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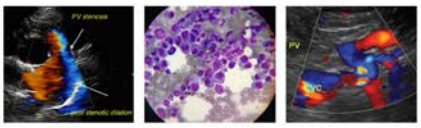
svsimaging.net 309-737-3070



SonoPath
Clinical Sonography & Telecytology
EDUCATIONAL TELECONSULTATION SERVICES™
1-800-838-4268 info@sonopath.com SonoPath.com

PATIENT

Daly Winokur

SPECIES

Canine

BREED

Standard Poodle

SEX

Neutered Male

AGE

12 Years

WEIGHT

40 Pounds

INTERPRETED BY

Beth Johnson, DVM DACVIM

IMAGING PERFORMED BY

Sara Pender, CVT

HOSPITAL NAME

SVS Imaging QC

REFERRING VET

Dr. Grace Zhang

INVOICE

44566

DATE

1/26/23

PRESENTING CLINICAL SIGNS

Chronic elevating liver values, decreasing weight, and intermittent GI distress (regurgitation, possible reflux "hacking"). O reports no major changes in behavior. Patient has been on: - Hill's Z/D food long term - Denamarin since June 2022 - Cerenia PRN; given when has more hacking/gagging episodes - has been on antacids (most recently PPIs last 4 months) - Entyce when hyporexic Latter 3 medications seem to help maintain comfort & weight.

Abnormal PE/Chem/CBC/UA Results: BCS 3-4/9. Bright alert responsive. Heart & lungs auscult clear. No obvious discomfort or masses on abdominal palpation. ALP: Jan 2020: 520 U/L Jun 2020: 1783 Sep 2022: >2400 Jan 2023: 2743 ALT: Jan 2020: 201 U/L Jun 2020: 359 Sep 2022: 346 Jan 2023: 414

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 (0.73 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 (4.69 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 (6.74 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.

Adrenal Glands

Adrenal glands are plump/swollen in size. Normal shape and contour are maintained without evidence of capsular invasion. Corticomedullary structure is unremarkable. Visible surrounding vasculature appears normal. The right adrenal gland measures 2.68 cm long x 1.11 cm at the cranial pole and 0.91 cm at the caudal pole. The left adrenal gland measures 2.6 cm long x 0.73 cm at the cranial pole and 0.93 cm at the caudal pole.

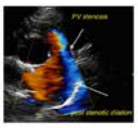
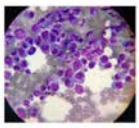
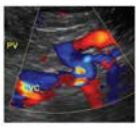
Spleen

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). A hypo- to anechoic non-capsule disrupting nodule is noted in the mid body, measuring approximately 1.0 cm in size. Multifocal mineral foci are noted. Splenic vasculature appears normal.

Liver

Liver is subjectively enlarged with mildly irregular margins. Parenchyma is heterogenous characterized by multiple poorly defined hypoechoic nodules within otherwise hyperechoic liver parenchyma. Additionally, there is a 5-6 cm round, homogeneous, hypoechoic mass with a small mineral center in the mid caudal liver, just adjacent to the gallbladder. Visible vasculature and biliary tree appear normal without distension or congestion.

The gallbladder is non-distended in size. The wall is smooth without visible thickening. Luminal contents are primarily anechoic. There is no evidence of cystic or common bile duct dilation.

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Gastrointestinal

The stomach wall is normal in thickness (canine < 0.5 cm and feline < 0.4 cm) and layering. The lumen of the stomach is empty with 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 (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

Pancreas is prominent (enlarged) in size and mildly irregular in shape with a slightly undulating contour. Parenchyma is coarse in echotexture and heterogenous to hypoechoic in echogenicity.

Free Abdomen

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

The mesenteric lymph nodes are prominent in size with swollen capsular contour. Normal elongated shape (length to width ratio) is maintained. There is no loss of parenchymal detail.

PRIMARY FINDINGS

- **Heterogenous 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.
- **Focal mid caudal liver mass –** This may represent the same benign process affecting the liver diffusely such as nodular hyperplasia. However, infiltrative neoplasia such as primary liver neoplasia (i.e., hepatocellular carcinoma or infiltrative round cell neoplasia, or even sarcoma), or metastatic disease cannot be definitively ruled out.
- **Bilateral adrenomegaly –** consistent with adrenal hyperplasia secondary to pituitary dependent hyperadrenocorticism vs stress or normal variant. Interpret in combination with clinical signs of hyperadrenocorticism.
- **Spleen mineralization –** This is a benign change but can be associated with endocrinopathies, especially hyperadrenocorticism.
- **Hypo to anechoic splenic nodule** – likely represents a benign lesion such as a cyst, hematoma, nodular hyperplasia, extramedullary hematopoiesis, etc., however while considered less likely, infiltrative neoplasia can mimic benign lesions, and cannot be ruled out.
- Chronic active pancreatitis
- **Reactive mesenteric lymph nodes –** infiltrative neoplastic disease cannot be ruled out but is considered less likely.

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.

