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Clinical Sonography & Telecytology
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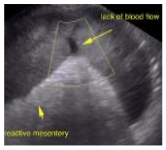
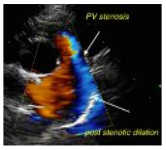
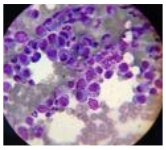
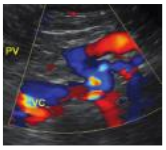





SonoPath.com
1-800-838-4268 info@sonopath.com

PATIENT
Dexter Small

SPECIES
Feline

BREED
DSH

SEX
Male Neutered

AGE
1 year

WEIGHT
12.5lbs

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

IMAGING PERFORMED BY
Brent Pilon, DVM

HOSPITAL NAME
O'Sullivan Animal Hospital

REFERRING VET
Dr. Pilon

INVOICE
20509

DATE
8/12/21

PRESENTING CLINICAL SIGNS

History: Presented for trouble breathing. Grade 5 heart murmur.

ECHOCARDIOGRAM FINDINGS

2D, m-mode, color flow and doppler imaging is available. The left ventricular wall is mild to moderately hypertrophied. There is a diffusely hyperechoic endocardium consistent with fibrosis. False tendon. Mild papillary muscle hypertrophy. The right ventricle is normal. There is minimal left atrial enlargement present. No right atrial enlargement present. Abnormal anterior motion of the mitral valve is present, with the tip visible in the LVOT during systole (see below). Elevated LVOT velocity on color flow and doppler with a dynamic profile. The anterior leaflet of the MV is thickened and elongated, consistent with dysplasia. There is mild eccentric mitral regurgitation present. No obvious aortic or pulmonic insufficiency is noted. No obvious intra or extracardiac shunts seen. There is no pericardial effusion noted. No pleural effusion appreciated.

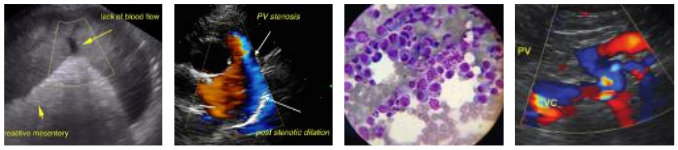
CARDIAC CHART

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	0.35-0.55	<2 (mean 1.5)	3.5-0.55	35-67	80-100
PATIENT	5.7	NM	0.68	1.49	0.75	56	92
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	1.3	1.3		3.8		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 diagnosis and cause of the murmur is mitral valve dysplasia leading to LV hypertrophy (mild to moderate in this case), an obstructive LVOT flow pattern and secondary mitral regurgitation. A primary hypertrophic component cannot be ruled out as a concurrent issue; however, is less likely given the age of the patient. There is minimal left atrial dilation present, indicating the risk of spontaneous CHF and/or a thrombotic event is currently low; however, there is great concern for progression going forward. It is important to note that this is not considered an extensive congenital study and ancillary are easily missed, such as small intra or extra-cardiac shunts. Referral should be considered in any congenital case for advanced echocardiography.



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Even with structural disease identified on exam, the left atrium is essentially normal ruling out typical congestive heart failure. This does not explain reported difficulty breathing and chest radiographs are strongly recommended.

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. In cases of solely primary MV dysplasia this can lead to improvement in the degree of obstruction and hypertrophy. Given today's findings it is reasonable to initiate at this time as below. No additional medications are indicated at this time.

Monitor at home for any respiratory signs or evidence of blood clot events (neurologic change, paralysis, etc.). Prognosis is guarded, given the highly variable rates of progression with subclinical feline cardiomyopathy. Many cats will remain asymptomatic until mid-life or beyond, while others develop CHF within the first years. Many cats will remain asymptomatic until mid-life or beyond, while others develop CHF within the first years. Close monitoring for progression to LA dilation in the future will help determine long term prognosis.

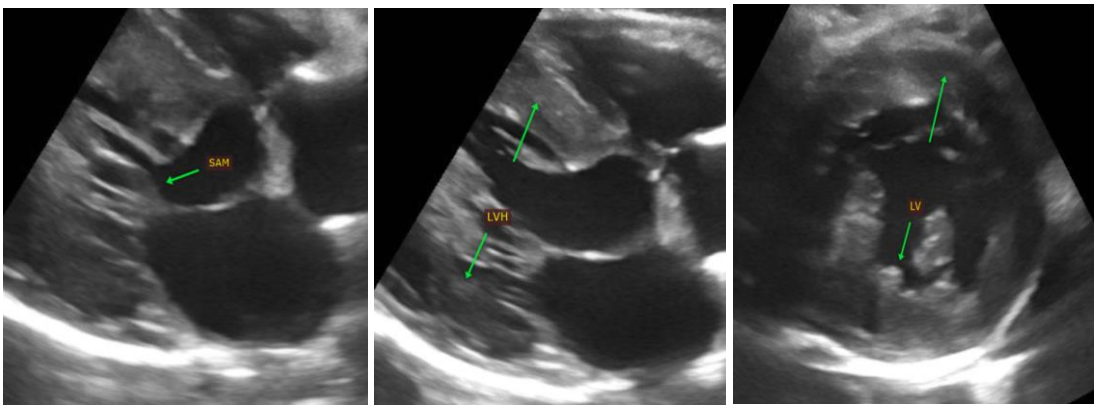
Anesthetic risk is considered mildly elevated, with risk for fluid overload, spontaneous CHF, hypotension, etc. Judicious IV fluid rates are advised to avoid fluid overload. Drugs that stimulate heart rate should be avoided unless clinically necessary (glycopyrrolate, atropine). Avoid ketamine, telazol, acepromazine and Dexdomitor. A reasonable protocol includes opioid/benzodiazepine premedication, propofol induction, isoflurane maintenance.

PLAN

CXR recommended. 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 is reached. Consider referral as discussed.

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

IMAGES



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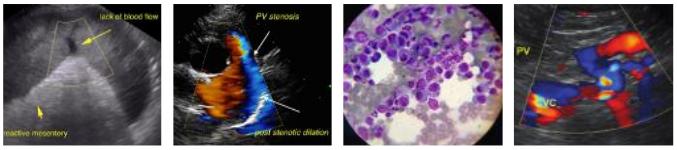

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The information and recommendations provided are based on the images presented by the referring veterinarian. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

Thank you for this referral. 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)
info@sonopath.com