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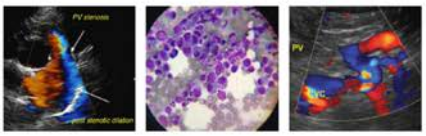

SonoPath
Clinical Sonography & Telecytology
EDUCATIONAL TELECONSULTATION SERVICES™
1-800-838-4268 info@sonopath.com SonoPath.com

PATIENT

Charlotte Reilly
10881A

SPECIES

Canine

BREED

Shih Tzu

SEX

Spayed Female

AGE

16 Years

WEIGHT

3.9 kg

INTERPRETED BY

Beth Johnson, DVM
DACVIM

IMAGING PERFORMED BY

Tom McNeill

HOSPITAL NAME

SVS Imaging CT

REFERRING VET

Madison VS –
Dr. Maller

INVOICE

44459

DATE

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PRESENTING CLINICAL SIGNS

Charlotte presented to the MVS Emergency Service on Jan 24, 2023, at 7:55pm, for evaluation of being painful in back end. Owner was playing with Charlotte and Charlotte began to seem uncomfortable, started panting and shaking and when owner went to pick Charlotte up, she started to cry. Owner found Charlottes leg of the sweater was twisted and crossed. Charlotte did not want owner to take sweater off her or lay her on her back as she would just scream. Charlotte has had weakness in her back end/legs but seems as though it has gotten progressively worse with age and will fall over when she tries to shake. Stools have seemed smaller the past 2 days but owner attributed it to the difficulties Charlotte has with her back end and the posturing. Owner cleaned Charlottes vulvar area with chlorhexidine last night and Charlotte seemed uncomfortable, then also but owner attributed it to the cleaning even though she does not typically react that way. Appetite has been less but Charlotte will eat people food (meats) just fine.

Abnormal PE/Chem/CBC/UA Results: Blood pressure: 220 mmHg CSU Score: 2/4; very painful around both stifles (L>R), NWB lameness LH with adduction of limb Thorax: Grade II/VI left sided systolic heart murmur; lungs with mild increase in BV sounds, but eupneic Abdomen: Hepatomegaly; abdomen was tense, and Pt groaned on presentation Musculoskeletal: Motor x 4, but does not want to ambulate well; NWB LH with adduction under ventrum; crepitus felt on both knees with bilateral MPLs; does not want to use knees when ambulating, and occasionally is plantigrade Serial BP: 11p 220mmHg (HR 124), 2a 170mmHg (HR 104) Pelvic limb radiographs: - Radiographic findings are consistent with severe osteoarthrosis likely secondary to medial patella luxation and cranial cruciate injury. However, the appearance of the lateral aspect of the left tibial plateau suggests a subchondral lesion that could be due to a meniscal injury or an incomplete fracture of the lateral condyle, which could explain the more severe clinical signs in this limb. - Bilateral mild osteoarthrosis of the coxofemoral joints. - Enthesophytes at the insertion of the right gluteal muscles in the major trochanter. lasma Chemistry Profile with Electrolytes: BUN 77, ALB 4.4, TP 8.9, TBILI 2.3, Na 162 Complete Blood Count: PCV - 68% (35-55) TS - 8.0 (5.2-8.2) CBC otherwise unremarkable Urinalysis: cystocentesis, pale yellow, USG 1.044, protein 500mg/dL 4Dx Snap Test: Lyme - Neg Ehrlichia - Neg Anaplasma - Neg Heartworm - Neg

ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN

Urinary System

The urinary bladder is moderately 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.

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 3.11 cm. The right kidney measures 3.13 cm. Small cortical cysts are noted in the caudal poles of both kidneys. A small non-obstructive nephrolith is noted in the left kidney.

Adrenal Glands

The right adrenal gland is normal in size (0.54 cm at the cranial pole and 0.40 cm at the caudal pole), shape and contour. A hyperechoic nodule is noted in the cranial pole. Nodule does not disrupt normal shape and/or architecture. Visible surrounding vasculature appears normal.

The left adrenal gland is normal in size (0.34 cm at the cranial pole and 0.48 cm at the caudal pole), shape and contour. Corticomedullary structure is unremarkable. Visible surrounding vasculature appears normal.

