SonoPath
Clinical Sonography & Telecytology
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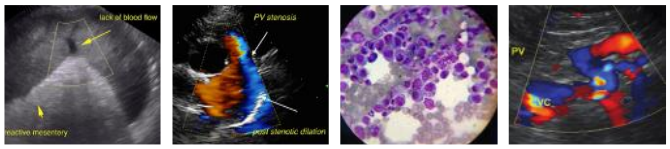


SonoPath.com
1-800-838-4268 info@sonopath.com

PATIENT

Sally Anderson

SPECIES

Feline

BREED

DSH

SEX

FS

AGE

15yr

WEIGHT

7.5lb

INTERPRETED BY

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

IMAGING PERFORMED BY

Val Shumskaya

HOSPITAL NAME

Animal Care Center Flanders

REFERRING VET

Dr. Weagley

INVOICE

12946ag

DATE

02/13/2023

PRESENTING CLINICAL SIGNS

Severe tachycardia episode, irregular rhythm - recheck EKG pending

Current meds: Gabapentin 7:30 AM, Tapazole BID (o did not give today)

Abnormal PE/Chem/CBC/UA Results: wnl

ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN AND HEART

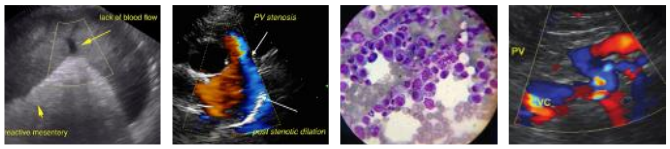
FELINE CARDIAC PARAMETERS	**BODY WEIGHT** (kg)	**HR** (BPM)	**IVSd** (cm)	**LVIDd** (cm)	**LVWd** (cm)	**FS** (%)	**EF** (%)
NORMAL PARAMETER	------	150-240	0.3-0.6	1.0-2.1	0.25-0.6	35-67	80-100
PATIENT		179	0.40	1.57	0.39	56	89
FELINE CARDIAC PARAMETERS	**LA/AO** (Boon)	**LA/AO HEART BASE** (Sisson)	**LA** 2D 4-chamber long axis AS to FW (Sisson) (cm)		**LVOT VEL.** (m/s)	**RVOT VEL.** (m/s)	**TR**
NORMAL PARAMETER	<1.5	0.88-1.79	0.7-1.7		<1.6	<1.3	
PATIENT	1.74	1.74	1.7		1.1	0.82	1.6
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 mild increased left atrial size based on 3 separate LA measurements. No evidence of spontaneous contrast or smoke. The cranial and caudal mitral valve leaflets presented normal linear structure and kinetics. No overt MR on Doppler. 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. The 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. Normal measured LVOT velocity. The right atrium and auricle revealed mild increased size comparable to the left atrium with normal structure and content. No evidence of spontaneous contrast or smoke. No evidence of masses was noted or chamber overload. Tricuspid valvular assessment demonstrated adequate linear morphology and kinetics. Minor TR present on Doppler. The right ventricle was of normal size (1/3 diameter of LV), chordae structure, myocardial echogenicity and thickness. Normal measured RVOT velocity. 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. Intermittent non-specific arrythmia was present.

Urinary System

The urinary bladder, trigone, cystourethral junction, and visible pelvic urethra to a depth of 2 cm exhibited normal thickness and tone. Anechoic urine was present in the lumen with no uroliths or



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sediment. The ureteral papillae were normal. The ureters were not visible which is normal. No evidence of inflammatory or neoplastic changes were noted.

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 3.8 cm in length. The right kidney measured 3.8 cm in length.

The area of the aortic trifurcation was free of pathology.

Adrenal Glands

The left adrenal gland was uniform in size and contour with a uniformly hypoechoic parenchyma. The left adrenal gland measured 0.25 cm width. The right adrenal gland was uniform in size and contour with a uniformly hypoechoic parenchyma. The right adrenal gland measured 0.27 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 0.75 cm in width at the level of the hilus.

Liver/Gallbladder

The liver presented enlarged in size. The parenchyma of the liver was subjectively normal in echogenicity compared to the spleen and renal cortices. The liver parenchyma was uniform with a mildly coarse echotexture and mild parenchymal remodeling. A solitary non-disruptive cystic appearing nodule was present in the left liver measuring 0.93 cm in diameter. The capsule of the liver was symmetrically rounded to mildly swollen in margination. The hepatic and portal vasculature were normal in appearance without signs of congestion. The gallbladder was non-distended in size with 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 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.

