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Pet Animal Ultrasound Service
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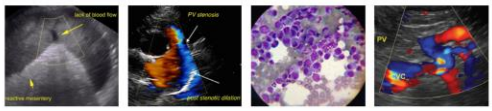

SonoPath
Clinical Sonography & Telecytology
EDUCATIONAL TELECONSULTATION SERVICES™
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PATIENT
Koda Levesque

SPECIES
Canine

BREED
Pomeranian

SEX
Male Neutered

AGE
13.7 years

WEIGHT
9.8lbs

INTERPRETED BY
Maggie Machen Lamy, DVM DACVIM (Cardiology)

IMAGING PERFORMED BY
Pamela Harrigan, RDCS

HOSPITAL NAME
Anchor Animal Hospital

REFERRING VET
Dr. Mulready

INVOICE
32112

DATE
8/3/23

PRESENTING CLINICAL SIGNS

History: Progressive heart murmur now grade IV-V/VI systolic with palpable thrill. Coughing at night. BP: 190-200mmHg (calm demeanor).

ELECTROCARDIOGRAPHIC FINDINGS

A six lead ECG is available at 25mm/s; 10mm/mV. The underlying rhythm is sinus in origin with an average heart rate of 120bpm. 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. While the initial tracing showed no ectopic beats. A second tracing taken during the echocardiogram showed development of ventricular bigeminy. The VPCs are monomorphic with an RBBB morphology. No couplets, triplets or other dysrhythmias observed.
ECG diagnosis: Normal sinus rhythm with periods of sustained ventricular bigeminy.

ECHOCARDIOGRAM FINDINGS

2D, m-mode, color flow and Doppler imaging is available.
Left ventricle: Mild LV dilation with adequate myocardial function. LV wall thicknesses are normal.
Left atrium: The left atrium is moderate to severely dilated with a horizontal component.
Mitral valve: The mitral valve is diffusely thickened with mild prolapse into the left atrial lumen. Severe eccentric mitral regurgitation with a normal velocity.
Aortic valve/aorta: The aortic valve is normal in morphology and mobility. Normal aortic outflow velocity; laminar flow. No aortic insufficiency.
Right ventricle: No right ventricular dilation.
Right atrium: No RA dilation.
Tricuspid valve: The tricuspid valve appears normal with no tricuspid regurgitation.
Pulmonic valve/pulmonary artery: The pulmonic valve is normal in morphology and mobility. No pulmonic insufficiency. Normal RVOT velocity; laminar flow.
Pericardium/other: No pericardial or pleural effusion noted. No obvious cardiac masses.

2-Dimensional Measurements

Ao diam (cm)	1.1
LA diam (cm)	2.3
LA:Ao (Swe)	2.0
IVS thickness (cm)	0.6
LVID diastole (cm)	3.5
PW thickness (cm)	0.6
LVID systole (cm)	1.1
FS (%)	67

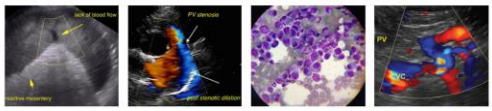
Doppler Measurements

PV Vmax (m/s)	1.1
AoV Vmax (m/s)	1.6
MR Vmax (m/s)	5.4
TR Vmax (m/s)	
TR PG (mmHg)	

INTERPRETATION OF THE FINDINGS

Chronic degenerative valve disease causing severe mitral regurgitation is identified. Significant left atrial enlargement indicates the risk for spontaneous congestive heart failure may be elevated going forward. No pulmonary hypertension or additional issues are identified.

A cough in this patient with severe heart disease is likely multi-factorial in origin, including mainstem bronchi compression and/or potentially some degree of upper or lower airway



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disease given the breed disposition. Early CHF/pulmonary edema should also be considered and baseline CXR are strongly recommended to rule out early congestion. In the absence of CHF, only Pimobendan and an ACE-I are recommended at this time. Cough suppression may also be helpful.

As a complicating factor, the patient has intermittent isolated VPCs firing in a bigeminal pattern. VPCs are likely secondary to structural disease in this patient; however, other possibilities such as systemic illness should be ruled out. The intermittent nature and single beats suggest treatment is likely unnecessary; however, a holter monitor should be considered in this case to further evaluate the arrythmia. If declined, reassessing in the future is recommended.

Long term prognosis is guarded. Patient will always be at risk for CHF, development of arrhythmias/LA tear, syncope and/or sudden death in the future.

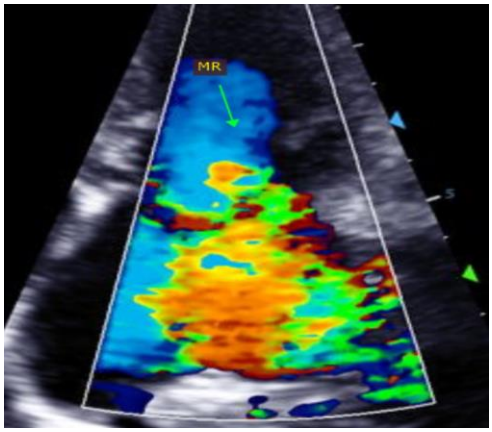
RECOMMENDATIONS

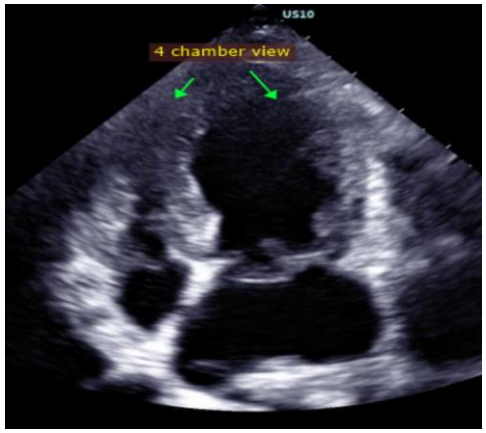
- CXR strongly recommended to rule out CHF.
- Institute Pimobendan 0.3mg/kg PO q12h.
- Institute ACE-I 0.5mg/kg PO q12h.
- Reassess BP in 3-4 months.
- Consider hydrocodone with homatropine for QOL (0.2-0.4mg/kg PO up to q4-6 hours PRN for cough; available in 5/1.5mg tabs and 5mg/5ml liquid suspension).
- A holter monitor is recommended as discussed.
- Omega fatty acid supplementation and mild salt restriction may be of some long-term benefit.
- Monitoring of sleeping breathing rates is recommended as the best way to screen for CHF at home.
- Monitor for development of a worsening cough, labored breathing, exercise intolerance or collapse episodes.

PLAN

- A recheck echocardiogram is recommended in 6 months to screen for progression, sooner if clinical signs arise.

IMAGES





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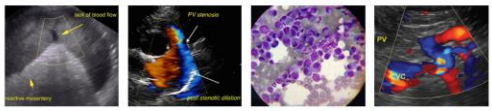

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The information and recommendations provided are based on the images presented by the referring veterinarian. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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

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