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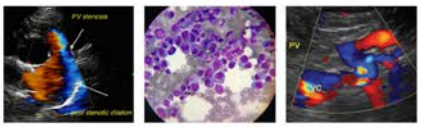

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INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

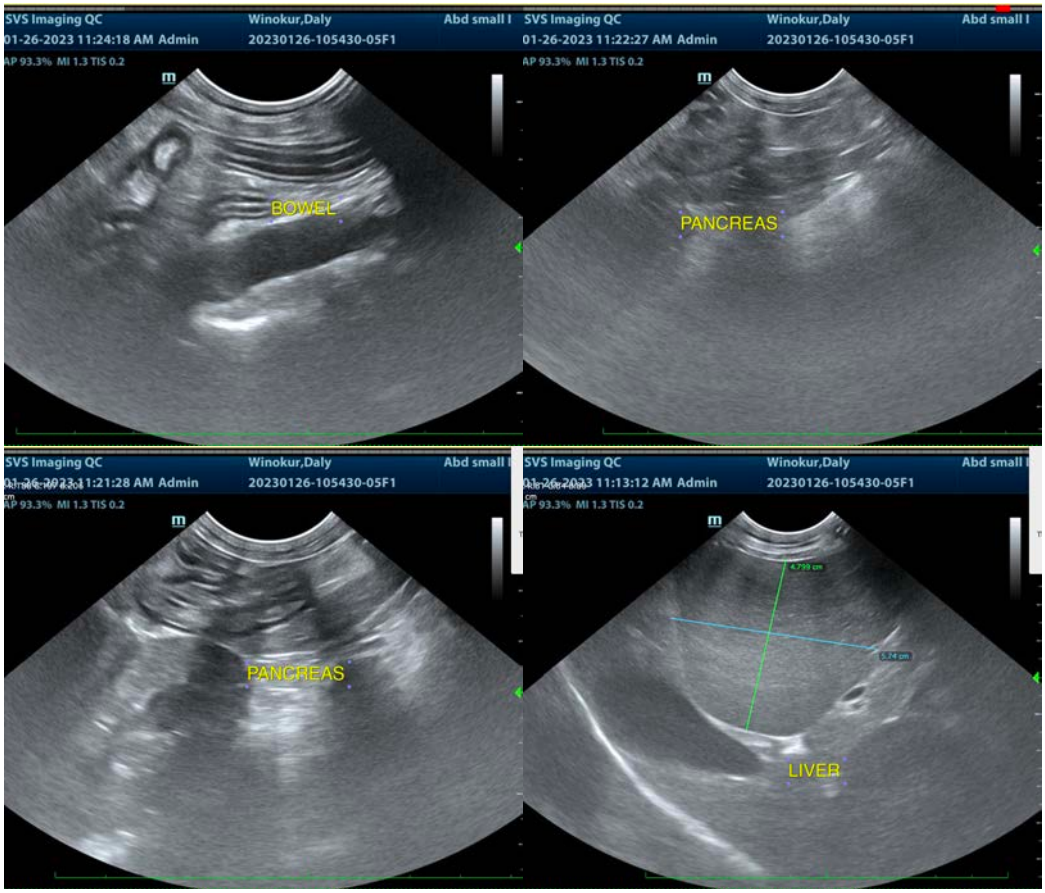
Given the appearance of this ultrasound, the reason for this patient's increased liver enzymes may be a combination of underlying hyperadrenocorticism combined with a more serious infiltrative process affecting the liver. Further evaluation of hyperadrenocorticism via a low-dose Dexamethasone suppression test could be considered in the future but is not recommended in the face of the concurrent gastrointestinal signs, as concurrent illness can result in false positive diagnosis of hyperadrenocorticism. Additionally, further evaluation of hyperadrenocorticism isn't warranted without supporting clinical signs such as PU/PD, polyphagia, etc. Having said that, a fine needle aspirate of the liver is recommended if patient's coagulation status is appropriate.

Additionally, if not recently evaluated, 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.

A blood pressure is also recommended.

In the meantime, given the chronic intermittent GI signs, further evaluation of the gastrointestinal tract and pancreas is recommended, beginning with a gastrointestinal malabsorption panel (including cobalamin, folate, TLI and PLI) to Texas A&M GI Laboratory.

An empirical transition in diet if tolerated to a low-fat bland, easy to digest diet based on trial and error response may be helpful with clinical signs. A 5-day empirical course of Panacur for deworming is also recommended.



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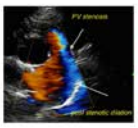
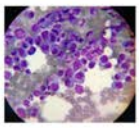
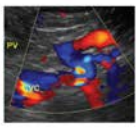