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

Pancreas

The pancreas was normal in size and contour with isoechoic to heterogeneous parenchyma compared to adjacent omentum, likely consistent with age related changes and considered incidental. No signs of active inflammation or neoplasia.

Free Abdomen

No omental masses, overt lymphadenopathy or peritoneal effusion was present.

ULTRASONOGRAPHIC FINDINGS

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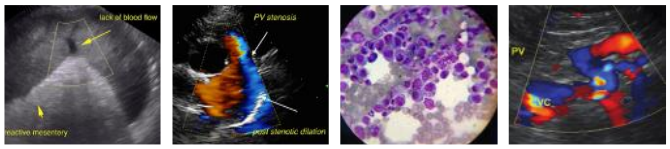

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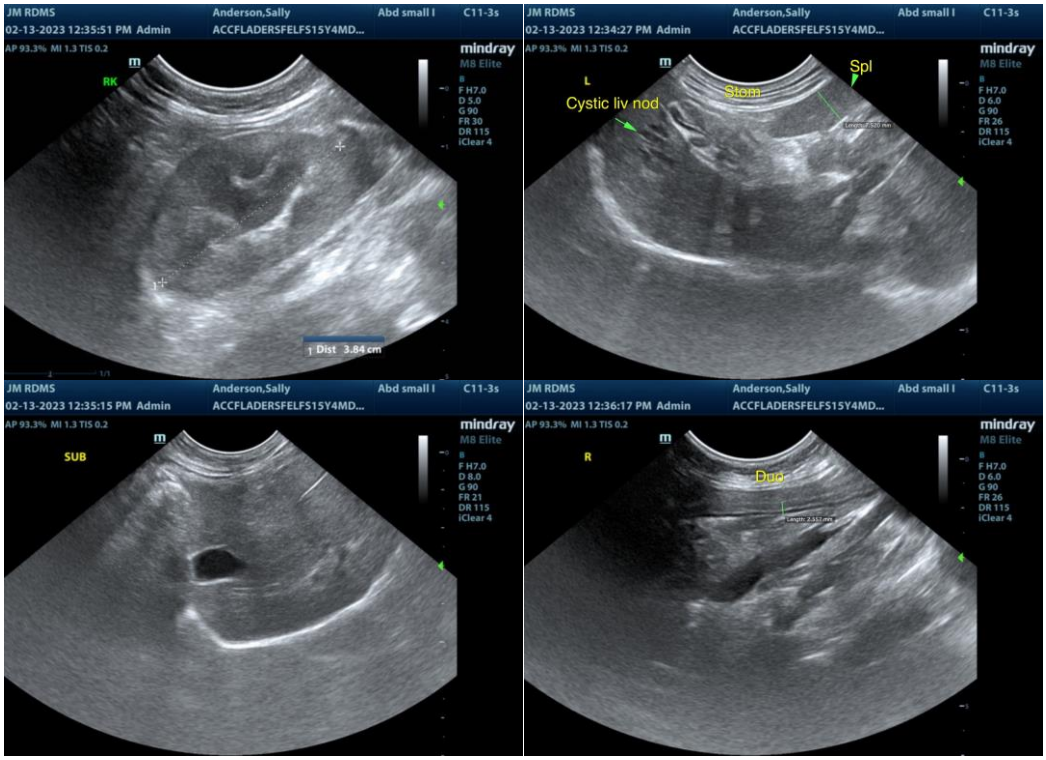
- Mild biatrial enlargement
- Normal LV-no HCM criteria
- Minor TR-no evidence of clinical pulmonary hypertension
- Intermittent arrythmia-non-specific
- Mild chronic renal changes
- Non-disruptive cystic liver nodule-suspect benign cystic biliary adenoma or small multichambered hepatic cyst
- Heterogenous pancreas

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

The finding of mild biatrial enlargement in the face of normal LV wall thickness may indicate emerging unclassified cardiomyopathy. Sonographically the heart appears to be compensated at this stage with normal LV function. Diuretic therapy is only indicated if elevated resting RR or radiographic concern for pulmonary edema. Correlation with recheck ECG for further clarification of the intermittent non-specific arrythmia is recommended. Prognosis is highly variable and serial sonographic monitoring is required for further prognosis. A spec fPL is recommended to assess for evidence of low-grade pancreatitis as a contributing factor to the arrhythmia or if clinical signs suggestive of pancreatitis are present. Otherwise, no sonographic evidence of abdominal visceral pathology.



