



PATIENT

BaiBai Wang

SPECIES

Feline

BREED

Ragdoll

SEX

MN

AGE

11 years 11 months

WEIGHT

13 lbs.

INTERPRETED BY

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

IMAGING PERFORMED BY

Shari Reffi, CVT

HOSPITAL NAME

Martinsville VH

REFERRING VET

Dr. Shendell

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DATE

6/20/23

PRESENTING CLINICAL SIGNS

Pre-anesthetic evaluation for dental COHAT. Grade II/VI murmur. Elevated proBNP. Vomit 2x/week most of life. O concern for possible weight loss (gained when weighed today).

Current meds: Gabapentin pre-visit 300mg.

Abnormal PE/Chem/CBC/UA Results: ProBNP 120 (100 H)

ULTRASONOGRAPHIC EXAMINATION OF THE HEART & ABDOMEN

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		163	0.44	1.65	0.43	45	77
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	1.4	1.4	1.4	1.0	0.72	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

Cardiac Presentation

The echocardiogram in this patient demonstrated normal **left atrial** size based on 3 separate LA measurements. The cranial and caudal **mitral** valve leaflets presented normal linear structure and kinetics. The **left ventricle** presented normal thicknesses with linear contour and was not dilated nor restricted. The **myocardium** presented normal echogenicity without subjective evidence of significant fibrotic or ischemic disease. **Contractility** of the ventricular walls was adequate and in normal range for this patient evidenced by the fractional shortening measurement and subjective evaluation of the different regions and angles of the myocardium. The **left ventricular outflow** tract demonstrated normal laminar flow and subjective structural integrity. The **right atrium** and auricle revealed normal size, structure and content. No evidence of masses was noted or chamber overload. **Tricuspid** valvular assessment demonstrated adequate linear morphology and kinetics. The **right ventricle** was of normal size (1/3 diameter of LV), chordae structure, myocardial echogenicity and thickness. **Pulmonic** tract assessment revealed normal valve structure, laminar flow, and diameter (approx. 1:1 pa/ao ratio). No visible **pericardial** or free pleura fluid was noted or extra cardiac pathology in the visible planes. The cranial **mediastinum and pericardial regions** were free of masses in the visible window.



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Urinary System

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The urinary bladder, trigone, cystourethral junction, and visible pelvic urethra to a depth of 2.0 cm exhibited normal thickness and tone. Primarily anechoic urine was present in the lumen. Minor, particulate, hyperechoic, nondependent sediment was present. The ureteral papillae were normal. The ureters were not visible which is normal. No evidence of inflammatory or neoplastic mural changes were noted.

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No evidence of pathology in the area of the aortic trifurcation.

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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 loss of corticomedullary symmetry and definition expected for the age of the patient. No evidence of pelvic dilation was present. The left kidney measured 4.0 cm in length. The right kidney measured 3.9 cm in length.

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Adrenal Glands

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The left and right adrenal glands were uniform in size and contour with a uniformly hypoechoic parenchyma. The left adrenal gland measured 0.45 cm width and the right adrenal gland measured 0.47 cm width.

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The spleen exhibited primarily finely textured and homogenous parenchyma which was hyperechoic to the liver and renal cortical parenchyma. Multiple, variably sized, nondisruptive, well-demarcated, mildly hyperechoic nodules were present throughout the cranial to caudal parenchyma. An example of a nodule measured 0.7 cm in diameter. 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 or neoplastic changes were not noted. The hyperechoic nodules tend to trend benign and are most consistent with benign hyperplasia or myelolipomas. The spleen overall measured 1.0 cm width at the level of the hilus.

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Liver/ Gallbladder

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The liver was subjectively normal in size, structure, and contour. The liver parenchyma was uniform and hypoechoic to the spleen with a mild coarse echotexture. The hepatic and portal vasculature were normal in appearance without signs of congestion. The gallbladder was normal in size yet appeared to be partially divided into two compartments containing anechoic content. No evidence of inflammatory criteria. The cystic and common bile ducts were normal.

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Gastrointestinal

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The stomach presented normal visualized gastric wall layering with a normal wall layer ratio. The lumen of the stomach contained mild nonshadowing ingesta, sonographically consistent with food without signs of obstruction or foreign material. No evidence of mechanical pyloric outflow obstruction was noted.