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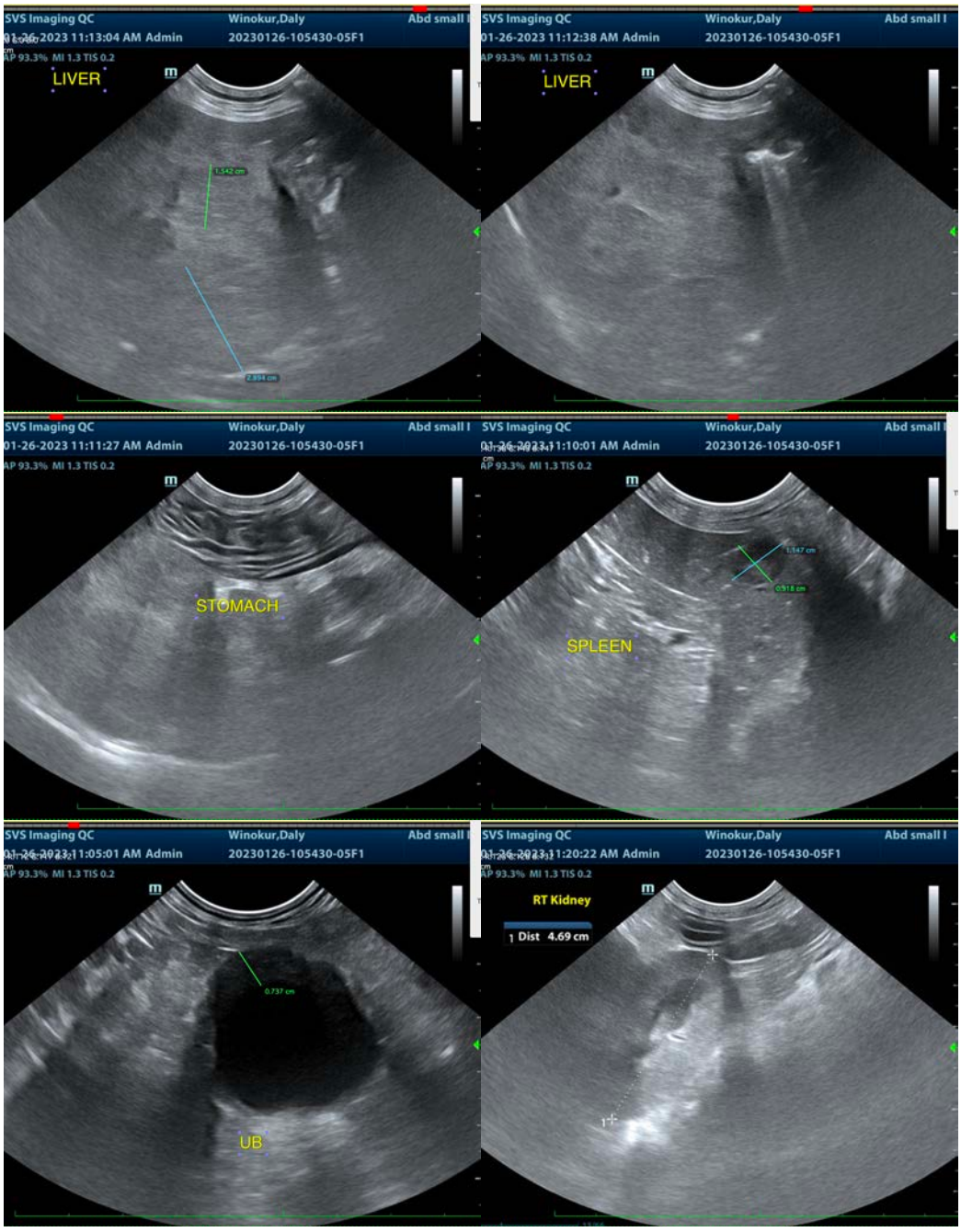

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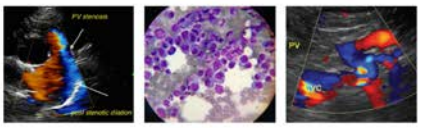

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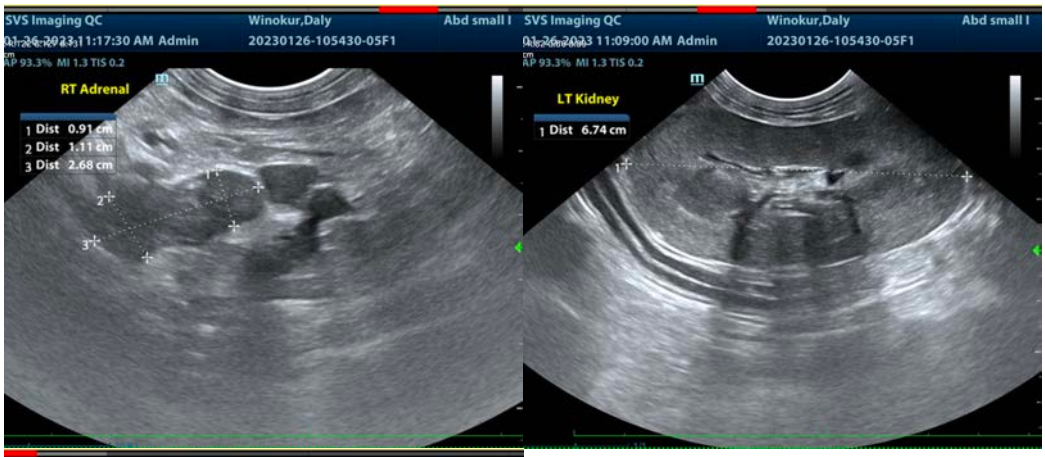

The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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
Beth.Johnson@sonopath.com