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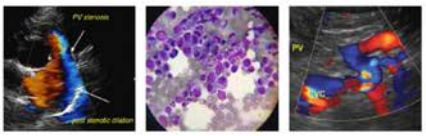

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Spleen

The 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 0.39 cm hypo- to anechoic nodule is noted in the mid body, non-capsule disrupting. 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, in the deep liver on midline, there is a 1.7 cm x 1.9 cm discrete hyperechoic nodule. Visible vasculature and biliary tree appear normal without distension or congestion.

Gallbladder is moderately distended with anechoic bile as well as mild 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 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

The pancreatic parenchyma is appropriately isoechoic to surrounding tissue. Visible capsule is smooth and normal in contour. 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.

ULTRASONOGRAPHIC 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.
- **Deep discrete liver nodule –** Differentials for a discrete liver nodule include primarily benign changes such as nodular hyperplasia, fibrosis of an old hematoma, granuloma, etc.; however, while considered less likely, primary hepatic neoplasia, infiltrative round cell neoplasia and metastatic disease can mimic benign lesions and cannot be definitively ruled out.
- **Hyperechoic adrenal nodule (cranial pole right adrenal gland) –** Differentials include primary adrenal cortical adenoma or adenocarcinoma, pheochromocytoma, myelolipoma, adrenal hyperplasia secondary to pituitary disease or metastatic disease. Ultrasound alone cannot

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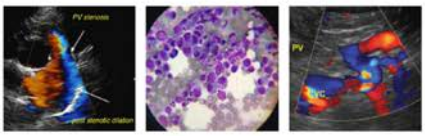

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differentiate between functional and non-functional nodules and/or between benign and malignant disease. Small nodules without other evidence of abdominal disease (to suggest metastatic disease) and/or clinical signs (to suggest adrenal disease) are most often incidental and should be monitored.

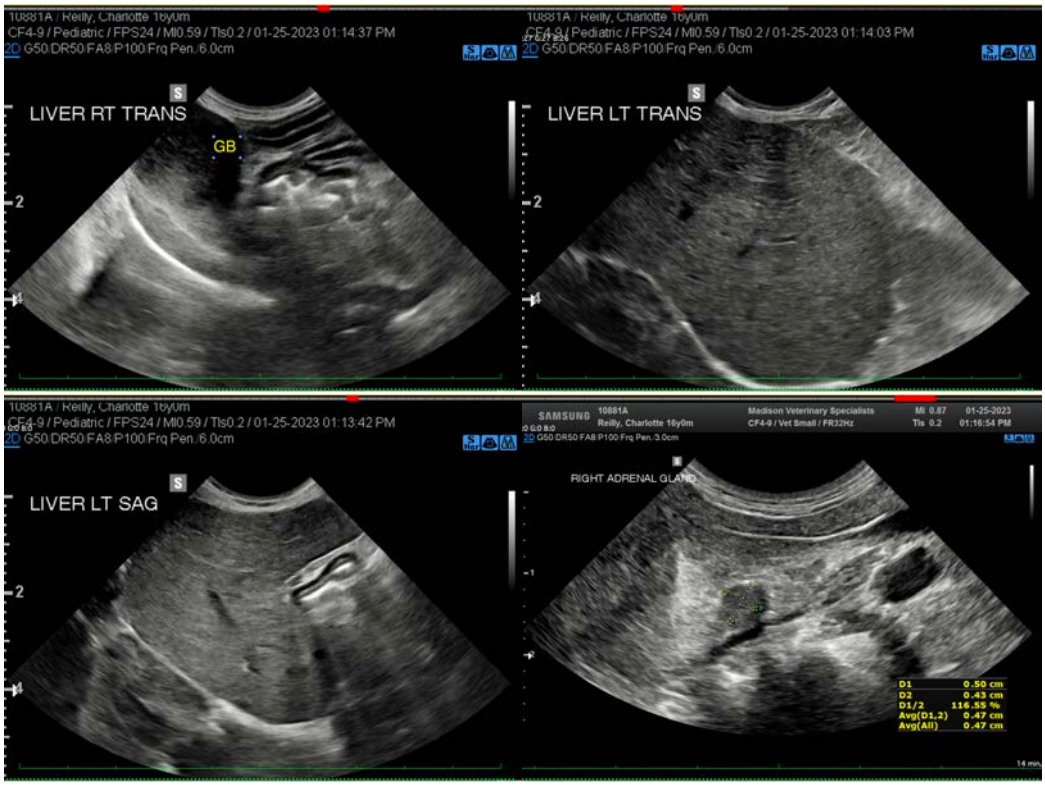
- **Mild gallbladder debris -** Cholecystic debris is of unknown clinical significance. It can be seen with biliary stasis from fasting or illness. Cholecystic debris is not necessarily related to hepatobiliary disease. Echogenic bile is most commonly an incidental finding in dogs and should be interpreted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

- **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.

