


PATIENT

Susie May Olson

SPECIES

Feline

BREED

DLH

SEX

FS

AGE

16 years

WEIGHT

10.12 lbs.

PRESENTING CLINICAL SIGNS

Patient presented in October in respiratory distress subsequent to a suspected/reported seizure. The respiratory distress resolved with oxygen therapy. Abnormalities were identified on lab work (see below). Subsequent to this visit, Susie May has had a progressively worsening appetite and energy level. She has lost significant weight. Earlier this week, she had some sort of episode (owner thought another seizure) - owner found her in the bathroom after hearing a noise, she was extremely lethargic and disoriented for several hours, and since then has had neuro deficits to her RH leg (knuckling, decreased sensation, slight weakness). Exam: Patient is quieter than normal. Some body fat deposits retained but with marked loss of muscle mass. Suspected jaundice. Moderate dehydration. Grade 3/6 systolic heart murmur with mild arrhythmia (occ. "skipped" beat). Mild abdominal discomfort on palpation. RH CP absent, superficial sensation absent, deep pain decreased. Voluntary motor present, but perhaps slightly weak. RH paw cooler than LH, but femoral pulses palpable.

Abnormal PE/Chem/CBC/UA Results: From October: (Sr. Screen with Cardiopet bNP) CBC: Platelets possibly decreased, but platelet clumps present Chem: SDMA 22, ALT 1052, AST 649, ALP 343, GGT 13, bilirubin 6.2, unconjugated bilirubin 2.7, conjugated bilirubin 3.5. Cardio pet BNP 323 Urinalysis: SG 1.022, bilirubin 3+, 1+ granular casts; Microscopic hematuria is also seen, but is likely to be iatrogenic

ULTRASONOGRAPHIC EXAMINATION OF THE HEART & ABDOMEN
INTERPRETED BY

 R. McKenzie Daniel,
 DVM, DABVP
 (Canine and Feline)

IMAGING PERFORMED BY

Jenna Walsh, CVT

HOSPITAL NAME

Santa Clara AH

REFERRING VET

Dr. Brasted-Maki

INVOICE

12724

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12/3/21

| FELINE CARDIAC PARAMETERS | BODY WEIGHT (kg) | HR (BPM) | IVSd (cm) | LVIDd (cm) | LVWd (cm) | FS (%) | EF (%) |
|--|------------------|---------------------------|--|-----------------|-----------------|----------|--------|
| NORMAL PARAMETER | ----- | 150-240 | 0.3-0.6 | 1.0-2.1 | 0.25-0.6 | 35-67 | 80-100 |
| PATIENT | | 2.4 | 0.68 | 1.3 | 0.60 | 60 | 94 |
| FELINE CARDIAC PARAMETERS | LA/AO (Boon) | LA/AO HEART BASE (Sisson) | LA 2D 4-chamber long axis AS to FW (Sisson) (cm) | LVOT VEL. (m/s) | RVOT VEL. (m/s) | IVRT (m) | |
| NORMAL PARAMETER | <1.5 | 0.88-1.79 | 0.7-1.7 | <1.6 | <1.3 | 40-60 | |
| PATIENT | 1.2 | 1.3 | 1.2 | 1.0 | 1.2 | NM | |
| Adapted from June Boon, Veterinary Echocardiography, 1998 Sisson D et al. JVIM 1991; 5: 232, Jacobs et al. Am J Vet Res 1985; 46:1705 | | | | | | | |



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Cardiac Presentation

The echocardiogram in this patient demonstrated normal **left atrial** size and structure with no evidence of "smoke" or thrombi. The cranial and caudal **mitral** valve leaflets appeared mildly thickened with some insufficiency noted on Doppler. The **left ventricle** presented mild excessive free wall and septal thicknesses with hypertrophic tendency compared to normal for this species. The **myocardium** presented essentially normal echogenicity without immediate signs of fibrotic or ischemic disease. Mild myocardial remodeling was present, which is consistent with age-related change. **Contractility** of the ventricular walls was considered excessive for this patient evidenced by the elevated fractional shortening measurement. The **left ventricular outflow** tract demonstrated turbulent laminar flow. Subjective assessment of the **right atrium** and auricle revealed normal size, structure and content. No evidence of masses was noted. **Tricuspid** valvular assessment demonstrated linear morphology. The **right ventricle** was of normal size with normal chordae structure, myocardial echogenicity and thickness. **Pulmonic** tract assessment revealed normal valve structure, laminar flow, and diameter. No visible **pericardial** or free pleura fluid was noted. No echographically detectable evidence of infiltrative disease was visible. The **mediastinum** was free of masses in the visible window.

