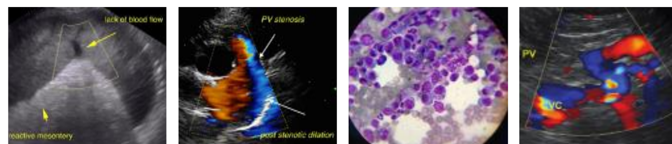
SonoPath

Clinical Sonography & Telecytology

EDUCATIONAL TELECONSULTATION SERVICES™



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

PATIENT
Chloe Mower

SPECIES
Canine

BREED
Sheltie

SEX
Female Spayed

AGE
12 years

WEIGHT
34.2lbs

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

IMAGING PERFORMED BY
Potomac Mobile Veterinary Ultrsound

HOSPITAL NAME
Greenbriar Hospital

REFERRING VET
Dr. Jarrett

INVOICE
27211

DATE
11/1/22

PRESENTING CLINICAL SIGNS

History: Grade 4/6 left systolic heart murmur. No historic or clinical signs of CHF. Dermal mast cell tumor on right medial stifle. Assess prior to anesthesia.
-Current medications: Diphenhydramine, Famotidine, Welactin, Denamarin, and Ursodiol.
-AUS results: ascites with hepatic congestion. Hypoechoic nodules and a liver mass. Adrenal mass.

ECHOCARDIOGRAM FINDINGS

2D, m-mode, color flow and doppler imaging is available. Diffuse thickening of mitral valve leaflets with prolapse into the left atrial lumen. Severe eccentric mitral regurgitation with severe left atrial dilation. Normal MR velocity. Mild LV dilation with hyperdynamic myocardial function. The tricuspid valve appears mildly thickened with septal prolapse and moderate tricuspid regurgitation. Velocity consistent with early PAH. Moderate right heart enlargement. No obvious RV hypertrophy. The pulmonic and aortic valves are normal in morphology and mobility. Normal aortic outflow velocities with laminar flow. Trace aortic and no pulmonic insufficiency. No pericardial or pleural effusion noted. No obvious cardiac masses.

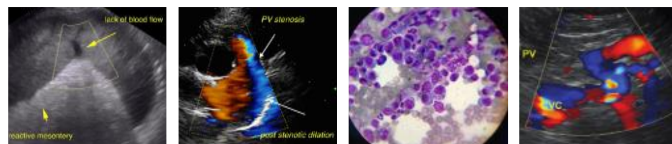
CARDIAC CHART

CANINE CARDIAC PARAMETERS	MR VMAX (m/s)	TR VMAX (m/s)	LA/AO (Boon method)	LA/AO (Heart Base; Swe)	FS (%)	EF (%)	EPSS (cm)
NORMAL PARAMETER	4.5-5.5	<2.7	1.3	<1.6	28-40	40-100	<0.6
PATIENT	5.4	3.0	2.5	2.5	44	75	0.27
CANINE CARDIAC PARAMETERS	**HR** (BPM)	**AV VMAX** (m/s)	**PV MAX** (m/s)	**BODY WEIGHT** (kg)	**LA** 2D short axis Base view (cm)	**LVIDd** Avg; 2D and m-mode short axis (cm)	**LVIDs** Avg; 2D and m-mode short axis (cm)
NORMAL PARAMETER	50-100	0.7-1.7	0.7-1.6	BELOW	BELOW	BELOW	BELOW
PATIENT	NM	1.5	0.5	15.5	4.4	4.7	2.6
*Normal chamber parameters expressed as a mean value (SD)				3	1.27 (5.3)	2.46 (2.46)	1.36 (5.5)
BODY WEIGHT DEPENDENT PARAMETERS				5	1.40 (4.5)	2.74 (5.2)	1.60 (4.7)
**Note: All measurements based upon multi-modal images and methods. An average value is reported.*				10	1.50 (3.8)	3.27 (3.5)	2.06 (3.1)
				15	1.83 (2.0)	3.71 (2.4)	2.43 (2.1)
				20	2.02 (1.9)	4.14 (2.2)	2.80 (2.0)
Adapted from June Boon, Veterinary Echocardiography, 1998				25	2.18 (2.4)	4.48 (2.9)	3.10 (2.5)
Rishniw M and Hollis NE, J Vet Intern Med 2000; 14:429-435				30	2.33 (3.3)	4.83 (3.9)	3.39 (3.4)
Hansson et al, Vet Rad and Ultrasound 2002				35	2.48 (4.3)	5.17 (5.0)	3.69 (4.5)
Bonagura et al. Echocardiography: principles of interpretation, Vet Clin North Am 15:1177, 1995				40	2.62 (5.2)	5.48 (6.1)	3.96 (5.4)
				50	2.88 (7.1)	6.07 (8.3)	4.46 (7.4)

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

Chronic degenerative valve disease causing severe mitral and moderate tricuspid regurgitation. Severe CVD has resulted in 4 chamber dilation. Mild pulmonary hypertension and moderate right heart dilation are also noted as a concurrent issue. No additional issues are identified.