- Age related kidney changes with small bilateral cortical cysts and a non-obstructive nephrolith in the left kidney.

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

The pathology described above is most consistent with relatively unremarkable aging and other benign changes. There is not a visible source for this patient's reported pain. The liver is the most significant change, and a fine needle aspirate of the liver could be considered if patient's coagulation status is appropriate. However, that is not likely the source of this patient's pain. Therefore, further recommendations include further evaluation for additional sources of neurologic and/or orthopedic pain, and management of those problems if possible.



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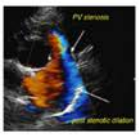
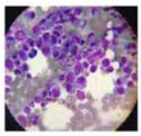
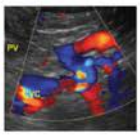

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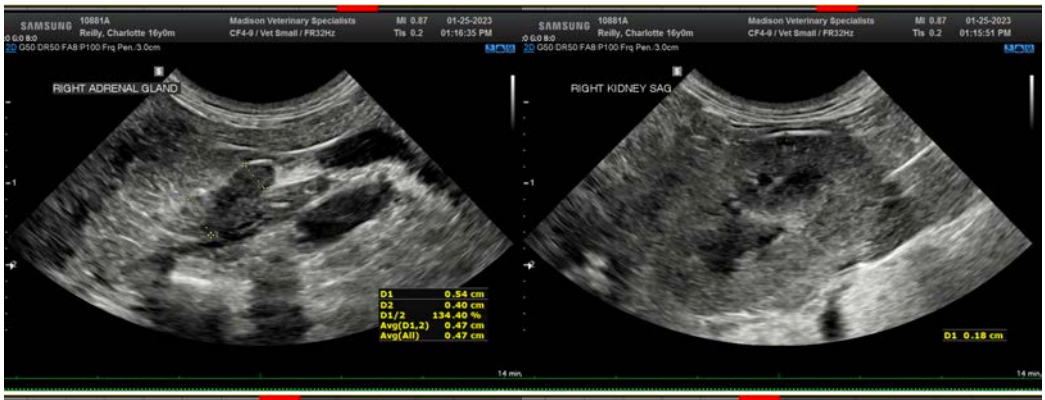