Urinary System

The urinary bladder, trigone, and cystourethral junction exhibited normal thickness and tone. Anechoic urine was present in the lumen with no uroliths or sediment. The ureteral papillae were normal. The ureters were not visible which is normal. No evidence of inflammatory or neoplastic changes was noted.

The area of the aortic trifurcation was free of pathology.

Normal size and margination were present in the kidneys. A normal 1:3 cortex / medulla ratio was maintained. The medulla and cortices were uniform in texture with some increased echogenicity and mild to moderate loss of corticomedullary symmetry and definition expected for the age of the patient. No evidence of pelvic dilation was present. Focal cranial cortical infarction was present in the left kidney. The left kidney measured 3.5 cm in length. The right kidney measured 4.1 cm in length.

Adrenal Glands

The left adrenal gland was uniform in size and contour with a uniformly hypoechoic parenchyma. The left adrenal gland measured 0.5 cm width. The right adrenal gland was uniform in size and contour with a uniformly hypoechoic parenchyma. The right adrenal gland measured 0.41 cm width.

Spleen

The spleen exhibited a finely textured and homogenous parenchyma which was hyperechoic to the liver and renal cortical parenchyma. The capsule was smooth and regular without apparent expansion. The splenic vasculature at the hilus was normal in volume with no evidence of congestion or thrombosis. Acute to chronic inflammatory, neoplastic, or benign parenchyma changes were not noted.



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Liver/ Gallbladder

The liver was subjectively normal in size, structure, and contour. The liver parenchyma was mildly nonuniform and hypoechoic to the spleen with a moderate coarse echotexture and subjective mild to benign parenchymal remodeling. The hepatic and portal vasculature were normal in appearance without signs of congestion. The gallbladder was non-distended in size yet prominent to mildly hypoechoic gallbladder walls, suggestive of gallbladder wall edema. The gallbladder wall measured 0.2 cm width. The common bile duct exhibited moderate distention with ductal echogenic nonmineralized mucus. The common bile duct dilation extended to the approximate level of the common bile duct. Overt evidence of obstructive common bile duct pathology was not definitively evident, yet the duodenal papilla was indistinctly visualized. The common bile duct dilation measured 0.5 cm.

Gastrointestinal

The stomach presented intact wall layering with a normal wall layer ratio. The lumen of the stomach was empty with no signs of ileus, obstruction, or foreign material.

The small intestine presented intact wall layering with 1:3 muscularis/mucosa ratio. The lumen of the small intestine was empty with no signs of ileus, obstruction, or foreign material. The duodenum wall width measured 0.27 cm. The jejunum wall width measured 0.20 cm. The ileocolic wall width measured 0.33 cm.

Normal visible colon wall layers were present with apparent formed feces in lumen.

Pancreas

The left limb, right limb, and base of the pancreas presented hypoechoic to heterogeneous echogenicity compared to adjacent omental fat. Mild asymmetrical capsule margination was present with mild variable parenchymal swelling and mild peripancreatic reactivity / inflammation. No overt evidence of neoplasia. Mild pancreatic duct dilation was present.

Free Abdomen

No omental masses, lymphadenopathy, or peritoneal effusion were noted.

ULTRASONOGRAPHIC FINDINGS

Primary Findings

- Mild HCM with myocardial remodeling
- Normal left atrium
- Chronic renal changes with left kidney infarction
- Mild active to chronic active pancreatitis
- Cholangitis / cholangiohepatitis pattern exhibiting moderate generalized common bile duct dilation with mucoduct



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- Sonographically unremarkable gastrointestinal tract

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INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

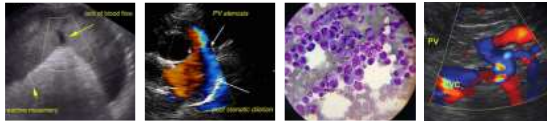
HCM is a rule-out diagnosis if the patient is deemed euthyroid and normotensive. The lack of left atrium enlargement indicates that the risk of future complication is low. The murmur is suspected to be secondary to a flow murmur, given the mild LV hypertrophic changes. No indication for cardiac medications, given the normal left atrium size. T4 levels are recommended if not done. Conservative monitoring at this time is recommended with recheck echocardiogram suggested in 6 months, sooner if clinical signs consistent with heart disease develop. The normal left atrium size is not overtly consistent with thrombus formation.

Assuming normal clotting status, ultrasound-guided FNA of the liver could be considered for screening cytology and potential identification of inflammatory cell type if present. Potential for emerging post hepatic obstruction owing to mucus or non-visualized pathology cannot be definitively excluded.

