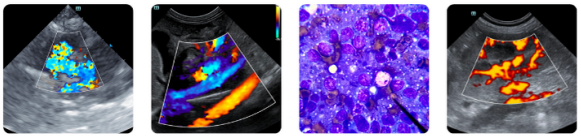

PATIENT

Meow Meow Christian

SPECIES

Feline

BREED

DSH

SEX

Male Neutered

AGE

14y 10mon

WEIGHT

13.7 lbs

INTERPRETED BY

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

IMAGING PERFORMED BY

Kerri Becker

HOSPITAL NAME

Newton VH

REFERRING VET

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INVOICE

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PRESENTING CLINICAL SIGNS

History:

- Grade 4 murmur, BCS 3/9 grade 3 dental dz

Abnormal PE/Chem/CBC/UA Results: pending

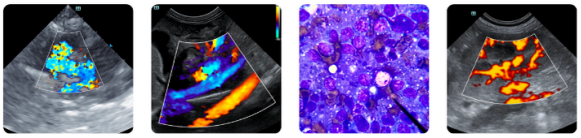
ULTRASONOGRAPHIC EXAMINATION OF THE HEART & ABDOMEN

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	--	177	0.47	1.54	0.47	38	71
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	1.1	1.1	1.2		1.2	0.7	--

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 and structure. The cranial and caudal **mitral** valve leaflets presented minor irregular age-related changes that are not clinically significant at this time with adequate extension in systole and union in diastole. No definitive or significant MR noted on doppler. The **left ventricle** presented normal free wall and septal thicknesses with a-linear contour. Previously noted mild basilar IBS hypertrophy. The **myocardium** presented some echogenic remodeling consistent with expected age-related change. **Contractility** of the ventricular walls was adequate and in normal range for this breed and patient size. The **left ventricular outflow** tract demonstrated normal laminar flow with subjectively unremarkable structure. Normal measured LVOT velocity noted. Subjective assessment of the **right atrium** and auricle revealed normal size, structure and content. No evidence of masses was noted. **Tricuspid** valvular assessment demonstrated expected findings for this age patient. The **right ventricle** was of normal size (1/3 diameter of LV), echogenicity and thickness. **Pulmonic** tract assessment revealed normal valve structure, laminar flow, and diameter (approx.1:1 pa/ao ratio). Normal measured RVOT velocity noted. No visible **pericardial** or free pleural fluid was noted. The **mediastinum** was 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 3.0 cm exhibited normal thickness and tone. Primarily anechoic urine was present in the lumen. Mild to moderate, echogenic to particulate non-dependent sediment was present without evidence of calculus formation. The ureteral papillae were normal. The ureters were not visible which is normal. No evidence of inflammatory or neoplastic mural changes were noted.

The area of the aortic trifurcation was free of pathology.

Normal renal size with asymmetrical margination was present in both kidneys. The renal cortex presented uniformly increased in echogenicity with uniform echotexture. The renal cortex appeared to be hypertrophied resulting in an altered cortex: medulla ratio. Loss of corticomedullary distinction was also present. The left kidney measured 4.4 cm in length. The right kidney measured 3.9 cm in length.

Adrenal Glands

The left and right adrenal glands were overtly normal in size, position and shape. The left adrenal gland measured 0.41 cm. The right adrenal gland measured 0.40 cm.

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 0.92 cm width level of the mid spleen.

Liver

The liver was subjectively normal in size, structure, and contour. The liver parenchyma was mild, nonuniform and hypoechoic to the spleen with a mild 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 with thin walls and primarily anechoic luminal content. The cystic and common bile ducts were normal.

Gastrointestinal

The stomach presented intact wall layering with a normal wall layer ratio. The lumen of the stomach contained mild to moderate, non-shadowing, echogenic, non-shadowing ingesta without signs of obstruction or foreign material.

The small intestine presented intact wall layering with 1:3 muscularis/mucosa ratio. The lumen of the small intestine contained segmental, mild non-shadowing ingesta/chyme. Small intestine wall measured 0.25 cm.

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

Pancreas

The pancreas was normal in size, mild capsule asymmetry with isoechoic to mildly heterogeneous remodeled parenchyma compared to adjacent omentum. No evidence of peripancreatic hyperechoic or reactive omentum. No signs of active inflammation or neoplasia.

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Free Abdomen

No overt lymphadenopathy or peritoneal effusion was present.

