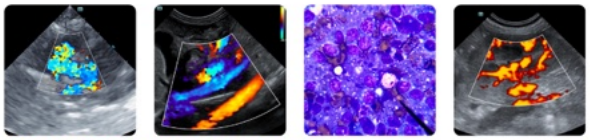


PATIENT

Zoey Barbetta

SPECIES

Feline

BREED

Domestic Shorthair

SEX

Spayed female

AGE

14 years

WEIGHT

8.37 lbs

INTERPRETED BY

Bradley Harris, DVM, DACVECC, DACVIM (cardiology)

IMAGING PERFORMED BY

Graham Sager Gellerman

HOSPITAL NAME

Back Bay VC

REFERRING VET

Dr. Ferraro

INVOICE

74915

DATE

4/28/26

PRESENTING CLINICAL SIGNS

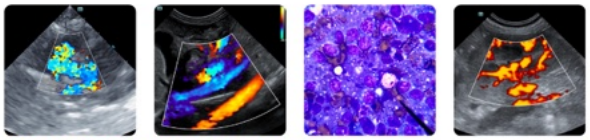
History: To evaluate the following condition: Weight loss
~ 15 year old FS DSH with:
Weight loss (4/7/26 8.37 lb, 6/27/25 9.5 lbs)
3/6 heart murmur
Dynamic right ventricular outflow tract obstruction (last ECHO in 2022, and rec recheck in 6-9 mo)
Sneezing r/o envi contaminants vs allergies vs chronic URIs vs other
Hx hypercalcemia
Abnormal PE/Chem/CBC/UA Results: ECHO 2022 4/8/26 CBC wnlChem wnlUA (cystocentesis): USG 1.032, Protein 1+, Hemoglobin +2, RBC 50-75, UPUC 0.4proBNP 165T4 4.4, Free T4 by ED 2.7 FeLV/FIV negative 2022 echo: Ao Diam 0.9 cm LA Diam 1.1 cm LA/Ao 1.17 IVSd 5.90mm LVIDd 12.53mm LVPWd 4.27mm IVSs 7.53mm LVIDs 4.44mm LVPWs 8.20mm %FS 65 % RVOT Vmax 0.93m/s RVOT maxPG 3.43mmHg PV Vmax 0.86m/s PV maxPG 2.98mmHg LVOT Vmax 2.03m/s LVOT maxPG 16.43mmHg AV Vmax 1.15m/s AV maxPG 5.31mmHg MV E Vel 0.48m/s MV A Vel 0.59m/s MV E/A Ratio 0.81 MV TDI Ea 0.06m/s MV TDI Aa 0.10m/s Ea.Aa 0.542

ULTRASONOGRAPHIC EXAMINATION OF THE HEART

The left atrium is normal in dimension. There are no distinct left atrial thrombi/clots or spontaneous echo contrast appreciated. The left ventricle is normal in dimension as well as wall thickness, and no evidence of restriction. Left ventricular systolic function is normal, with adequate contractility based on fractional shortening and systolic left ventricular dimensions. The right atrium and ventricle are subjectively normal in dimension and systolic function. There is evidence of systolic anterior motion of the mitral valve with mild mitral regurgitation. The tricuspid valve leaflets presented normal linear structure, extension in systole, and union in diastole without regurgitation. The left ventricular outflow tract demonstrated turbulent flow and subjective structural valvular integrity. The visible aorta is unremarkable. Pulmonary outflow tract assessment revealed normal valve structure, laminar flow, and appropriate diameter and distensibility. There is no evidence of semilunar valve insufficiency or pulmonary hypertension documented. There is no visible pericardial, pleural, or free peritoneal fluid noted.

