

**PATIENT**

Maggie Hoover

SPECIES

Canine

BREED

Bichon Frise

SEX

Spayed Female

AGE

12 Years

WEIGHT

28.6 Pounds

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

Amy Mayhew, LVT

HOSPITAL NAME

SVS Imaging MI

REFERRING VETRochester VH –
Dr. Kelly Totin**INVOICE**

44357

DATE

1/19/23

PRESENTING CLINICAL SIGNS

Recheck liver values.

Abnormal PE/Chem/CBC/UA Results: Discussed bw and seeing elevation in ALT as well as more of an elevation in ALP. At this time recommend pursuing abdominal US as we discussed. I also recommend starting on metro and amoxi as may have secondary infectious cause

ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN**Urinary System**

The urinary bladder is moderately distended with anechoic contents. No masses or inflammatory changes. Multiple small cystoliths, including small cystoliths extending into the proximal, are present, all appearing to be less than 0.2 cm in size. 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 infarcts observed. The right kidney measures 6.0. A small non-obstructive nephrolith is present in the right kidney. The left kidney measures 5.82 cm with pyelectasia noted at 0.29 cm in the transverse view.

Adrenal Glands

The right adrenal gland is normal in size (0.35 cm at the cranial pole and 0.46 cm at the caudal pole), shape and contour. Corticomedullary structure is unremarkable. Visible surrounding vasculature appears normal.

The left adrenal gland is normal in size (0.47 cm at the cranial pole and 0.62 cm at the caudal pole), shape and contour. Corticomedullary structure is unremarkable. Visible surrounding vasculature appears normal.

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). No focal nodules or masses are observed. 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. Visible vasculature and biliary tree appear normal without distension or congestion.

Gallbladder is mildly overdistended with a moderate amount of non-dependent, mildly aggregated/inspissated sludge. Hypo to anechoic cystic areas are noted between the gallbladder sludge and luminal wall. The wall is otherwise smooth without visible thickening. There is no evidence of cystic or CBD dilation. There is no evidence of effusion.

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.

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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.

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

Pancreas**BREED**

Bichon Frise

The observed pancreas appears appropriately isoechoic to surrounding omental fat. The capsule is mildly irregular in shape. Parenchyma is mildly heterogenous and coarse. Changes are most appreciated on the right side. There is no visible pancreatic duct dilation. There is no evidence of active peripancreatic inflammation.

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Free Abdomen

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

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There is no apparent lymphadenopathy noted in these images.

PRIMARY FINDINGS

- **Emerging mucocele** – 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. The non-dependent nature of this sludge combined with the cystic areas are suggestive, however, of possible emerging cystic mucosal hyperplasia or early gallbladder mucocele.
- **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.
- Small urinary bladder cystoliths and proximal urethroliths

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DACVIM**SECONDARY FINDINGS**

- **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.
- **Age related kidney changes with a small non-obstructive nephrolith on the right and mild pyelectasia on the left** – Differentials for pyelectasia include pyelonephritis, diuresis, congenital malformation or ureteral or lower urinary tract obstruction.

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Based on this ultrasound, likely differential for this patient's progressively increased liver enzymes/cholestatic pattern is the emerging gallbladder mucocele. Recommendations include beginning empirical medical management with hepatic nutraceuticals, including Ursodiol +/- broad-spectrum antibiotics with monitoring of liver enzymes for improvement. If liver enzymes improve, antibiotics should be continued until they either plateau/normalize. However, if improvement is not noted, antibiotics should not be continued long term. If clinical signs are present, including decreased appetite, nausea, especially cranial abdominal pain, etc., a more aggressive intervention up to an including an exploratory laparotomy for a cholecystectomy and liver biopsy may be warranted.

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Additionally, if not recently evaluated, 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 ratio is recommended.