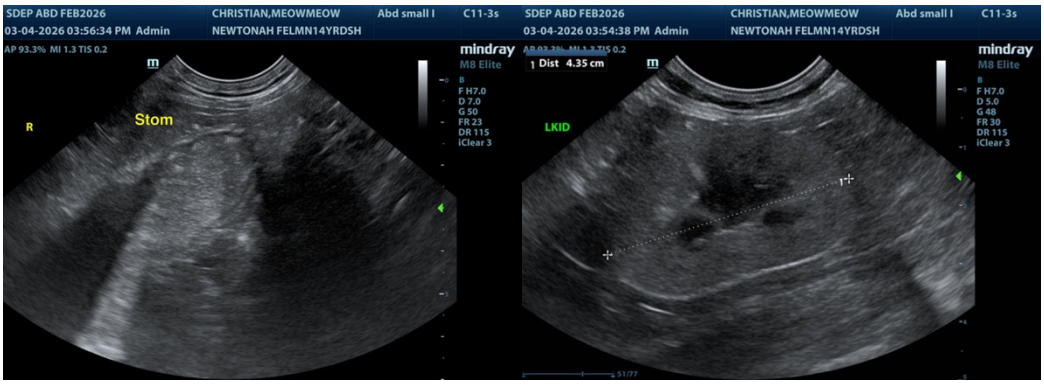
ULTRASONOGRAPHIC FINDINGS

- Normal cardiac structure/function with static mild LV myocardial remodeling and basilar IBS hypertrophy
- Urinary bladder sediment
- Static chronic renal changes
- Normal gastrointetsinal tract with mild, non-shadowing gastrointestinal ingesta – consistent with food echogenicity
- Mild pancreatic remodeling

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

A definitive cause of the murmur was not identified. Assuming no volume changes such as dehydration or anemia, a benign flow murmur is probable. A small non-visualized flow abnormality is not excluded. Regardless of classification, the hemodynamic effects of the murmur are low. Monitoring of the heart murmur is recommended without indication for cardiac medications. Recheck echocardiogram is recommended in 6-12 months, sooner if murmur intensity increases or clinical signs arise. No anesthetic contraindications. Anesthetic risk is considered mild. Suggested anesthetic protocol may include opioid or Benzodiazepine pre-med, induction with Propofol or Alfaxalone, and appropriate gas anesthesia with avoidance of alpha 2 agonists.

Correlation with pending lab work and urinalysis is recommended. Urine C/S is recommended if inflammatory sediment on urinalysis and +/- UPC level for renal staging if non-inflammatory proteinuria. 3-view chest radiographs and a GI panel to include PLI/TLI/Cobalamin/Folate may be considered if clinically indicated given current BCS or if evidence of loss of muscle mass.



New Jersey Mobile
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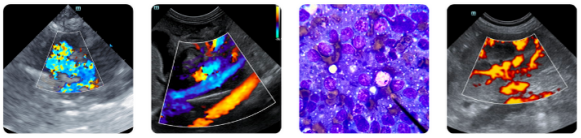

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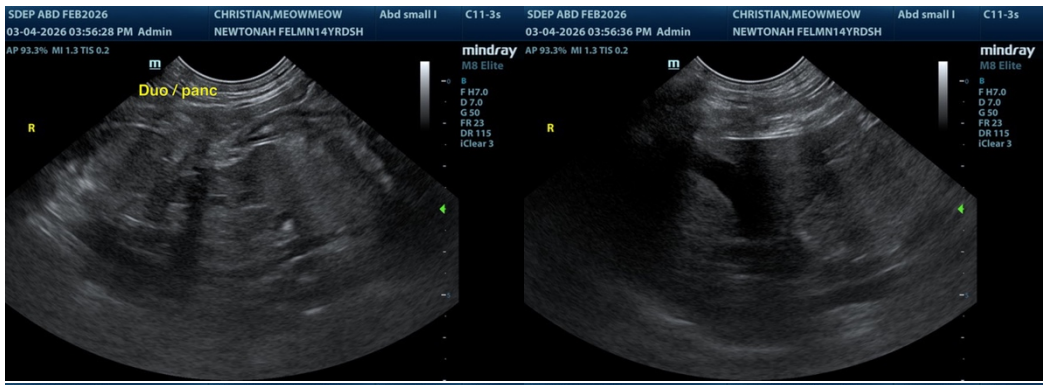

