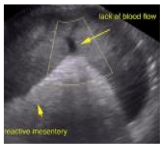
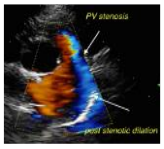
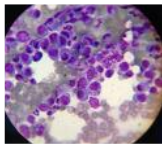
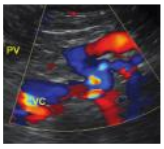
SonoPath
Clinical Sonography & Telecytology
EDUCATIONAL TELECONSULTATION SERVICES™

SonoPath.com
1-800-838-4268 info@sonopath.com

PATIENT
Persephony Notarangelo

SPECIES
Feline

BREED
DSH

SEX
FS

AGE
13 years

WEIGHT
6.6 lbs.

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

IMAGING PERFORMED BY
Dr. Sorbo

HOSPITAL NAME
Cambridge Veterinary Care

REFERRING VET
Dr. Bradley

INVOICE
16621

DATE
4/18/23

PRESENTING CLINICAL SIGNS

Some weight loss, reduced mobility, some increase in appetite.

Abnormal PE/Chem/CBC/UA Results: Grade 3/6 murmur. FAS 5/5. USD 1.036 pH 7.5 Protein 1+ (no UPCr given) tT4 2.7 (wnl) Crea 1.5, SDMA 11 (all normal, remaining chem normal). CardioPet ProBNP 114 (0-100) Norma CBC. BP not performed yet - suspect to be high as P is hard to handle even on sedatives.

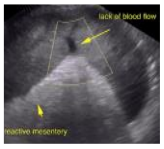
ULTRASONOGRAPHIC EXAMINATION OF THE HEART & ABDOMEN

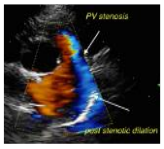
FELINE CARDIAC PARAMETERS	**BODY WEIGHT** (kg)	**HR** (BPM)	**IVSd** (cm)	**LVIDd** (cm)	**LVWd** (cm)	**FS** (%)	**EF** (%)
NORMAL PARAMETER	------	150-240	0.3-0.6	1.0-2.1	0.25-0.6	35-67	80-100
PATIENT		NM	0.46	1.2	0.46	55	86
FELINE CARDIAC PARAMETERS	**LA/AO** (Boon)	**LA/AO HEART BASE** (Sisson)	**LA** 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		1.3	1.3		1.0	1.1	NM

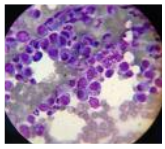
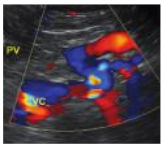
Adapted from June Boon,Veterinary Echocardiography,1998
Sisson D et al. JVIM 1991; 5: 232, Jacobs et al. Am J Vet Res 1985; 46:1705

Cardiac Presentation

The echocardiogram in this patient demonstrated enlarged **left atrial** size based on 2 separate LA measurements. The cranial and caudal **mitral** valve leaflets presented subjective mild thickening with normal coaptation. Mild MR was present on Doppler. The **left ventricular** septum and free wall revealed normal thicknesses, reduced contractility and mildly reduced left ventricular volume with subjective reduced diastolic filling. Some echogenic remodeling of the septum and free wall was present. This is most consistent with some level of **myocardial fibrosis**. The **left ventricular outflow** tract demonstrated subjective mild dynamic to turbulent outflow with subjective normal structural integrity. Normal measured LVOT velocity was noted. The **right atrium** and auricle revealed increased size and normal content. No evidence of masses was noted or chamber overload. **Tricuspid** valvular assessment demonstrated adequate linear morphology and kinetics. No overt TR was present on Doppler. 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). Normal measured RVOT velocity was noted. 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

The urinary bladder, trigone, cystourethral junction, and visible pelvic urethra to a depth of 2.0 cm 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 loss of corticomedullary symmetry and definition expected for the age of the patient. No evidence of pelvic dilation was present. The left kidney measured 3.5 cm in length. The right kidney measured 3.5 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 0.35 cm width. The right adrenal gland was uniform in size and contour with a uniformly hypoechoic parenchyma. The right adrenal gland measured 0.50 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. The spleen measured 0.8 cm width at the level of the hilus.

Liver/ Gallbladder

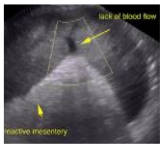
The liver was subjectively normal in size, structure, and contour. The liver parenchyma was uniform and hypoechoic to the spleen with a mild coarse echotexture. The hepatic and portal vasculature were normal in appearance without signs of congestion. The gallbladder was non-distended in size with thin walls and primarily anechoic luminal content. The cystic and common bile ducts were normal.