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The small intestine presented intact wall layering with 1:3 muscularis/mucosa ratio. Segmental similar appearing, nonshadowing ingesta / chyme was present.

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



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Pancreas

The parenchyma of the left limb, body, and right limb of the pancreas presented isoechoic to the adjacent omental fat. A normal curvilinear capsule contour of the pancreas was present. The visible pancreatic duct was normal. No signs of active inflammation or neoplastic disease were evident.

Free Abdomen

No overt lymphadenopathy or peritoneal effusion was present.

ULTRASONOGRAPHIC FINDINGS

Primary Findings

- Normal echocardiogram
- Mild age-related renal changes
- Hyperechoic nondisruptive splenic nodules
- Sonographically unremarkable gastrointestinal tract with gastric and segmental intestinal ingesta / chyme - ingesta sonographically consistent with food

Secondary Findings

- Partial bi-lobed gallbladder - normal variant in a cat

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

No evidence of structural or functional cardiomyopathy was noted. A definitive cause of the low-grade murmur was not obvious. Assuming no evidence of volume changes such as dehydration or anemia, a benign physiologic / flow murmur is probable. Regardless, the hemodynamic effects of the murmur appear to be minimal without evidence of left or right heart chamber enlargement. No indication for cardiac medications or anesthetic contraindications was noted. Conservative monitoring of the murmur is recommended. Recheck echocardiogram is suggested in 8-12 months, sooner if murmur intensity increases or clinical signs consistent with heart disease arise.

The hyperechoic splenic nodules tend to trend benign and are sonographically suggestive of benign splenic myelolipomas or similar. Infiltrative splenic neoplasia or neoplastic nodules are considered less likely.

As needed gastroprotectants, dietary trial such as a canned novel protein or hydrolyzed diet, +/- hairball therapy, if clinically indicated, is suggested.



