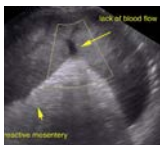
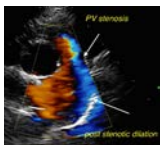
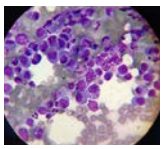
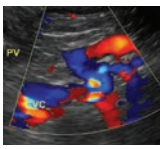
SonoPath
Clinical Sonography & Telecytology
EDUCATIONAL TELECONSULTATION SERVICES™

SonoPath.com™
1-800-838-4268 info@sonopath.com

PATIENT

Luna Caban Betances

SPECIES

Canine

BREED

Golden Retriever

SEX

Spayed Female

AGE

12 Years

WEIGHT

65.8 Pounds

INTERPRETED BY

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

IMAGING PERFORMED BY

Dr. Ferrer

HOSPITAL NAME

Paseos Vet Center

REFERRING VET

Dr. Giselle Bonnet

INVOICE

45418

DATE

2/22/23

PRESENTING CLINICAL SIGNS

Presented as a referral for an abdominal ultrasound for evaluation of increased liver enzymes (ALT and ALP). PT also has hx of increased creatinine levels that improved with IV fluids. Pt is currently on Doxycycline , Denamarin and Metronidazole.

Abnormal PE/Chem/CBC/UA Results: PE: non provided CBC: Platelets 81 (165-500), WBC 17.5 (6-17), Neu (15 (3-12), HCT 32 (37-55) CHEM: ALT 511, ALP did not read as high

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 (7.0 cm). Overall echogenicity is normal with adequate corticomedullary distinction and a typical 1:3 cortex:medulla ratio. There is no evidence of focal 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 (7.06 cm). Overall echogenicity is normal with adequate corticomedullary distinction and a typical 1:3 cortex:medulla ratio. There is no evidence of focal 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 large and irregular, measuring 0.94 cm at the cranial pole, 0.99 cm at the caudal pole, and 3.93 cm in length. It is observed in its normal position cranial to the left renal artery. It is somewhat abnormal in appearance in that there appear to be somewhat ill-defined hyperechoic nodules in both the cranial and caudal poles. The hyperechoic nodule in the cranial pole measures 0.675 cm x 0.87 cm. The nodule in the caudal pole measures 0.76 cm x 0.82 cm. There is no evidence of vascular invasion visualized.

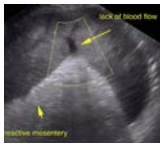
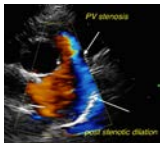
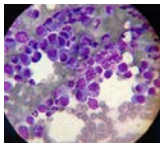
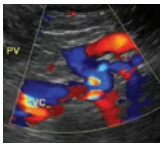
The right adrenal gland is normal in size measuring 0.41 cm at the caudal pole. It is observed in its normal position between the cranial aspect of the right kidney and the caudal vena cava. It is normal in appearance (uniformly hypoechoic) and shape with no evidence of a mass effect.

Spleen

The spleen is large and irregular. The blood flow through the hilus and splenic parenchyma appears normal. There is a large, irregular, hypoechoic, mixed echogenic mass effect arising from the cranial aspect of the spleen measuring 8.4 cm x 8.56 cm.

Liver

The liver is large and irregular. 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 somewhat ill-defined hypoechoic nodules throughout the parenchyma. Examples measure 0.54, 0.47, and 0.44 cm. The caudodorsal aspect of the liver appears somewhat rounded and irregular.

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The gallbladder lumen is moderately distended. The wall of the gall bladder is not thickened and has a smooth mucosal surface. Luminal contents are mild and 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 0.34 cm 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. Duodenum wall measures 0.40 cm. Jejunum wall measures 0.36 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. Colon wall measures 0.15 cm.

Pancreas

The pancreas is normal and isoechoic to surrounding mesentery. There is no evidence of nodules or cystic lesions. There is no evidence of regional mesenteric inflammation or fluid.

Free Abdomen

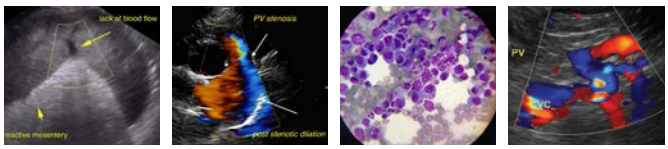
Evaluation of the peritoneal cavity did not reveal any evidence of effusion, or subjective lymphadenomegaly. The Medial iliac nodes appear normal and there was no evidence of a caudal aortic thrombus at the bifurcation. The omentum is of normal uniform echogenicity.

