/22

PRESENTING CLINICAL SIGNS

Current Medications: None, would not take Denamarin in the past per owner. Patient History: Asymptomatic, had elevation in ALP 294 (5-131 IU/L) in 5/2021, and now the ALP is 549 IU/L, and the ALT is 126 (12-118 IU/L). The USG was 1.014

Abnormal PE/Chem/CBC/UA Results: Mild tartar/gingivitis upper arcade; right caudo-ventral thorax has firm 3cm diameter sq mass present, non-painful; dermal mass right cranial chest and small pea size soft sq mass left flank. Please see attached BW and previous AUS for comparison.

ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN**Urinary System**

Urinary bladder is adequately distended with primarily anechoic contents and occasional echogenic non-shadowing debris. Apical urinary bladder wall is diffusely thick (0.63 cm). Mucosa is hyperechoic and irregular. No masses or cystoliths are observed. The trigone and visible pelvic urethra are normal thickness with a smooth mucosal surface.

Prostate is normal in size, echotexture and echogenicity for a neutered male.

The right kidney is normal in size (4.59 cm), shape and echogenicity. It has smooth peripheral margination. There is a normal 1:3 cortex to medulla ratio with appropriate corticomedullary distinction. There is no evidence of pyelectasia, mineral or infarcts observed.

The left kidney is normal in size (4.03 cm), shape and echogenicity. It has smooth peripheral margination. There is a normal 1:3 cortex to medulla ratio with appropriate corticomedullary distinction. There is no evidence of mineral or infarcts observed. Mild pyelectasia noted measuring 0.26 cm in the transverse view.

Adrenal Glands

The right adrenal gland is normal in size (0.42 cm at the caudal pole, the cranial pole is difficult to fully visualize), shape and contour. Corticomedullary structure is unremarkable. Visible surrounding vasculature appears normal.

The left adrenal gland is normal in size (0.49 cm at the cranial pole and 0.75 cm at the caudal pole), shape and contour. Corticomedullary structure is unremarkable. Visible surrounding vasculature appears normal. A hyperechoic nodule is noted in the caudal pole. Nodule does not disrupt normal shape and/or architecture.

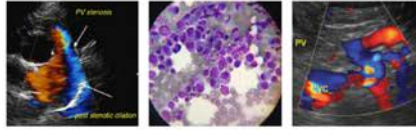
Spleen

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

The liver contains two discrete masses. In the left liver, there is a 3.4 cm x 3.8 cm mixed heterogeneous mass. In the right liver, adjacent to the gallbladder, there is a 3.1 cm x 6.4 cm more homogeneous, slightly iso- to hypoechoic mass.

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.

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Gastrointestinal

The visible stomach wall is normal in thickness and layering. The lumen of the stomach is mildly distended with very echogenic reverberation artifact from intraluminal gas. There is no evidence of obstruction, foreign material or infiltrative disease; however, complete visualization of far wall is partially inhibited by gas. Pyloric outflow tract appears patent.

The visible small intestines are normal in wall thickness and layering (canine duodenum < 0.5 cm and feline duodenum < 0.4 cm; other < 0.3 cm). Small intestinal motility appears adequate (1-3 contractions per min). The lumen of the small intestine is empty with 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 observed pancreas appears appropriately isoechoic to surrounding omental fat. The capsule is mildly irregular in shape. Parenchyma is mildly heterogenous and coarse. There is no visible pancreatic duct dilation. There is no evidence of active peripancreatic inflammation.

Free Abdomen

There is no evidence of free peritoneal effusion noted in these images.

There is no apparent lymphadenopathy noted in these images.

PRIMARY FINDINGS

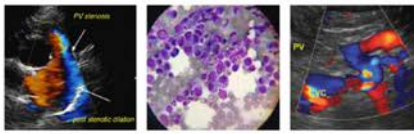
- **Heterogeneous mass in the left liver** – Concerning for infiltrative neoplasia such as sarcoma versus hepatocellular carcinoma versus other. A benign lesion such as a cyst, hematoma, abscess, etc. is possible but considered slightly less likely. Given the presence of two separate masses, round cell neoplasia should also be considered. However, the masses may represent different disease processes with the more homogeneous right-sided mass more likely to be benign process (hepatoma, adenoma, marked nodular hyperplasia, etc.) than the heterogeneous left sided mass. However, two malignant processes or a primary and metastatic lesion are also possible and tissue sampling should be considered.
- **Hyperechoic adrenal nodule caudal pole left adrenal gland** – Differentials include primary adrenal cortical adenoma or adenocarcinoma, pheochromocytoma, myelolipoma, adrenal hyperplasia secondary to pituitary disease or metastatic disease. Ultrasound alone cannot differentiate between functional and non-functional nodules and/or between benign and malignant disease. Small nodules without other evidence of abdominal disease (to suggest metastatic disease) and/or clinical signs (to suggest adrenal disease) are most often incidental and should be monitored.