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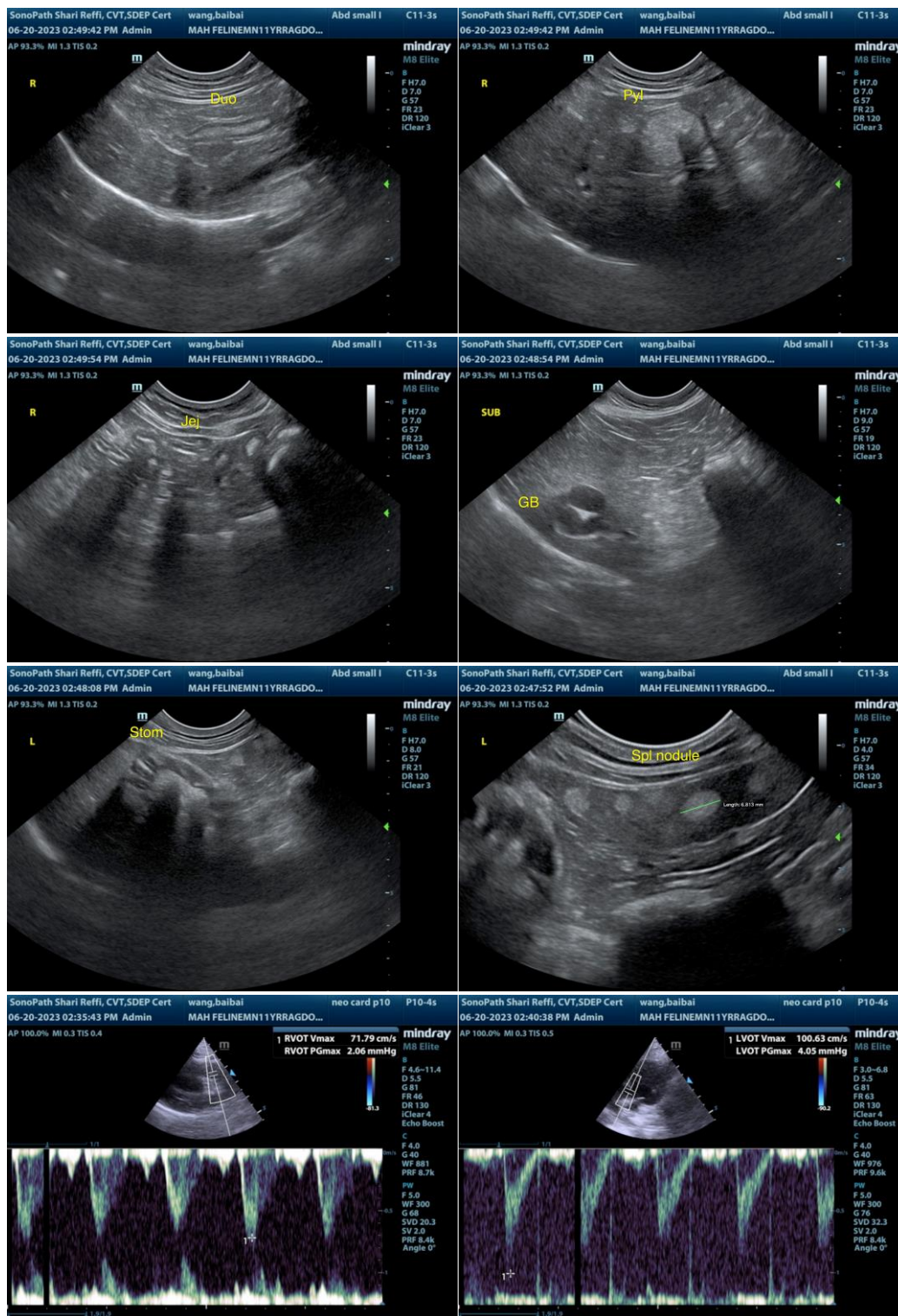
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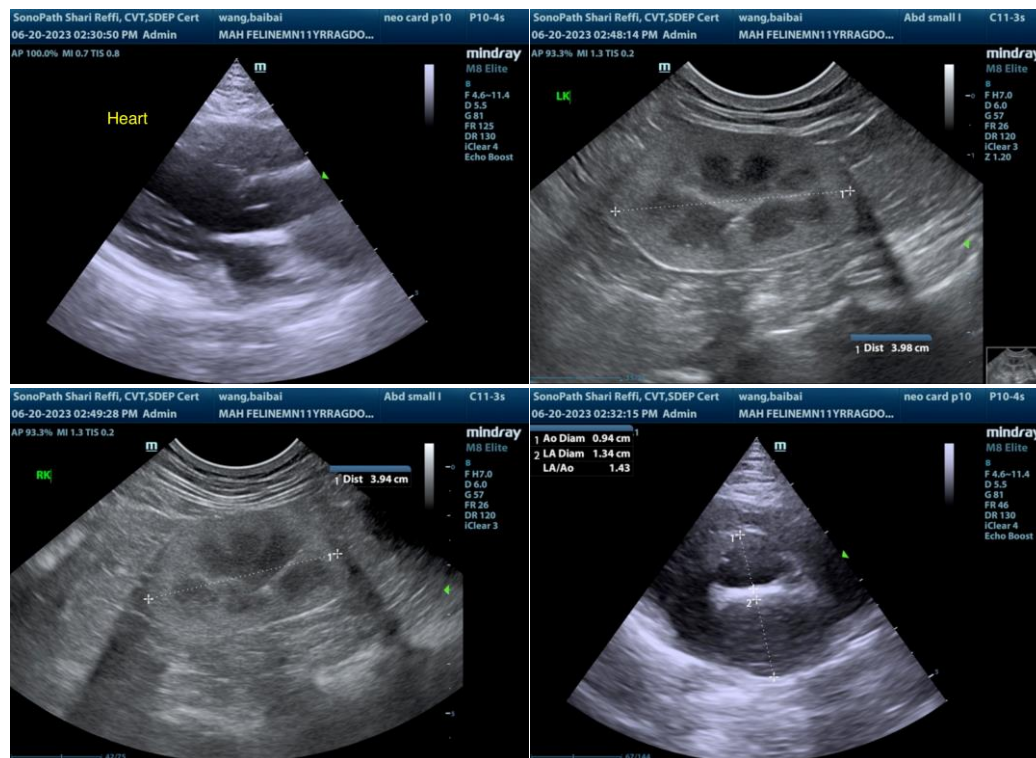
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The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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.

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