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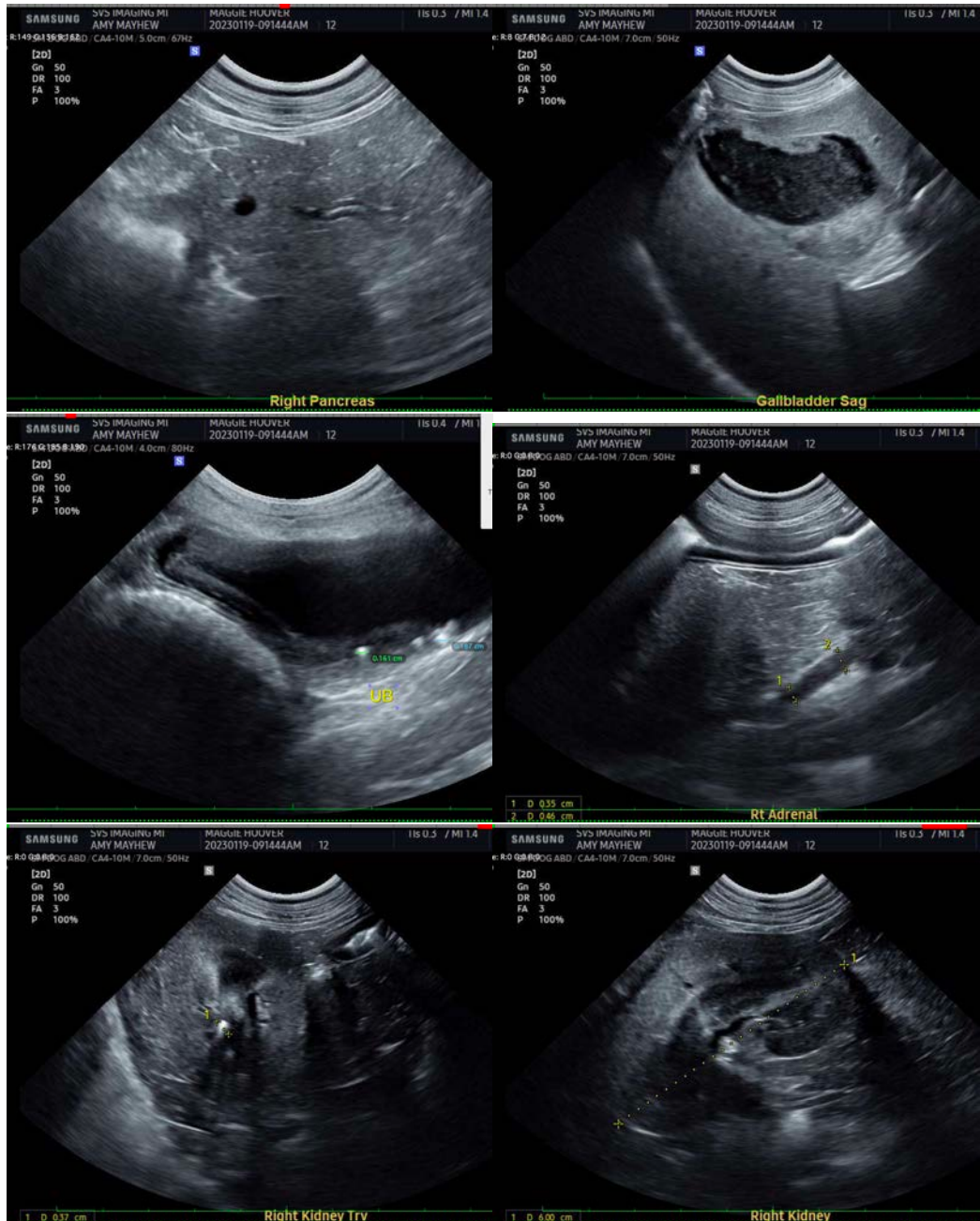
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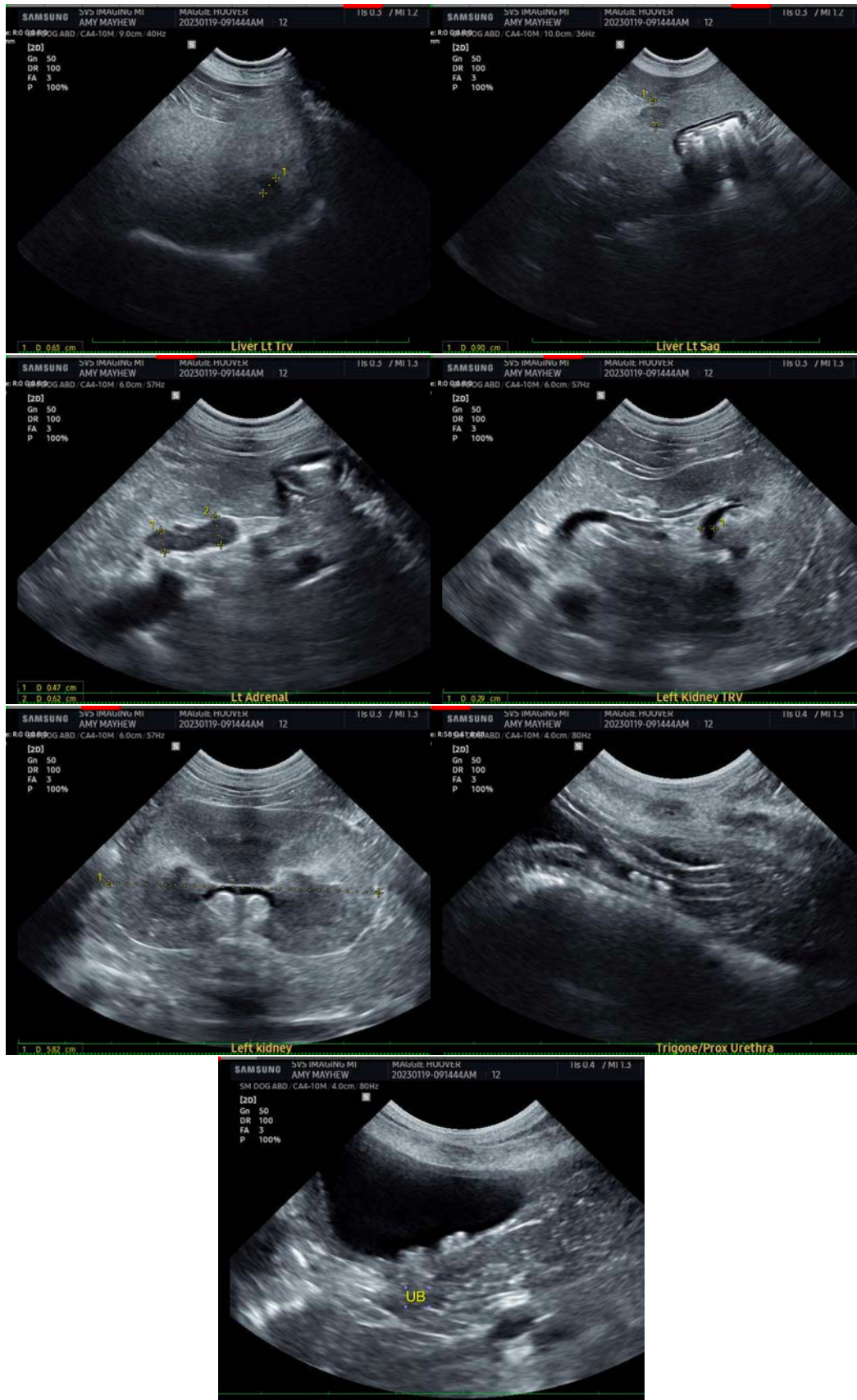
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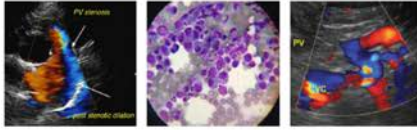
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The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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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.

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Beth.Johnson@sonopath.com

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