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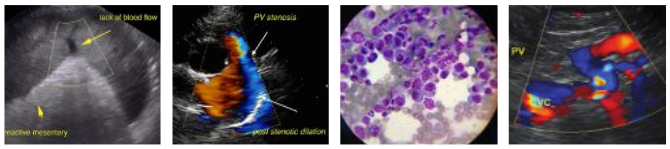

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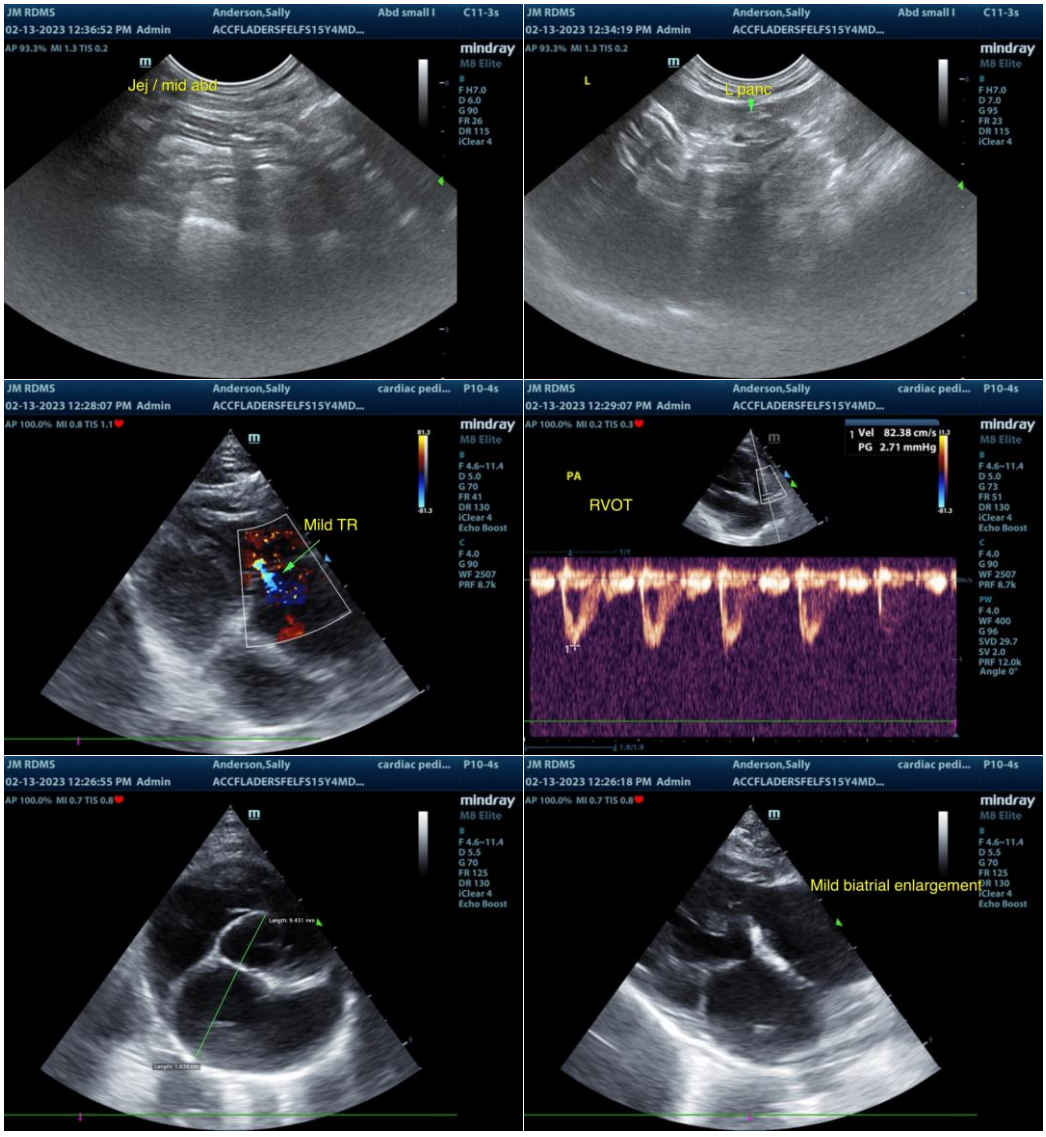

The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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)
mac.daniel@sonopath.com