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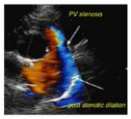
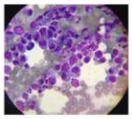
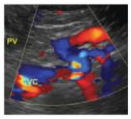
SVS IMAGING

SonoPath
Clinical Sonography & Telecytology
EDUCATIONAL TELECONSULTATION SERVICES™
1-800-838-4268 info@sonopath.com SonoPath.com

PATIENT
Sophie Tilley

SPECIES
Feline

BREED
DSH

SEX
Female Spayed

AGE
9 years

WEIGHT
13.96lbs

INTERPRETED BY
Maggie Machen Lamy, DVM, DACVIM (Cardiology)

IMAGING PERFORMED BY
Amy Mayhew, LVT

HOSPITAL NAME
SVS Imaging MI

REFERRING VET
Cat Care of Rochester Hills

INVOICE
26277

DATE
9/8/22

PRESENTING CLINICAL SIGNS

History: History of intermittent coughing possibly for years. Cough has become more frequent last few weeks. Tachypnea and less active x 1 week. Otherwise eating and acting normally.
-Abnormal PE/Chem/CBC/UA Results: Tachypneic with bronchovesicular lung sounds on exam. No murmur. BNP 166 (was 70 in Dec 2021). Moderate bronchointerstitial pattern on lateral and v/d rads.

ECHOCARDIOGRAM FINDINGS

2D, m-mode, color flow and doppler imaging is available. The left ventricular wall thickness is normal. There is a significantly hyperechoic endocardium consistent with fibrosis and ventricular remodeling. The left ventricular chamber is normal in dimension. The papillary muscles appear remodeled. The left atrium is normal. The right atrium is mildly enlarged. The right ventricle appears remodeled and enlarged with mild to moderate RVH. No significant tricuspid regurgitation. The mitral valve is normal in structure and mobility. There is no mitral regurgitation present. Blood flow through the RVOT and LVOT is normal in velocity. No AI/PI. No obvious cardiac tumors or effusions.

CARDIAC CHART

FELINE CARDIAC PARAMETERS	BODY WEIGHT (kg)	HR (BPM)	IVSd (cm) (Moise, Pipers)	LVIDd (cm) (Moise, Pipers)	LVWd (cm) (Moise, Pipers)	FS (%)	EF (%)
NORMAL PARAMETER	------	150-240	0.35-0.55	<2 (mean 1.5)	3.5-0.55	35-67	80-100
PATIENT	6.3	NM	0.45	1.2	0.49	52	90
FELINE CARDIAC PARAMETERS	**LA/AO** (Boon)	**LA/AO HEART BASE (Swe)** (Abbott)	**LA** 2D short axis Base view (cm) (Abbott)		**LVOT VEL** (m/s)	**RVOT VEL** (m/s)	**E max** (m/s)
NORMAL	<1.5	<1.3	<1.2		<1.6	<1.3	<0.9
PATIENT	NM	1.1	1.0		1.1	0.73	NM

**Note: All measurements based upon multi-modal images and methods. An average value is reported.*
Adapted from June Boon, Veterinary Echocardiography,1998
Abbott J & MacLean H JVIM 2006;20: 111-119, Moise et al. Am J Vet Res 47:1476, 1986. Pipers et al. Am J Vet Res 40:882, 1979.

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

The primary finding is evidence of pulmonary hypertension. The right heart appears enlarged with RV thickening. While there is no significant TR to determine an exact gradient, these findings do appear relevant. This has likely developed secondary to chronic airway disease, albeit a fairly uncommon finding in cats. The left heart is unremarkable, although the LV is quite remodeled. No additional issues are identified.

Given the findings, consider a trial of Sildenafil to assess for any clinical improvement in this case. If the improvement is minimal, this can be discontinued, as there is no known benefit outside of clinical impact. Further treatment of airway disease should be considered as needed (steroids, inhaled albuterol, Azithromycin, etc. It is important to note that the pulmonary hypertension does not typically cause a cough; rather it develops secondary to chronic respiratory issues. Clinical signs of PAH include exertional dyspnea or collapse.

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SPECIES

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Monitor the patient closely for any progressive decline in breathing rate/effort, exertional syncope, etc.

Prognosis is guarded given airway disease and secondar right heart changes. There will always remain risk for progression to right-sided CHF (difficult to discern in cats with concurrent respiratory disease), development of blood clots and/or malignant arrhythmias/sudden death in the future. Monitoring of sleeping breathing rates at home is recommended as the best way to screen for recurrent CHF at home.

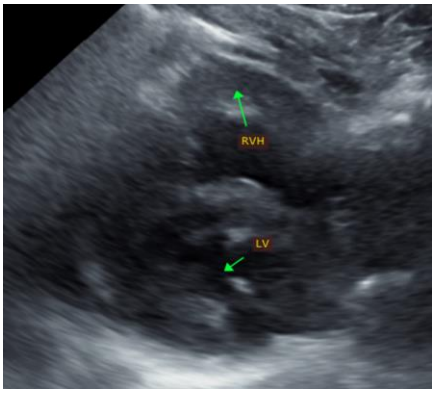
No obvious contraindication for steroid use; however, with LV remodeling and stiffening there is always a risk for acute signs of tolerance. Monitor RR/RE, particularly during the initiation phase.

PLAN

Recommend baseline BP. Consider a sildenafil trial 1-2mg/kg PO q12h. If little improvement, no need to continue the medication. Consider further treatment for respiratory disease if clinically indicated (such as a course of Azithromycin). Consider inhaled steroid or albuterol therapy as a potential option as well.

A recheck echocardiogram is recommended in 6-12 months to assess progression, sooner if issues arise in the interim.

IMAGES



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.

Maggie Machen Lamy, DVM
Diplomate of the American College of Veterinary Internal Medicine (Cardiology)
info@sonopath.com