Although no evidence of structural gastrointestinal pathology was present, potential Triad Disease may be considered in this patient. Further assessment may include a GI panel to include PLI/TLI/Cobalamin/Folate.

Underlying neurological disease may potentially be a contributing factor to the weight loss. Empirically, cholangiohepatitis /pancreatitis therapy protocol with close monitoring of hepatic enzymes and degree of cholestasis with as-needed GI support is suggested.





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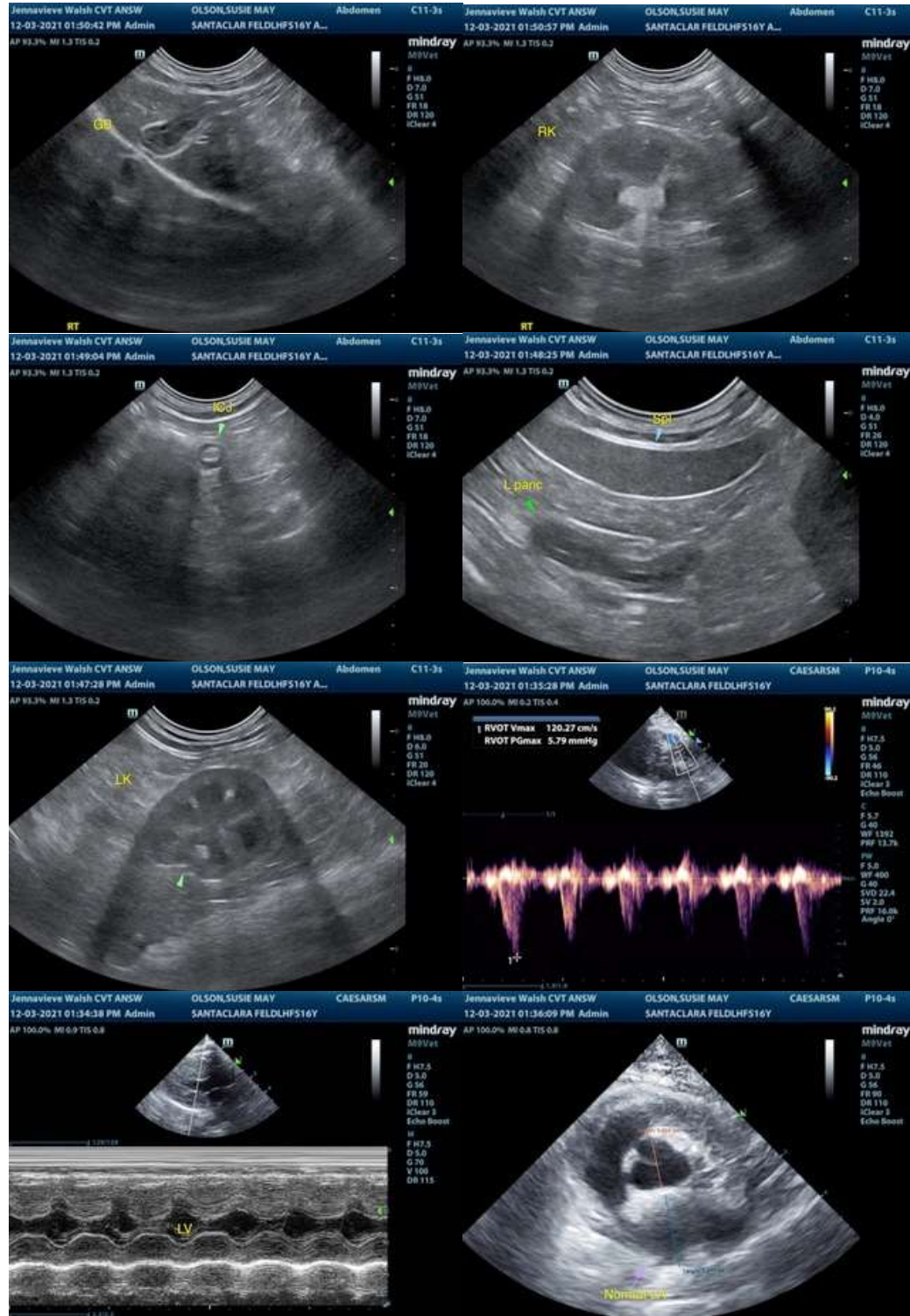
Dr. Brasted-Maki

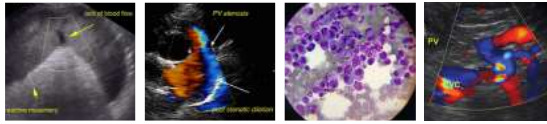
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The information and recommendations provided are based on the images presented by the referring veterinarian. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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.

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info@SonoPath.com

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