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	3.8 kg	NM	0.44	1.21	0.53	67	95
FELINE CARDIAC PARAMETERS	**LA/AO** (M-mode)	**LA/AO HEART BASE** (Sisson)	**LAD** LA MAX 4 Chamber		**LVOT VEL.** (m/s)	**RVOT VEL.** (m/s)	**IVRT** (m/)
NORMAL PARAMETER	<1.5	1.6	0.7-1.7		<1.6	<1.3	40-60
PATIENT	1.14	1.13	1.43		1.4	0.9	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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ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN

Urinary System

The urinary bladder contains a moderate amount of suspended, mobile echogenic debris. The bladder and pelvic urethra are unremarkable with normal wall thicknesses and normal tone. The ureters were not visualized, which is a normal finding. The ureteral papillae appear normal. There is no evidence of inflammatory, infiltrative, or neoplastic disease.

The kidneys are normal in size and structure. The cortices are hyperechoic with loss of corticomedullary distinction. Normal cortex to medulla ratio. There is no pyelectasia or pelvic dilation. The medullary structure differed distinctly from the cortex. The capsules are mildly irregular bilaterally. The left kidney measured 3.76 cm and the right kidney measured 3.24 cm.

Adrenal Glands

Both adrenal glands are visualized and have normal shape, size, position and echogenicity for this breed. The phrenic vasculature, glandular echogenicity and detail were unremarkable. Capsule, cortex, and medullary definition were normal for this age patient. The left and right adrenal gland measured 0.34 cm.

Spleen

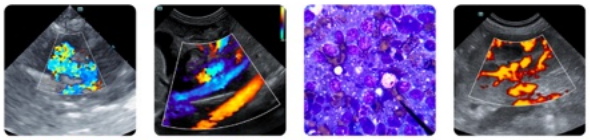
The spleen is smooth with homogeneous parenchyma and hyperechoic to liver and renal cortical parenchyma. The capsule is without noticeable irregularity or deformation. The splenic vasculature is normal without signs of congestion, spontaneous echo contrast, or thrombosis. No evidence of acute or chronic inflammatory, neoplastic, or infarct are documented. The spleen measured 0.71 cm at the hilus.

Liver

The liver is subjectively normal in size with a. diffusely, mottled or heterogenous parenchyma with ill-defined, hyperechoic nodular changes throughout. Vasculature is within normal limits with no evidence of congestion. The gallbladder has thin walls with contains anechoic bile. There is no evidence of intra- or extra-hepatic biliary dilation. The cystic and common bile ducts were normal. No hepatic lymphadenopathy is documented. There is no overt structural evidence of inflammatory, infiltrative or regenerative pathology evident.

Gastrointestinal

The stomach is non-distended with a patent, pyloroduodenal junction and normal wall thickness and layering. The small intestines are multi-focally, mildly distended with echogenic luminal contents. The small intestinal wall is diffusely normal in thickness with a prominent muscularis layer that distorts the normal 1:3 muscularis to mucosa ratio. The ileocecocolic junction is patent, and the colon contains normal shadowing feces.



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Pancreas

The base and limbs of the pancreas are isoechoic to surrounding omental fat. The pancreatic duct and capsular contour are normal. There is no overt evidence of active inflammatory or neoplastic disease.

Free Abdomen

There is no evidence of abdominal lymphadenopathy. No free fluid was noted. There are no overt mass effects noted.

ULTRASONOGRAPHIC FINDINGS

These findings are consistent with dynamic subaortic stenosis, as there is SAM present, but no convincing hypertrophy is identified. It is unlikely that any of the clinical/radiographic signs are related to underlying heart disease.

The urinary bladder contains echogenic, suspended debris contrasted with anechoic urine. This is often related to urinary tract infection but may represent exfoliated debris or sterile inflammation.

The kidneys are relatively normal in size and structure, and cortex:medulla ratio (cortex 1/3 of medulla) is essentially maintained. There is age-related loss of the normal smooth capsular contour and C/M junction definition. The cortices are largely uniform in texture with mild hyperechogenicity expected for this patient's age. There is no evidence of pelvic dilation present.

The changes within the liver parenchyma are non-specific and are likely related to non-specific hepatopathy. These may also be related to normal age related changes. Infiltrative neoplastic disease cannot be completely excluded, but is considered less likely given this appearance.

