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Clinical Sonography & Telecytology
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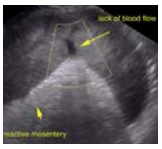
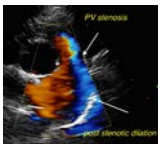
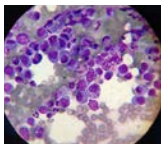
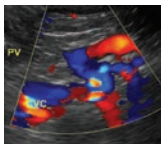

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1-800-838-4268 info@sonopath.com

PATIENT
Sofrito Caswell

SPECIES
Feline

BREED
DSH

SEX
Neutered Male

AGE
1 Year

WEIGHT
12 Pounds

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

IMAGING PERFORMED BY
Kelly Vazquez

HOSPITAL NAME
Marsh Hospital for Animals

REFERRING VET
Dr. Milwicki

INVOICE
24874

DATE
8/24/21

PRESENTING CLINICAL SIGNS

Presented for fast RR. On auscultation audible squeak/wheeze on expiration. No current meds.

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		122	0.84	1.4	0.87	33.6	66.3
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		1.93	1.6		1.4	1.1-1.3	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 mild to moderate increased **left atrial** size and normal structure with no evidence of "smoke" or thrombi. The cranial and caudal **mitral** valve leaflets appeared mildly thickened with some insufficiency noted on Doppler. The **left ventricle** presented excessive free wall and septal thicknesses with hypertrophic thicknesses compared to normal for this species. The **myocardium** presented subjective mild uniform increased echogenicity without immediate signs of fibrotic or ischemic disease. **Contractility** of the ventricular walls was adequate for this patient evidenced by the elevated fractional shortening measurement. The **left ventricular outflow** tract demonstrated subjective minor turbulent laminar flow. Subjective assessment of the **right atrium** and auricle revealed normal size, structure and content. No evidence of overt masses was noted. **Tricuspid** valvular assessment demonstrated linear morphology. The **right ventricle** was of normal size with normal chordae structure, myocardial echogenicity and thickness. **Pulmonic** tract assessment revealed normal valve structure with subjective mild turbulent post-valvular laminar flow and normal diameter. Mild pericardial free fluid was noted without overt evidence of concurrent pleural fluid. No echographically detectable evidence of infiltrative disease was visible. The **mediastinum** was free of masses in the visible window.

Urinary System

The urinary bladder, trigone, cystourethral junction, and visible pelvic urethra to a depth of – 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 were noted.

Normal size and margination were present in the kidneys. A normal 1:3 cortex / medulla ratio and normal corticomedullary definition were maintained. The echogenicity of the cortex was similar to or slightly less than normal liver parenchyma while the medulla echogenicity was hypoechoic to the cortex with no evidence of pelvic dilation. The left kidney measured 4.0 cm. The right kidney measured 4.5 cm.

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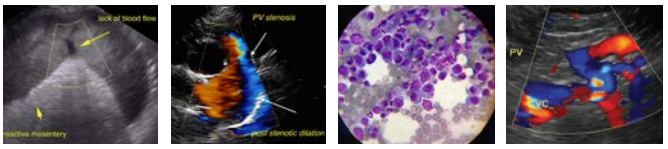

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Adrenal Glands

The adrenal glands were uniform in size and contour with a uniformly hypoechoic parenchyma. The left adrenal gland measured 0.31 cm in width. The right adrenal gland measured 0.47 cm in 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 1.0 cm in width.

Liver

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 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 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 was evident.

Free Abdomen

No evidence of intraabdominal masses, lymphadenopathy or effusion.

ULTRASONOGRAPHIC FINDINGS

- Hypertrophic cardiomyopathy
- Moderate left atrial enlargement
- Mild pericardial effusion
- Sonographically unremarkable abdomen

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

The appearance of the heart is consistent with hypertrophic cardiomyopathy. Primary hypertrophic cardiomyopathy is a rule out diagnosis assuming no evidence of hyperthyroidism, systemic hypertension, or underlying additional endocrine disease of which there was no evidence of within the abdominal cavity. Screening blood pressure recommended. Given the moderate left atrial enlargement, cardiogenic pericardial effusion is suspected. Potential for pulmonary edema owing to left atrial enlargement (given the elevated resting respiration rate and wheezes on expiration) is possible.

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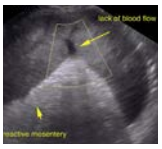
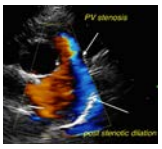
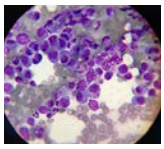
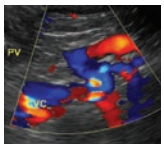