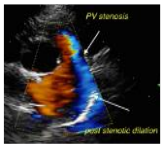
Gastrointestinal

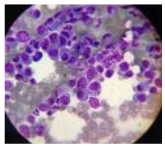
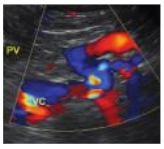
The stomach presented overtly normal intact visualized wall layering. The stomach contained a moderate amount of variably echogenic yet nonshadowing ingesta / chyme. The gastric body wall width measured 0.20 cm. No overt evidence of mechanical pyloric outflow obstruction was noted.

The small intestine presented intact wall layering with 1:3 muscularis/mucosa ratio. Generalized nonshadowing intestinal ingesta / chyme was present with no obstructive pattern. The duodenum wall measured 0.21 cm width. The jejunum wall measured 0.25 cm width.

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 omental masses, lymphadenopathy, or evidence of peritoneal effusion were noted.

ULTRASONOGRAPHIC FINDINGS

- Overtly normal cardiac structure and function with mild LV myocardial remodeling
- Mild MR
- Subjective mild dynamic LV outflow with normal measured LV outflow velocity
- Mild chronic renal changes
- Structurally unremarkable gastrointestinal tract with generalized gastrointestinal ingesta

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

A definitive cause of the murmur was not obvious. In the absence of anemia or volume changes such as dehydration, a benign physiologic / flow murmur is probable. Potential for mild systolic anterior motion of the mitral valve, given subjective mild dynamic LV outflow pattern with concurrent MR, cannot be excluded. Regardless, the hemodynamic effects of the murmur appear to be low, given the lack of left or right heart chamber enlargement and overall normal to adequate cardiac function. There is no indication for cardiac medications. Conservative monitoring of the murmur at this stage. Recheck echocardiogram is suggested in 6 months, sooner if clinical signs arise or if murmur intensity increases.

The presence of generalized gastrointestinal ingesta sonographically consistent with food is nonspecific and may indicate post-prandial presentation. A correlation with most recent meal ingestion is suggested. If documented NPO, the presence of gastric ingesta may indicate some degree of potential inefficient peristalsis or gastrointestinal hypomotility.

Overall, there is no overt evidence of significant intraabdominal visceral pathology including no evidence of intraabdominal neoplastic criteria.

Further renal staging to include urine C/S and protein: creatinine ratio on sterile urine sample may be considered. A GI panel to include PLI/TLI/Cobalamin/Folate, as well as three view chest radiographs and neurological / musculoskeletal examination, are recommended to assess for or rule out occult disease which may cause weight loss.

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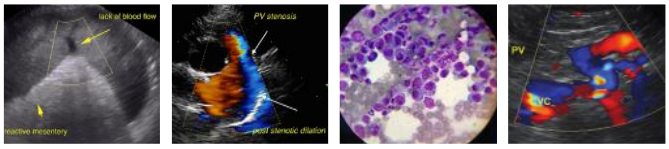

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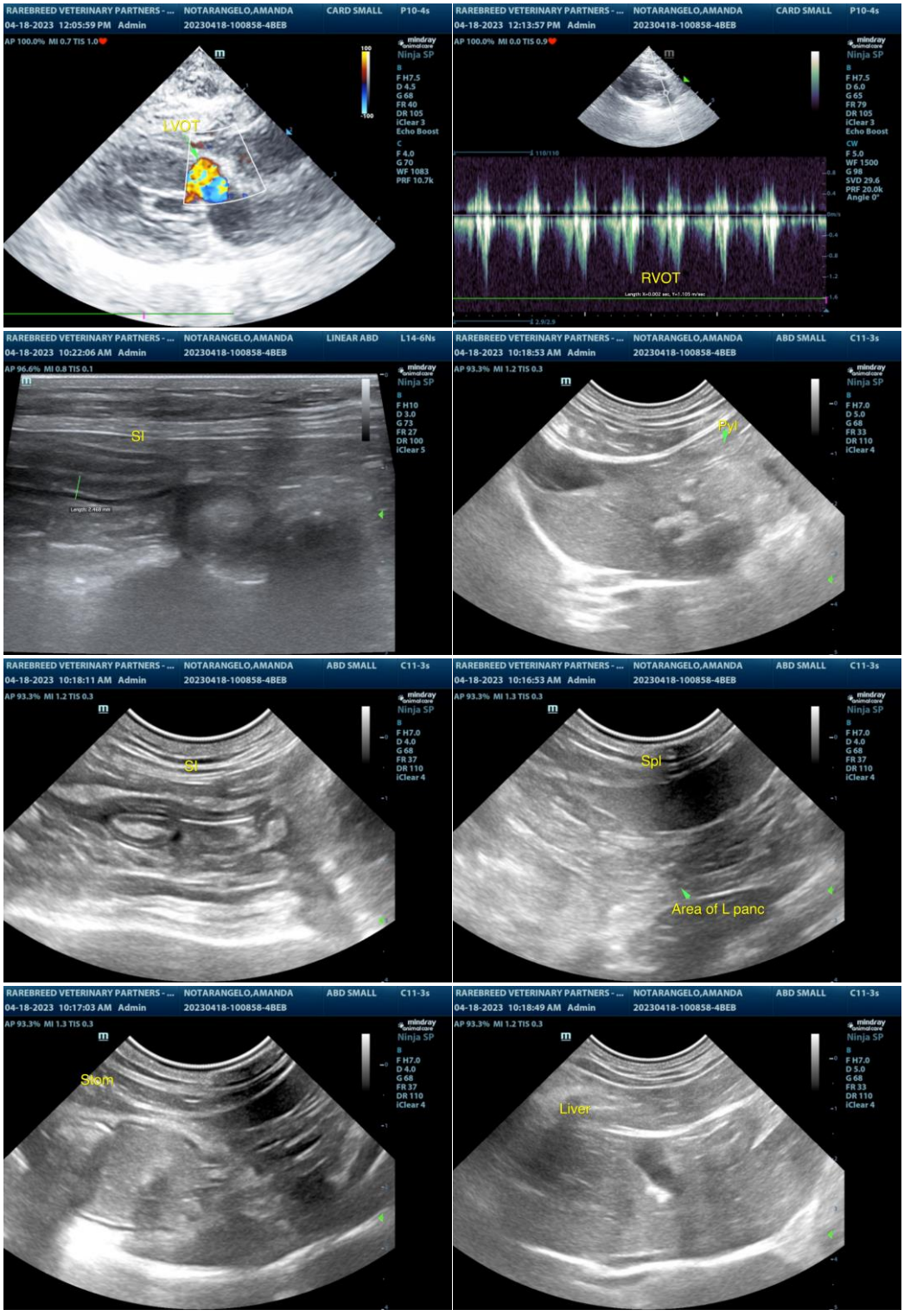