Given the severity of structural disease seen here, ascites may certainly be due to right-sided congestive heart failure. Right-sided CHF can develop secondary to primary right heart disease, PAH, or secondary to a rapid arrhythmia. An ECG is recommended as a baseline as only mild PAH



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is seen here, which would not be related. This patient also has significant liver pathology, which must also be considered as a possible cause of ascites. Sampling of the effusion may be beneficial; however, regardless, full cardiac therapy is recommended as below. The patient is also notably tachypneic and baseline CXR are recommended to rule out biventricular failure.

Unfortunately, dogs with CHF and arrhythmias are at high risk for complications such as recurrent congestive heart failure, malignant arrhythmias and sudden death. Medications and close monitoring will help give the best prognosis possible, however the average survival time with this condition is <6 months.

Goals of therapy include correcting water retention, improving myocardial contractility, and afterload reduction. Medical management is recommended as below with a guarded to poor prognosis. If the patient has any further decline, fainting or respiratory distress, emergency hospitalization is recommended.

Please monitor at home for cough, lethargy, inappetance, collapse/fainting episodes or increase in respiratory rate or effort. Monitoring of sleeping breathing rates is recommended to screen for recurrent CHF at home. Moderate activity restriction is advised. Omega fatty acid supplementation and mild salt restriction may be of some long-term benefit.

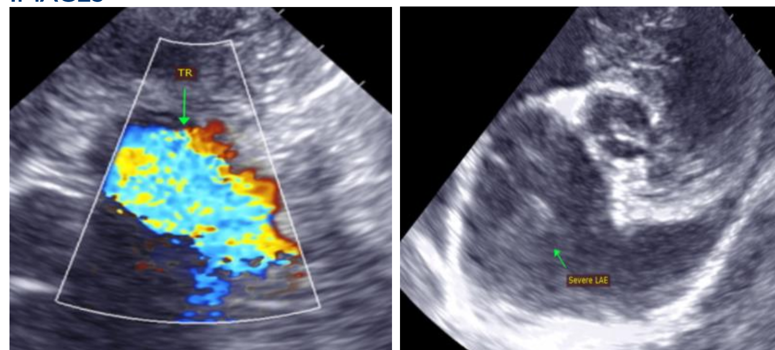
PLAN

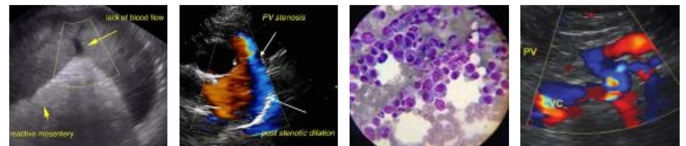
Consider abdominocentesis if needed for comfort or appetite, and/or for diagnostic purposes. Institute Spironolactone 1-2mg/kg PO q12 hours. Administer Furosemide 1-2mg/kg PO q12 hours. Administer Pimobendan 0.3mg/kg PO q12 hours. A screening BP is recommended. If BP >130mmHg, recommend ACE-I 0.5mg/kg PO q12h. If <130mmHg do not utilize until patient is normotensive and eating well at home. Baseline ECG recommended. Further systemic evaluation is advised, particularly if the response to cardiac supportive medications is not favorable. Euthanasia should be considered if quality of life suffers due to multi-organ disease.

Recheck renal panel and BP in 10-14 days then every 3-4 months lifelong, to ensure tolerance of medications.

A recheck echocardiogram is recommended in 6 months to screen for progression.

IMAGES





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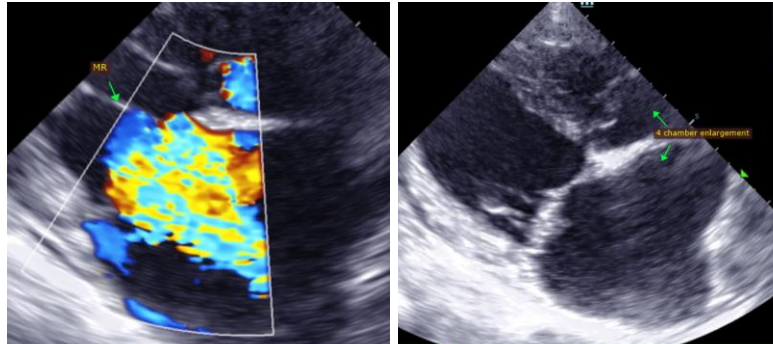

The information and recommendations provided are based on the images presented by the referring veterinarian. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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