The intestinal submucosa is slightly irregular, thickened and hyperechoic suggestive of low grade, chronic disease. There is mild uniform prominence of the gastric mucosa as well as areas of "ropey" small intestinal wall with slight disruption of the normal 1:3 muscularis/mucosal ratio. This is most consistent with a chronic enteropathy. No concerning lymphadenopathy or evidence of mechanical obstruction is present. Chronic inflammatory bowel disease is likely with a low possibility of an early neoplastic event such as lymphoma.

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

Given the absence of any underlying heart disease, no cardiac therapy will be recommended. In addition, there are no cardiac objections to fluid therapy or steroid use. Owing to the presence of an outflow tract obstruction, a follow up echo is recommended in another 6-12 months to make sure no progression has occurred.

A urinalysis and urine culture via cystocentesis are recommended to evaluate the urinary tract changes for potential urinary tract infection.

A gastrointestinal panel (TLI, PLI, B12, folate) via Texas A&M gastrointestinal laboratory is indicated to further evaluate for potential chronic enteropathy. Ultimately, gastrointestinal biopsies may be required for a definitive diagnosis.

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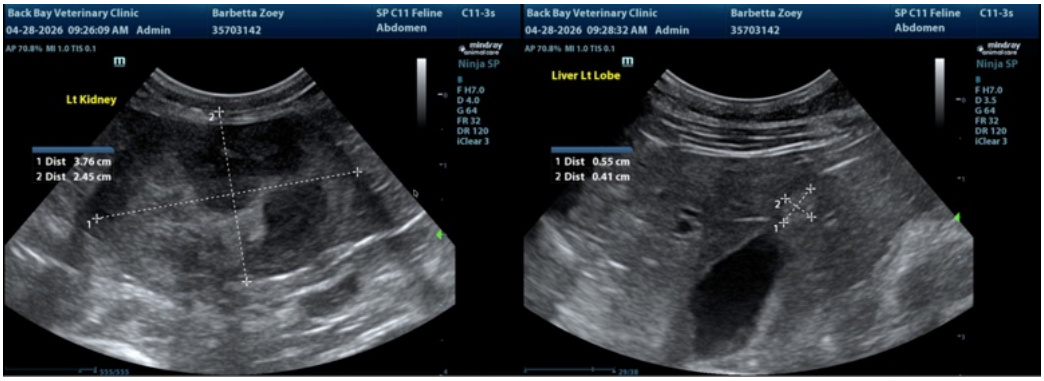
Fine needle aspirates of the liver with cytology are recommended. A coagulation profile and platelet estimate prior to sampling are indicated to ensure the absence of coagulopathy. Occasionally some tissues are poorly exfoliative, or cytology is non-specific, in which case biopsy with histopathology may be required for a definitive diagnosis.

Anesthesia considerations:
If anesthesia is necessary, then alpha-2 agonists, ketamine, high dose acepromazine, and Telazol should be avoided. Fluid therapy during anesthesia should be considered at a reduced rate (e.g., 5 ml/kg/hour) if possible (i.e., if not hypotensive). A shorter anesthetic duration will reduce the risk of complications. Pre-oxygenation is advised. Premedication with an opioid (i.e., butorphanol, hydromorphone, oxymorphone) with or without a benzodiazepine is generally the safest protocol. An induction agent such as Propofol, alfaxalone can be used to effect. Maintenance of anesthesia with isoflurane or sevoflurane is reasonable.

Diet:
No special considerations are necessary. Any high-quality food from Hills, Royal Canin, Science Diet, Eukanuba, Iams, or Purina is reasonable.

Activity:
No special considerations are necessary.



