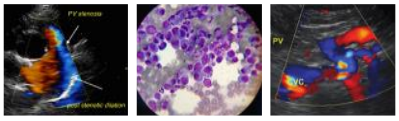
IMAGING PERFORMED BY

IntraPet.com



SonoPath
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PATIENT
R2B2 Biggs

SPECIES
Feline

BREED
DSH

SEX
Male Neutered

AGE
3.17.14

WEIGHT
14.7lbs

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

HOSPITAL NAME
Bayside Animal Medical Center

REFERRING VET
Dr. Sims

INVOICE
24876

DATE
6.20.22

PRESENTING CLINICAL SIGNS

History: Pet has history of bronchitis/asthma but has a heart murmur documented since 2020. Recent bloodwork (May) showed borderline elevated T4 and repeat today showed elevation.
ProBNP was also elevated in May but blood pressures were wnl. Clinically pet is active at home but occasionally with have 10 second episodes of open mouth breathing.
-Sedation used: Not required to complete full diagnostic ultrasound.
-Pertinent previous ultrasound results:
-STAT: Declined.
-Imaging performed by: Stephanie Pearce RDCS, RVT.

ELECTROCARDIOGRAPHIC FINDINGS

A six lead ECG is available at both 25 and 50mm/s; 2mm/mV. The average heart rate is 230bpm with a regular rhythm. The rhythm is sinus in origin, with a p for every QRS complex and vice versa. The P wave morphology is positive with a normal dimension. Normal PR. The QRS morphology is positive with normal dimension. MEA is normal. No ectopic beats, pauses or dysrhythmias observed.
ECG diagnosis: Normal sinus tachycardia.

ECHOCARDIOGRAM FINDINGS

2D, m-mode, color flow and doppler imaging is available. The left ventricular wall is moderate to severely hypertrophied. There is a diffusely hyperechoic endocardium consistent with fibrosis and ventricular remodeling. Papillary muscles are mildly hypertrophied. The right ventricle is subjectively normal in size and morphology. There is moderate left atrial enlargement present. No right atrial enlargement present. Normal RVOT velocity. There is systolic anterior motion (SAM) of the mitral valve present, with a significantly elevated LVOT velocity (dynamic profile). There is mild eccentric mitral regurgitation present secondary to SAM. No other obvious valvular regurgitation is present. There is no pericardial effusion noted. No pleural effusion appreciated.

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	3.5-0.55	<2 (mean 1.5)	3.5-0.55	35-67	80-100
PATIENT	6.7	NM	0.82	1.5	0.85	59	91
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	2.3	1.8		4.4	1.8	NM

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 diagnosis is hypertrophic obstructive cardiomyopathy. This indicates LV hypertrophy (moderate to severe) with a dynamic LVOT obstruction (SAM). There is moderate left atrial dilation, indicating the risk of spontaneous CHF and/or a thrombotic event is elevated. In a patient that is an uncontrolled hyperthyroid, certainly thyroid control is warranted, as this may be contributing to disease/tachycardia. A screening BP and T4 are recommended every 6 months, as both can exacerbate disease. The ECG is unremarkable with a sinus tachycardia.

While no medications have been shown to definitively alter long term outcome at this stage of disease, atenolol is often initiated to decrease the outflow obstruction (particularly in light of tachycardia). Given the degree of hypertrophy and LA dilation, recommend initiate at this time as below. As the thyroid becomes controlled, close monitoring of heart rate is recommended to ensure the rate does not drop too dramatically (target 140-160bpm). Additionall Plavix is recommended to decrease risk for blood clots; however, this can be difficult to administer. No additional medications are indicated.

Anesthetic risk is considered mild, however judicious IV fluid rates are advised to avoid fluid overload. Additionally, drugs that stimulate heart rate should be avoided unless clinically necessary (glycopyrrolate, atropine). Avoid vasodilators as this may worsen the obstruction. A reasonable protocol includes opioid/benzodiazepine premedication, propofol induction, isoflurane maintenance.

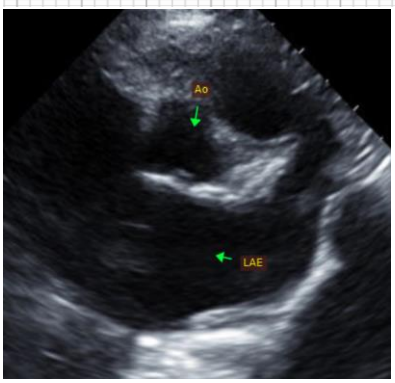
Monitor at home for any respiratory signs or blood clot events (neurologic change, paralysis, etc.) in the future.

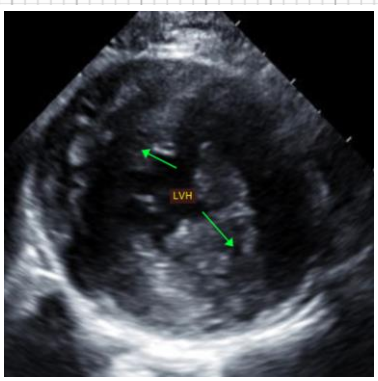
PLAN

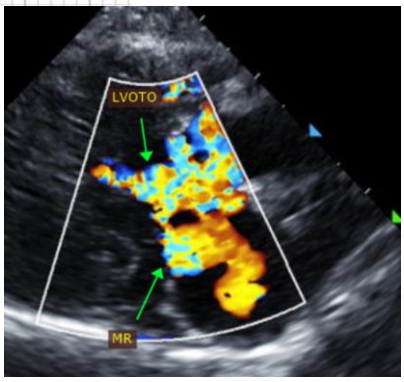
Initiate thyroid control. Monitor BP/T4 every 6 months. Administer titrating dose of atenolol: 25mg tablets; Give ¼ tab once daily. Recheck heart rate in 1-2 weeks with target stressed rate of 140-160bpm 12-24 hours post-administration. Increase as needed until target reached. If able, institute blood thinner Clopidogrel (Plavix) 75mg tablets; give ¼ tab orally once daily (NOTE: this medication is very bitter on the cut edges and should be coated in entirety or administer in a gel cap).

Recommend recheck echocardiogram in 6 months to assess for progression, sooner if clinical issues arise.

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. This report was generated using transcription software, and minor dictation errors may be present. 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)

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