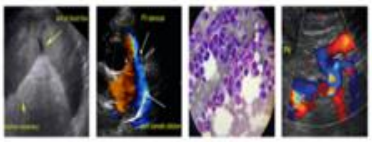
Mass Veterinary Services



SonoPath
Clinical Sonography & Telecytology
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PATIENT
Gremlin Dandy

SPECIES
Canine

BREED
Chihuahua Mix

SEX
Male Neutered

AGE
11 years

WEIGHT
22.5lbs

INTERPRETED BY
Maggie Machen Lamy, DVM DACVIM (Cardiology)

IMAGING PERFORMED BY
Pamela Harrigan, RDCS

HOSPITAL NAME
Mass Veterinary Services

REFERRING VET
Dr. Masloski

INVOICE
30172

DATE
4/11/23

PRESENTING CLINICAL SIGNS

History: Gremlin is referred to evaluate a heart murmur and recent collapse episodes occurring three days in a row after increased exercise. Radiographs reveal cardiomegaly. A systolic blood pressure was low at 70-79. No collapse episodes in the past week. Occasional nasal bleeding noted since autumn. Slightly decreased appetite. He passed a black tarry stool today. Blood work done this week revealed a mild anemia but normal platelets and Chem panel. On exam: NSR, grade IV/VI murmur with PMI left apical area radiating to right, PSS, lung fields clear, no nasal discharge, mm pink, moist, CRT<2. BP: 110mmHg x 4. *No sedation for study.

ECHOCARDIOGRAM FINDINGS

2D, m-mode, color flow and Doppler imaging is available.
Left ventricle: The LV diameter is increased with hyperdynamic myocardial function. LV wall thicknesses are normal.
Left atrium: The left atrium is markedly dilated.
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. Normal aortic outflow velocity; laminar flow. No aortic insufficiency.
Right ventricle: The right ventricle is mildly dilated with minimal hypertrophy.
Right atrium: Mild RA dilation. No evidence of tamponade.
Tricuspid valve: The tricuspid valve appears thickened and prolapsing with mild tricuspid regurgitation; velocity consistent with mild pulmonary arterial hypertension.
Pulmonic valve/Pulmonary artery: The pulmonic valve is normal in morphology and mobility. No pulmonic insufficiency. Normal RVOT velocity; laminar flow. The MPA and branches are dilated.
Pericardium/other: Small volume pericardial effusion noted. Scant pleural effusion suspected. No obvious cardiac masses **Heart rhythm:** ECG reveals a sinus rhythm with an average HR of 180bpm.

2-Dimensional Measurements

Ao diam (cm)	1.5
LA diam (cm)	3.7
LA:Ao (Swe)	2.5
IVS thickness (cm)	0.8
LVID diastole (cm)	4.7
PW thickness (cm)	0.9
LVID systole (cm)	2.3
FS (%)	51

Doppler Measurements

PV Vmax (m/s)	0.84
AoV Vmax (m/s)	1.6
MR Vmax (m/s)	4.8
TR Vmax (m/s)	3.3
TR PG (mmHg)	44

INTERPRETATION OF THE FINDINGS

Chronic degenerative valve disease causing severe mitral and mild tricuspid regurgitation. Significant left heart enlargement indicates the risk for left-sided congestive heart failure is elevated. Additionally, there is mild pulmonary hypertension present, which is likely a secondary phenomenon. No additional issues are identified.

Pericardial effusion is identified as the likely cause of recent collapse episodes. In a patient with this degree of left-sided heart disease, the most likely cause is a small left atrial tear (leading to hemorrhage into the pericardial space); however, right ventricular failure is not entirely ruled out. Mild pulmonary hypertension is unlikely to lead to the latter, making

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the former more likely. Syncope supports a tear; however, this can also develop secondary to the effusion being present. Regardless, either is possible in a patient with both severe LA dilation and mild right heart enlargement, and treatment for both is recommended as below.

Strict activity restriction and supportive care is advised until the fluid is able to reabsorb, as there is a high risk for decompensation and further episodes. If any syncope/decompensation occurs acutely in the future, then the amount of PCE should be reassessed.

The prognosis is poor long term, with a predicted survival time of <6 months. Patient will always be at high risk for recurrent biventricular CHF, LA tear, progressive cough and/or malignant arrhythmias/sudden death in the future.

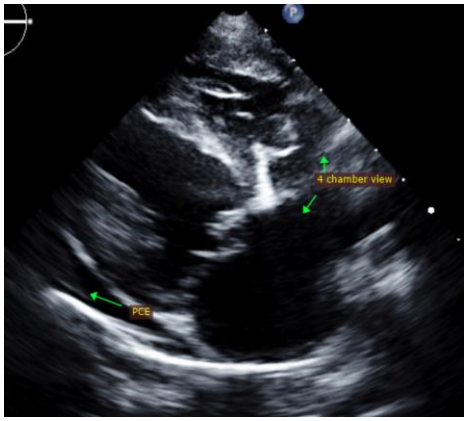
RECOMMENDATIONS

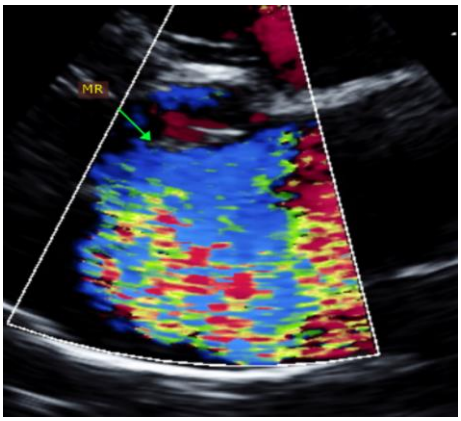
- Institute Pimobendan 0.3mg/kg PO q12h.
- Institute Lasix 1-2mg/kg PO q12h.
- Institute Spironolactone 1-2mg/kg PO q12h.
- Omega fatty acid supplementation and mild salt restriction may be of some long-term benefit.
- Elective anesthesia is not advised.
- Strict activity restriction.
- Monitor for development of a cough, labored breathing, exercise intolerance or collapse episodes.

PLAN

- Recheck renal values in 1-2 weeks, then every 3-4 months on diuretic therapy. If BP is >130mmHg and patient is doing well at home, institute ACE-I 0.5mg/kg PO q12h.
- If any further syncope is noted and/or PCE persists despite diuretic therapy, Sildenafil is also recommended 1-2mg/kg PO q8-12h.
- Recommend conservative monitoring with a recheck echocardiogram in 6 months, sooner if any development of clinical signs.

IMAGES





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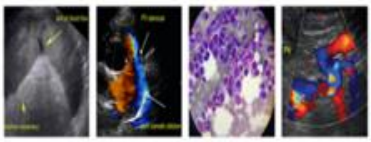

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The information and recommendations provided are based on the images presented by the referring veterinarian. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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)