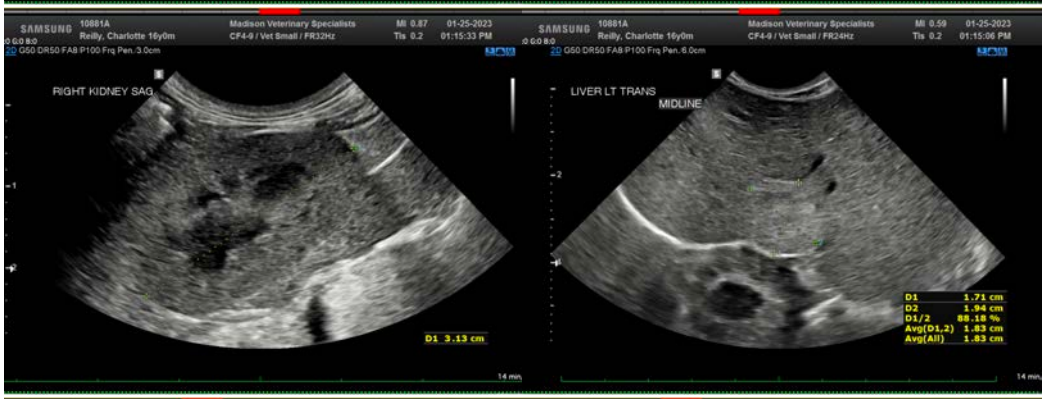

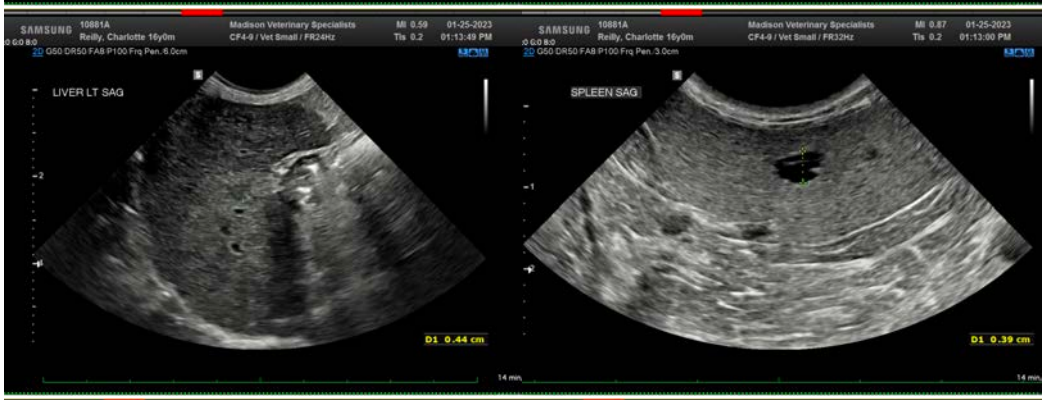

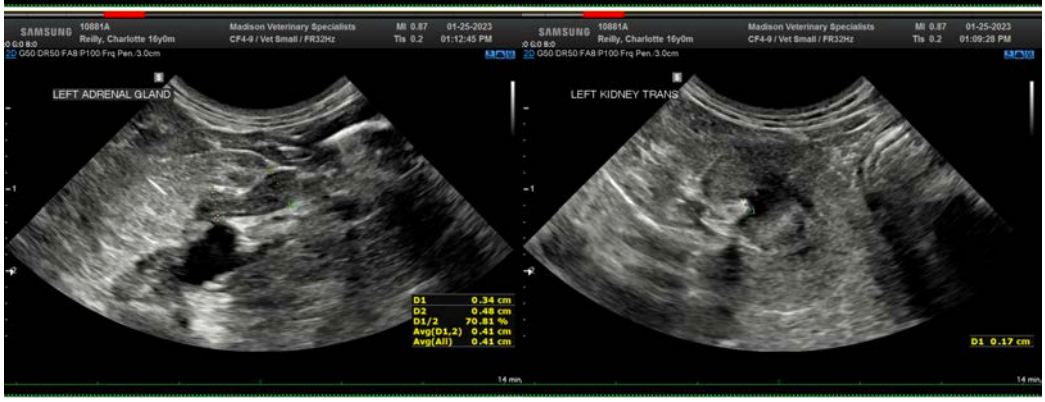

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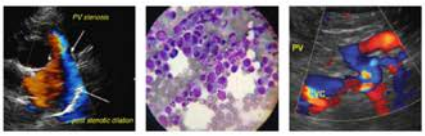

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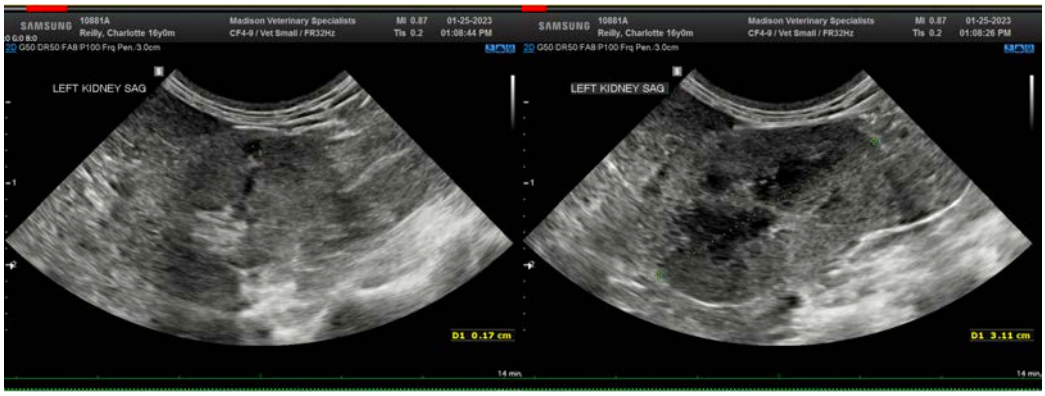

The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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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