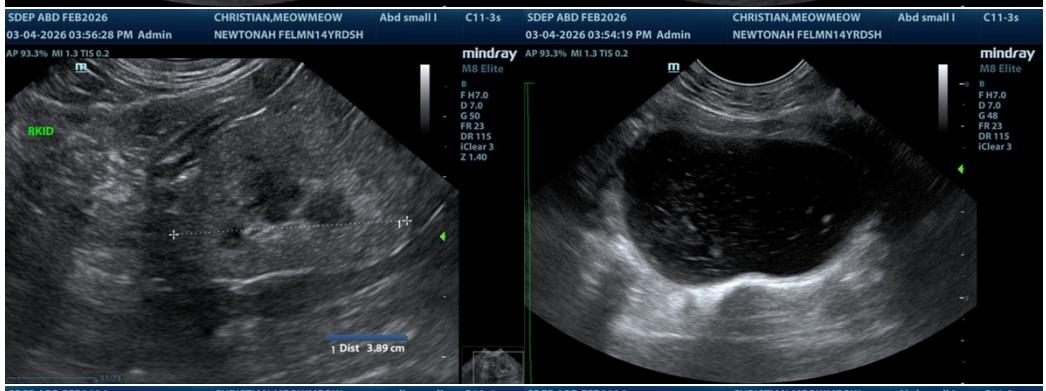

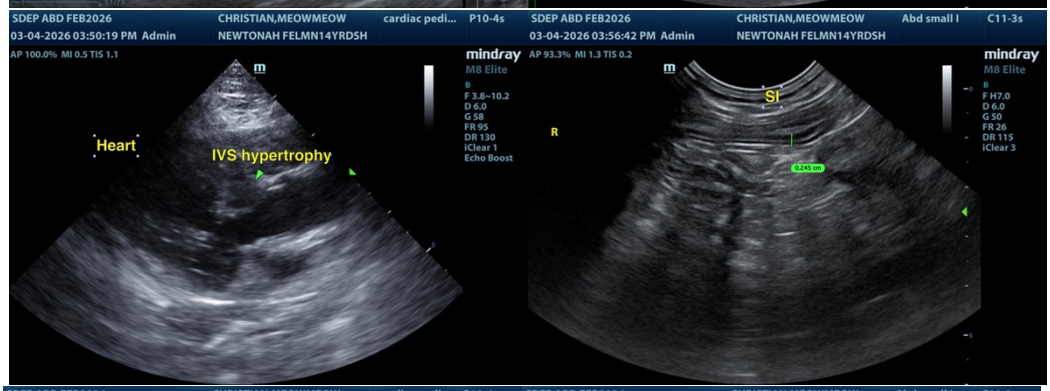

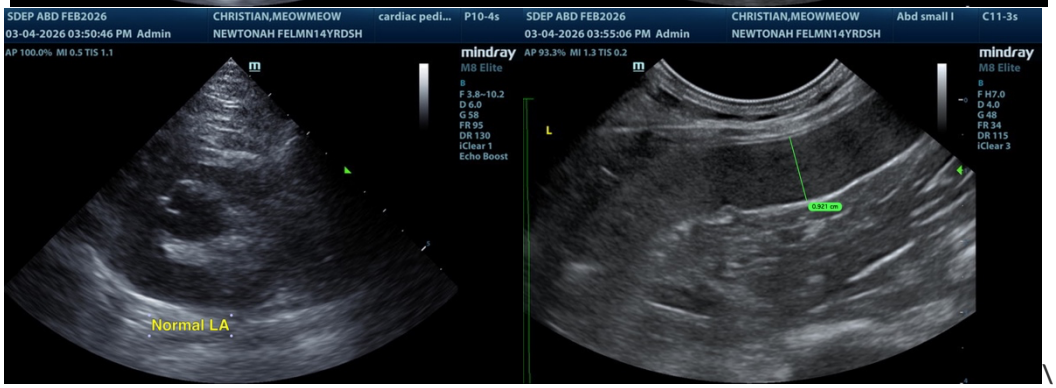

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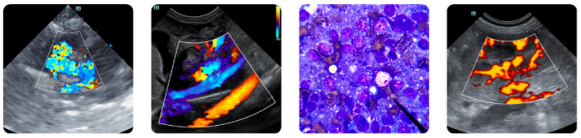

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The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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