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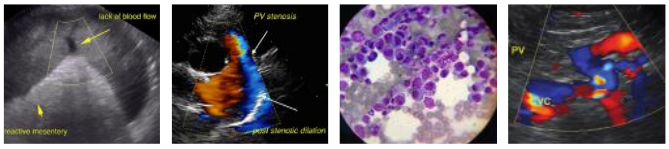

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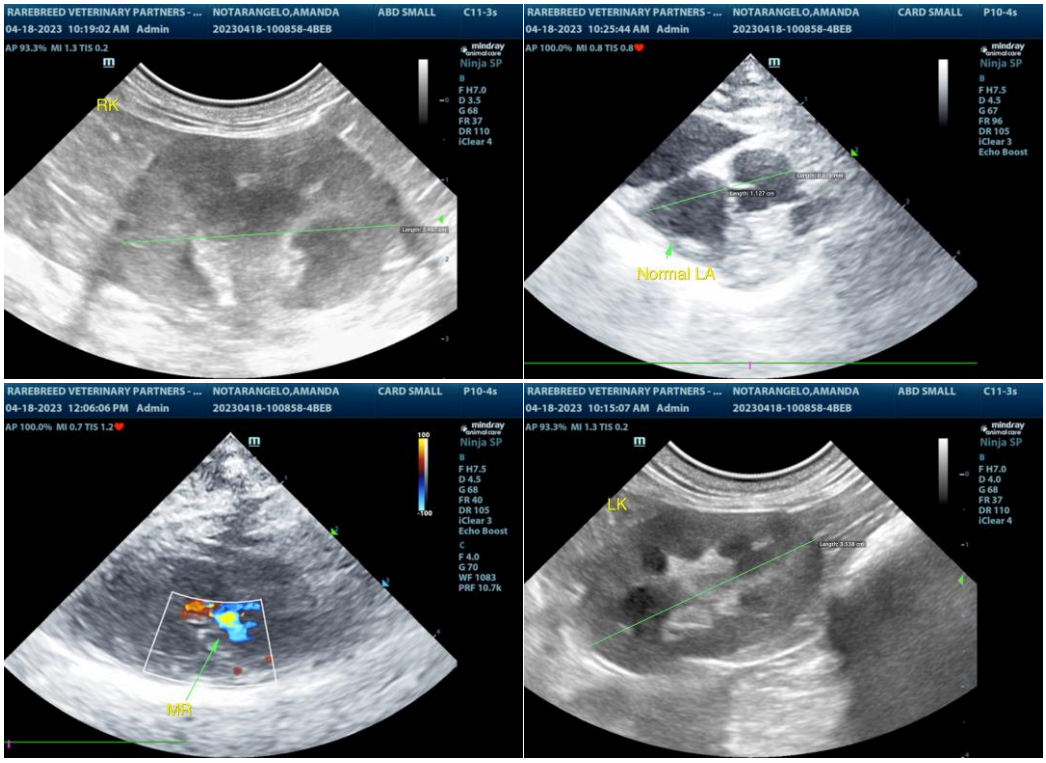

The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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.

R. McKenzie Daniel, DVM, DABVP (Canine / Feline Practice)
info@SonoPath.com