ULTRASONOGRAPHIC FINDINGS

- Hyperechoic nodules visualized in the cranial and caudal poles of the left adrenal gland – Adrenomegaly could be consistent with neoplasia (e.g., adenoma, carcinoma, pheochromocytoma), hyperplasia, inflammation, other.
- Large, mixed echogenic, hypoechoic splenic mass – A focal solid mixed echogenicity mass is visualized associate with the spleen. This mass distorts the splenic capsule. Differentials include: benign lesions (lymphoid hyperplasia, hemangioma etc..) or cancerous lesions (hemangiosarcoma, lymphoma, histiocytic sarcoma etc..)
- Large, heterogeneous liver with ill-defined hypoechoic 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. The nodules observed trend toward a more benign process but underlying neoplasia cannot be ruled out.

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

The liver appears large and heterogeneous with ill-defined hypoechoic nodules. Some of the margins are rounded and slightly irregular as well. These findings could be consistent with a vacuolar hepatopathy, although I cannot rule out the possibility of a very ill-defined mass effect (hepatoma, etc.). Consider a liver function test and a fine needle aspirate of the liver to start (a fine needle aspirate was performed



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during today's exam).

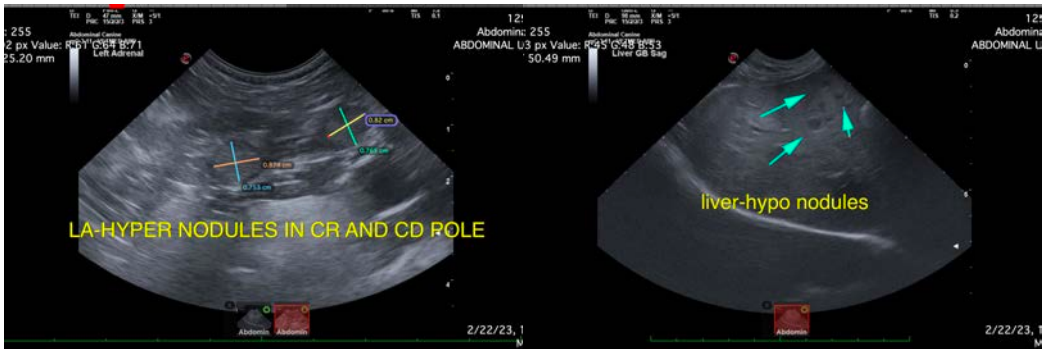
There is a large, irregular, hypoechoic, mixed echogenic mass effect on the cranial aspect of the spleen. This mass lesion is somewhat concerning, as it is large in size, and could represent a benign or neoplastic process. Regardless, splenectomy is likely recommended for both diagnostic and therapeutic purposes, as even a benign lesion such as this would be at risk for rupture.

Recommend three view thoracic radiographs to evaluate for possible concurrent thoracic disease/involvement.

The left adrenal gland appears somewhat large in comparison to the right adrenal gland, and there are ill-defined hyperechoic nodules in the cranial and caudal poles. These lesions could represent benign or neoplastic lesions and they could be non-active or secreting hormones. This could also be contributing to the elevation in ALP reported. Correlate these findings with clinical signs (does this patient have symptoms consistent with Cushing's disease?) and consider the following:

- Recommend blood pressure evaluation. If hypertension is present, recommend measuring catecholamines, looking for possible pheochromocytoma.
- If symptoms of Cushing's are present, consider adrenal function testing.
- If there is no hypertension and no signs of Cushing's, you could consider following this with ultrasound (recheck in 2-3 months). If it appears to be changing, then further intervention may be warranted.
- Alternately, you could consider a contrast CT scan to further define these lesions and consider surgical removal.

Given this constellation of issues, I would consider a splenectomy, provided chest radiographs are normal. At that time, you could visibly assess the liver for a possible mass effect and biopsy abnormal tissue. Additionally, the left adrenal gland could be visualized. If an aggressive path is desired, you could consider adrenalectomy at the same time. I feel the priority is the splenic mass lesion, as the results of this testing may guide you in how to proceed with the other issues.