SECONDARY FINDINGS

- **Chronic Cystitis** - Urinary bladder wall changes are most consistent with chronic cystitis. Infiltrative neoplasia cannot be ruled out but is considered less likely give the location and diffuse nature of the changes.
- **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.

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- **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.
- **Very mild pyelectasia in the left kidney** – Differentials for pyelectasia include pyelonephritis, diuresis, congenital malformation or ureteral or lower urinary tract obstruction.
- **Pancreatic age-related remodeling** – Mild irregularities are consistent with benign age-related change. Low-grade smoldering chronic pancreatitis cannot be ruled out and should be suspected in the face of appropriate clinical signs.

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

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.

A fine needle aspirate of both liver lesions is recommended if patient's coagulation status is appropriate. Alternatively, given the partially cavitated appearance of one of the masses, an exploratory laparotomy with planned excisional biopsies/mass removal of both masses could be considered. Both masses are discrete and likely resectable. However, resectability cannot be guaranteed, and if surgery is elected, a presurgical planning abdominal CT scan could be considered.

Given the urinary bladder wall changes and pyelectasia, a urinalysis and, if indicated based on urinalysis results, urine culture are recommended. If protein is present in an otherwise quiet sediment, protein quantification with a urine protein to creatinine ration is recommended.

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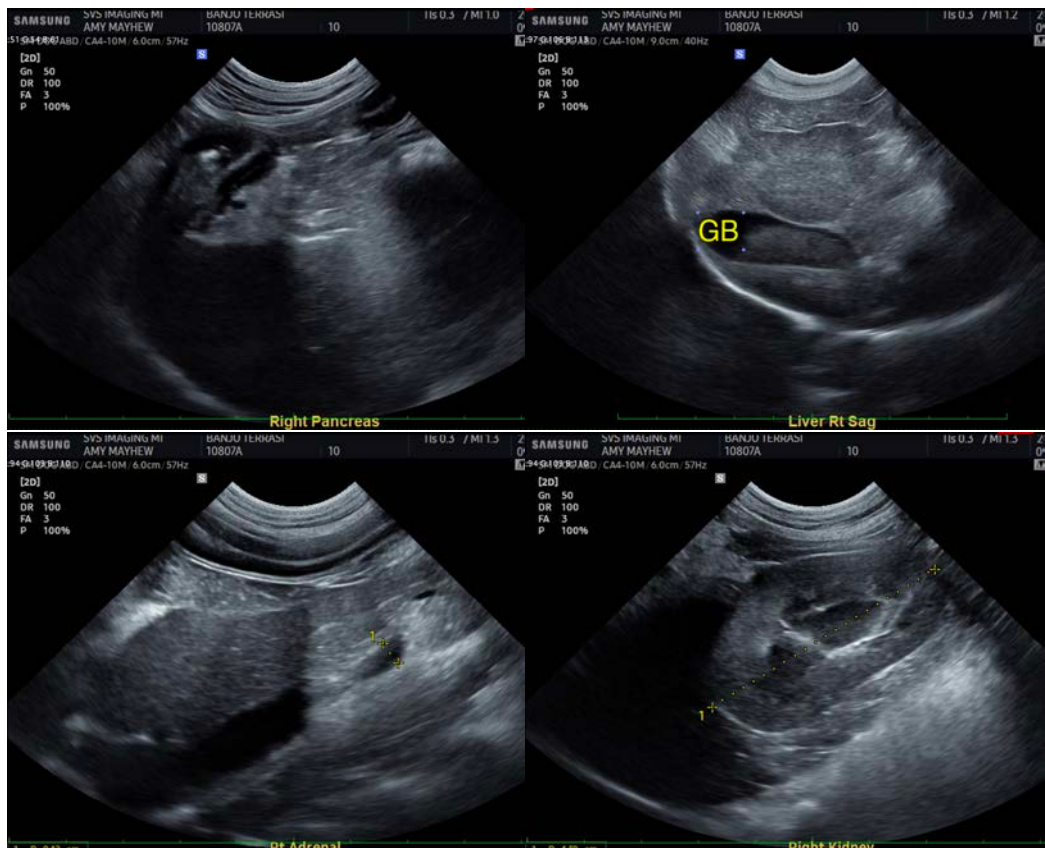
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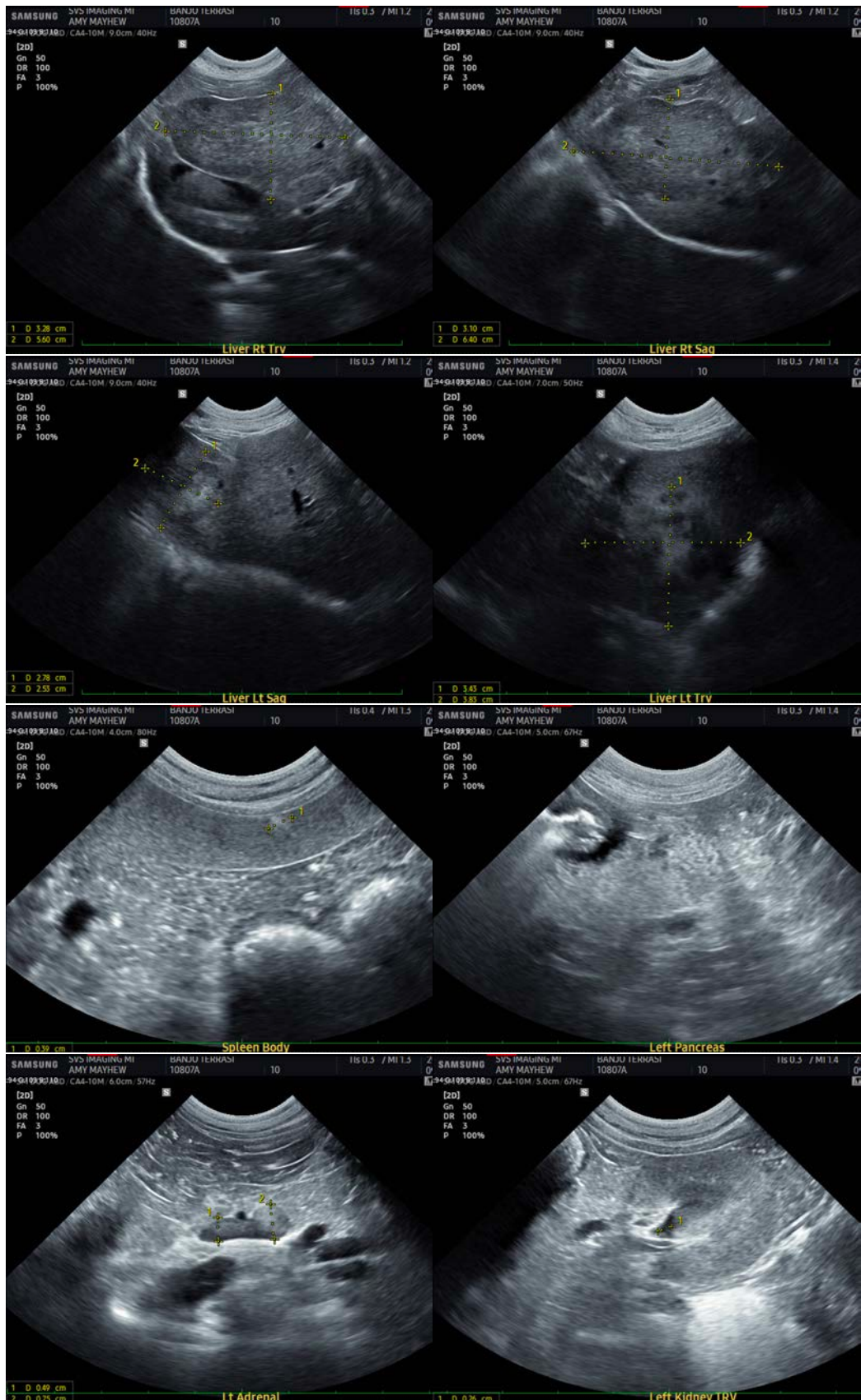
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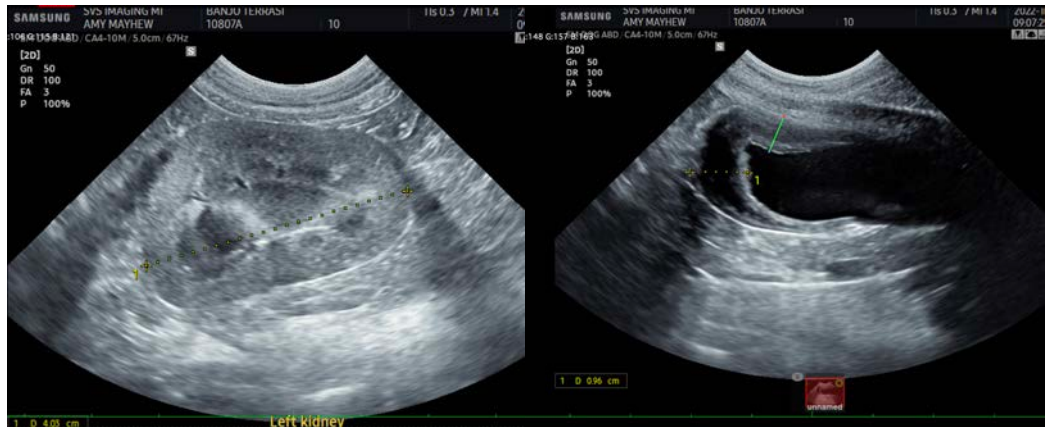
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The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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.

Beth Johnson, DVM, DACVIM
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