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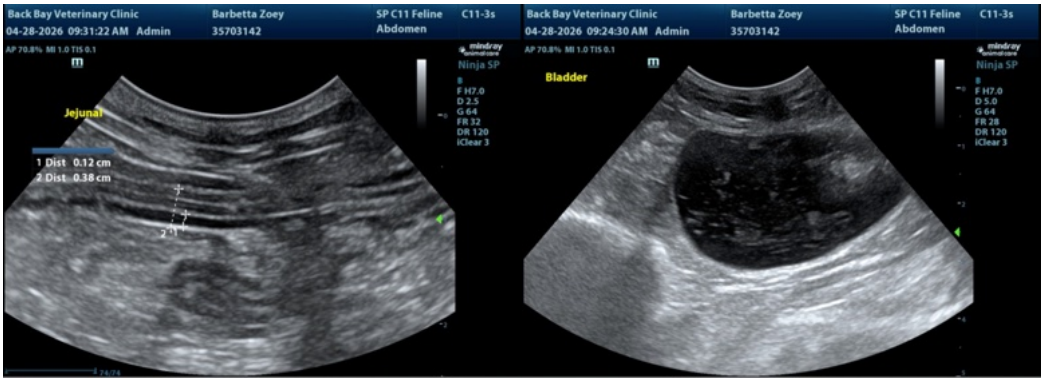