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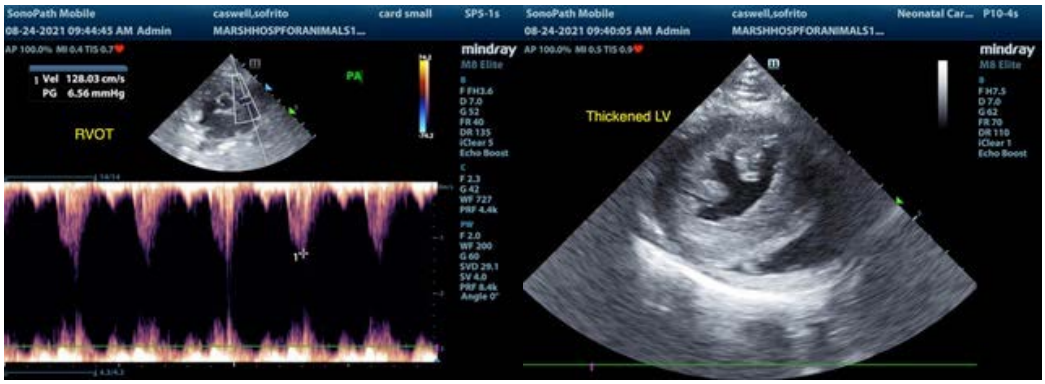
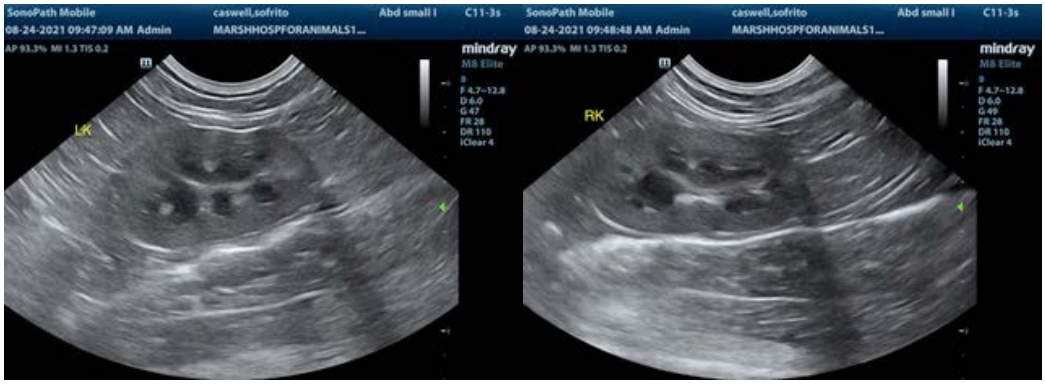
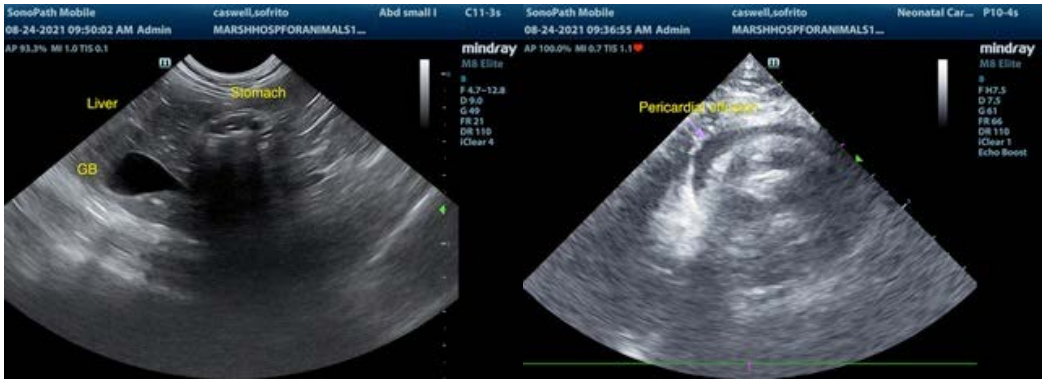
Correlation with 3-view chest radiographs recommended. Going forward, this patient may be at continued risk of congestive heart failure and thrombus formation. Assuming normal renal parameters, diuretic therapy (i.e., Lasix at 1-2 mg/kg PO BID) is recommended. Plavix at 18.75 mg PO SID may be considered due to the potential for thrombus formation, yet the left atrium size at this time was not overtly suggestive of impending thrombus formation. Recheck echocardiogram suggested in 4-6 months to assess for evidence of progression, sooner if clinical signs consistent with heart failure are noted. Given the patient's young age, cardiology consult is recommended for further assessment and prognosis.







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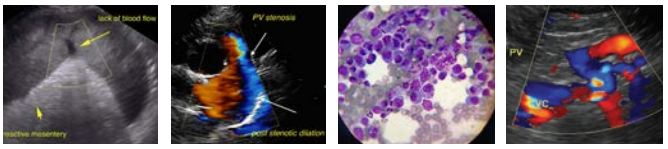

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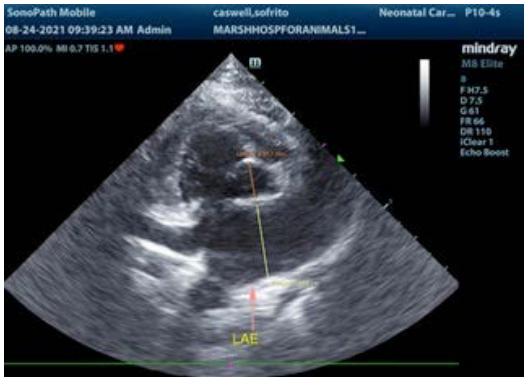

The information and recommendations provided are based on the images presented by the referring veterinarian. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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