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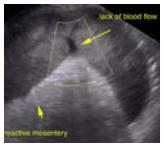
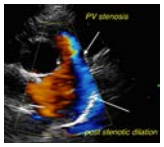
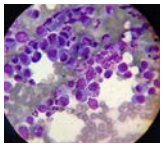
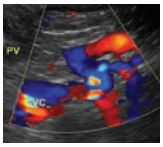

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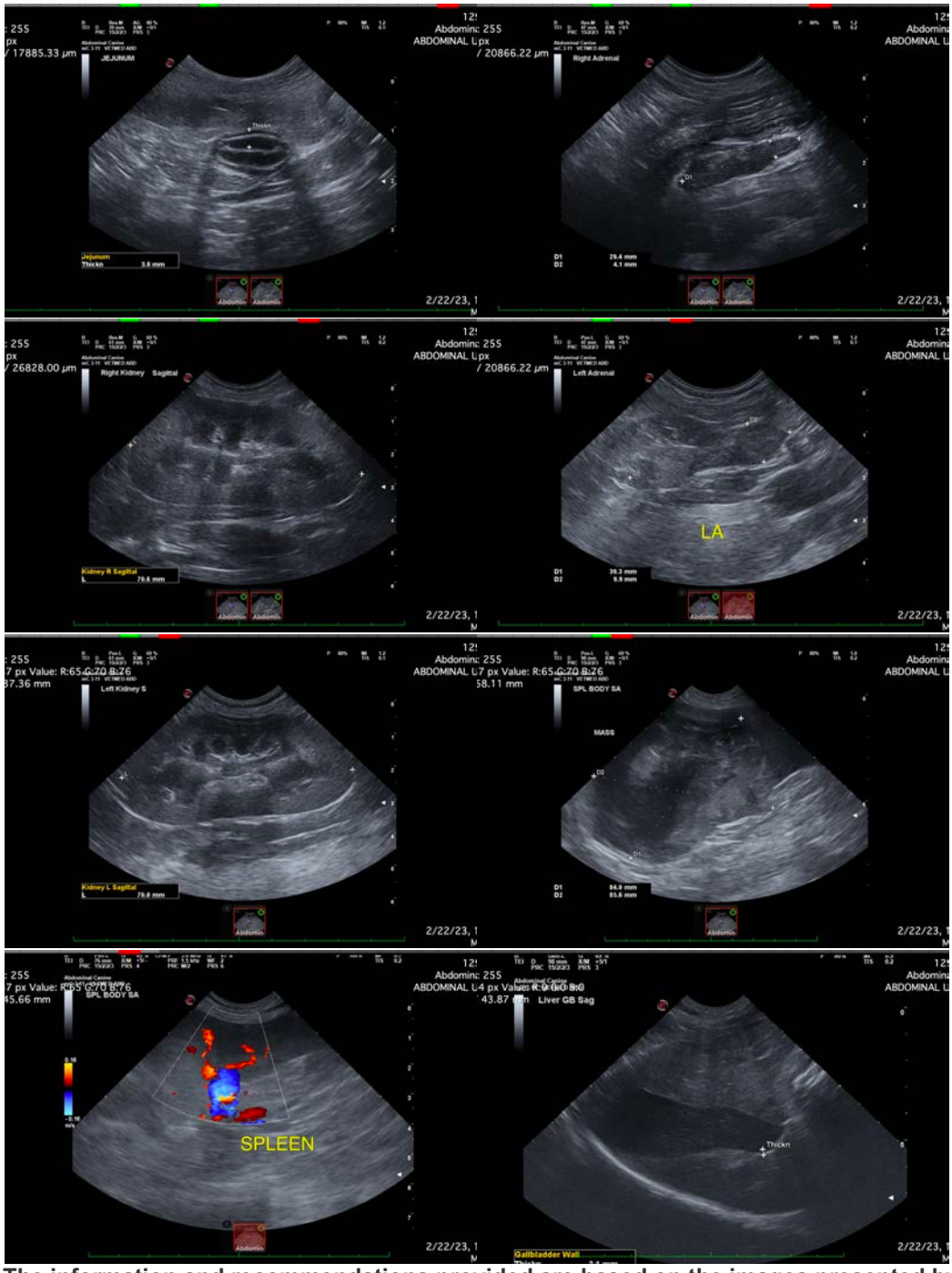

The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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.

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

kathleen.sennello@sonopath.com