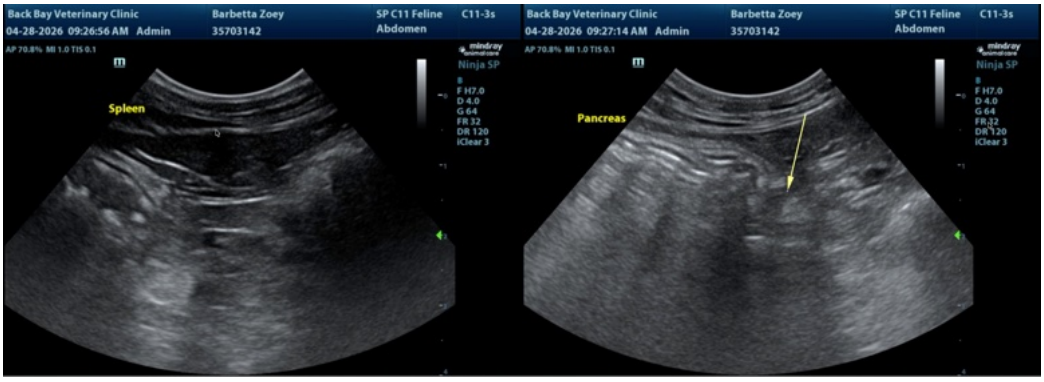

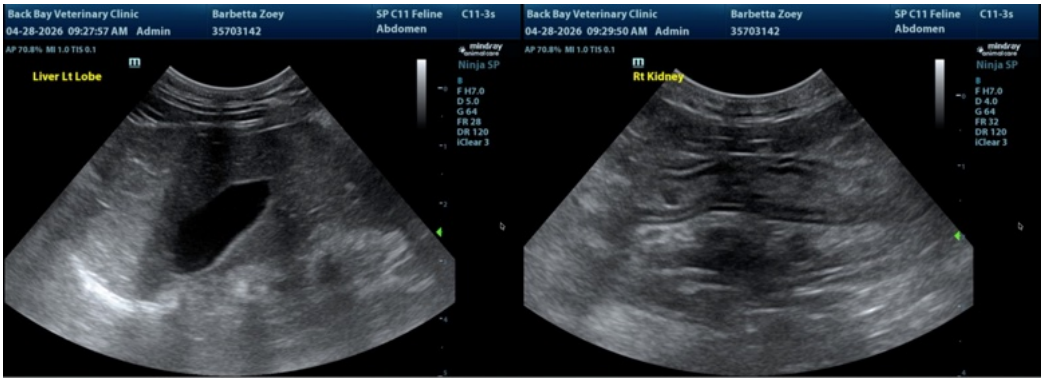

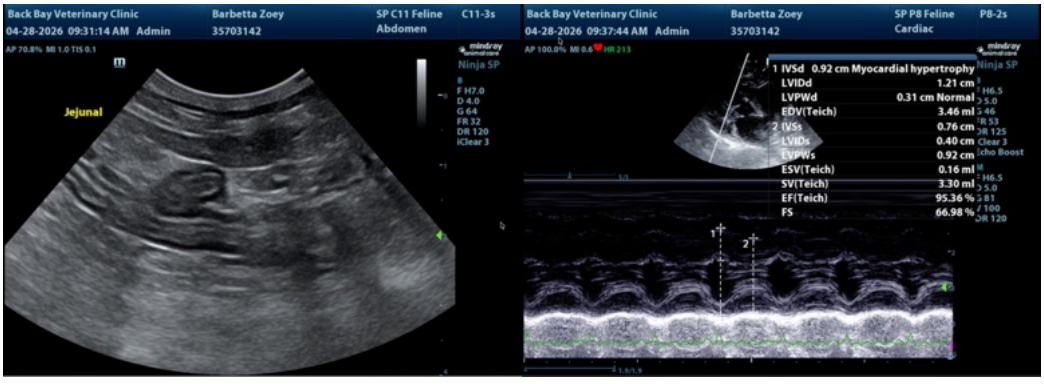

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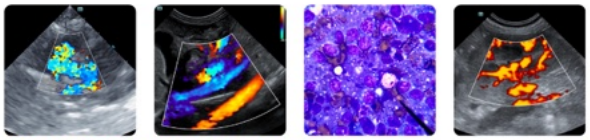

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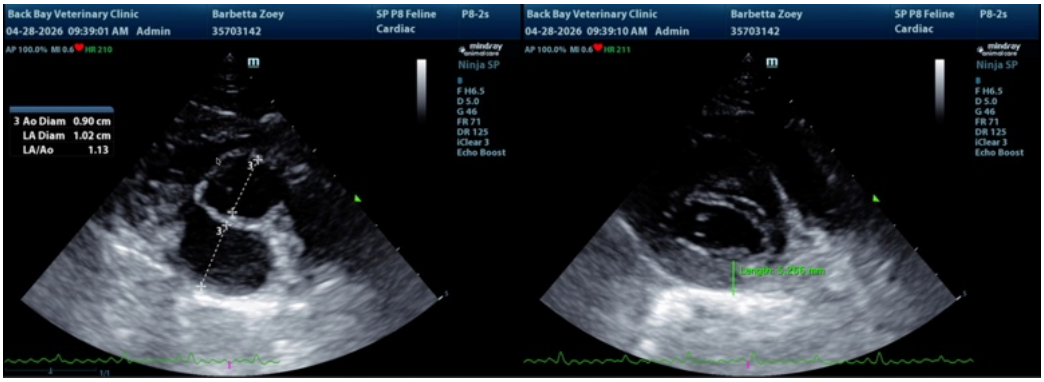

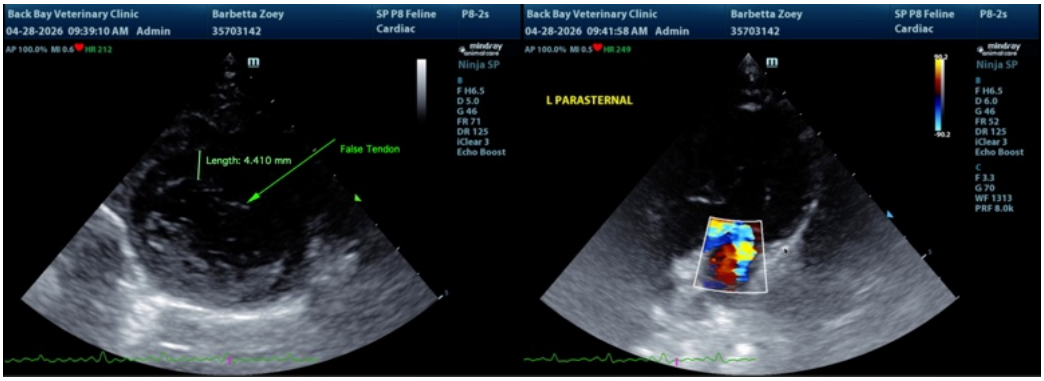

The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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.

Bradley Harris, DVM, DACVECC, DACVIM (cardiology)

info@SonoPath.com