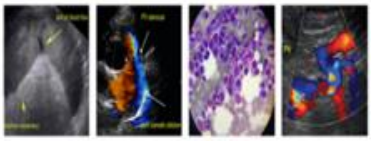
Mass Veterinary Services



SonoPath Clinical Sonography & Telecytology
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PATIENT
Lilah Metivier

SPECIES
Canine

BREED
Pitbull Mix

SEX
Female Spayed

AGE
1.2 years

WEIGHT
61lbs

INTERPRETED BY
Maggie Machen Lamy, DVM DACVIM (Cardiology)

IMAGING PERFORMED BY
Pamela Harrigan, RDCS

HOSPITAL NAME
Mass Veterinary Services

REFERRING VET
Dr. Masloski

INVOICE
22578

DATE
2/15/22

PRESENTING CLINICAL SIGNS

History: Lilah was noted to have a heart murmur in January. She seems to pant a great deal when out for walks. Good appetite. On auscultation: NSR, IV/VI murmur with PMI at base radiating to right, PSS, lung fields clear. BP: 140mmHg x 5. On fish oil.
*Sedated with propofol.

ECHOCARDIOGRAM FINDINGS

2D, m-mode, color flow and Doppler imaging is available.
Left ventricle: The LV diameter is normal with mildly depressed myocardial function. LV wall thicknesses are normal.
Left atrium: The left atrium is normal.
Mitral valve: The mitral valve appears normal with no mitral regurgitation.
Aortic valve/Aorta: The aortic valve is normal in morphology and mobility. Normal aortic outflow velocity; laminar flow. No aortic insufficiency.
Right ventricle: The RV is prominent with mild hypertrophy. No septal flattening.
Right atrium: Mild RA prominence.
Tricuspid valve: The tricuspid valve appears normal. No obvious stenosis. Trivial tricuspid regurgitation.
Pulmonic valve/Pulmonary artery: Pulmonic outflow velocities are elevated at the level of the valve. The max velocity is consistent with a mild stenosis; however, this is suspected to be an underestimation due to sedation. The pulmonic valve appears thickened and highly abnormal with a tethered appearance. Trace pulmonic insufficiency. Mild post-stenotic dilation of the MPA and branches.
Pericardium/other: No pericardial or pleural effusion noted. No obvious cardiac masses.
Heart rhythm: ECG reveals a sinus rhythm with an average HR of 130bpm.

2-Dimensional Measurements

Ao diam (cm)	1.9
LA diam (cm)	2.4
LA:Ao (Swe)	1.3
IVS thickness (cm)	1.0
LVID diastole (cm)	4.0
PW thickness (cm)	1.0
LVID systole (cm)	3.0
FS (%)	25

Doppler Measurements

PV Vmax (m/s)	3.2
AoV Vmax (m/s)	1.1
MR Vmax (m/s)	NA
TR Vmax (m/s)	NA
TR PG (mmHg)	NA

INTERPRETATION OF THE FINDINGS

The cause of the murmur is valvular pulmonic stenosis. The degree of obstruction is suspected to be moderate based upon the totality of the findings (velocity across the valve likely an under-estimation due to sedation). The valve appears highly abnormal, making a purely valvular stenosis likely. Mild right heart prominence and mild post stenotic dilation are appreciated. As a separate issue, the LV function is mildly depressed; however, in a heavily sedated patient this is likely the cause. Follow up is advised. No additional issues are identified.

Moderate PS cases fall within a grey zone. There are many patients that will not experience clinical signs (syncope, right-sided congestive heart failure) throughout their lifetime, however risk for progression to clinical signs will always remain. A diagnostic angiogram and potentially balloon valvuloplasty can be considered (particularly in the

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event of development of clinical signs) as the gold standard therapeutic option for this condition and may improve long term outcome. If the client is interested, referral for evaluation and discussion with a local Cardiologist should be considered. Whether or not referral/surgery is elected, medical management with atenolol is recommended to decrease heart rate and lessen the obstruction.

Monitor for development of associated clinical signs (collapse, abdominal distention, cough, labored breathing). Mild exercise restriction is advised. Omega fatty acid supplementation may have some long-term benefit, given these cases are predisposed to development of arrhythmias going forward.

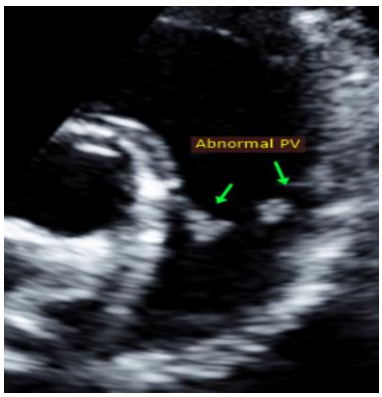
RECOMMENDATIONS

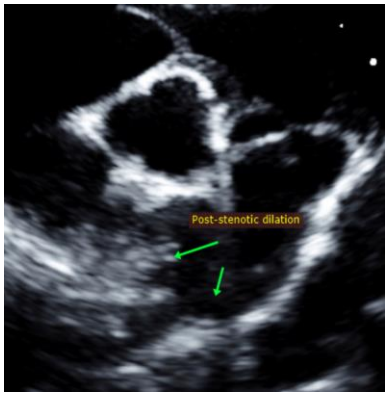
- Referral for Cardiology consultation if desired.
- If referral is declined, consider Atenolol 25mg tabs, give ¼ tab PO q12. Reassess HR 1-2 weeks later with a target of <120bpm stressed. Up-titrate as puppy grows to maturity.
- Omega fatty acid supplementation and mild salt restriction may be of some long-term benefit.
- Anesthetic risk is mild to moderate at this time. Avoid heart rate stimulating drugs such as atropine or glycopyrrolate unless absolutely necessary. Avoid vasodilators such as acepromazine. Mild IV fluid restriction is advised. Cardiac protective drug choices (opioid/benzodiazepine premedication, propofol or alfaxalone induction, isoflurane gas) are recommended. Pre-oxygenate for 5-10 minutes prior to induction and recover in O2 if possible.
- Monitor for arrhythmias, hypotension, and hypoxia both intra and post-operatively and intervene as necessary.
- Mild activity restriction is advised.

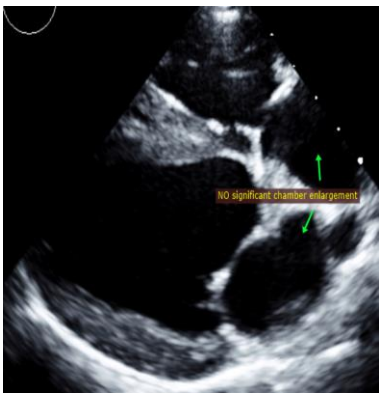
PLAN

- If referral is declined, recommend conservative monitoring with a recheck echocardiogram in 6-12 months, sooner if any development of clinical signs.

IMAGES







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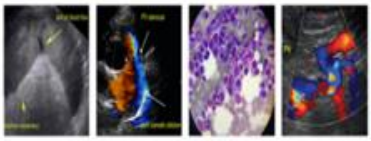

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The information and recommendations provided are based on the images presented by the referring veterinarian. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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

Echocardiogram performed by: Pamela Harrigan, RDCS
Pet Animal Ultrasound Service (4paus.com)