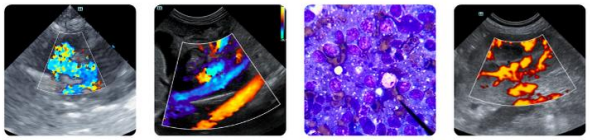

PATIENT

Cooper Rush

SPECIES

Canine

BREED

Spaniel Mix

SEX

Male Neutered

AGE

7.7 years

WEIGHT

23.1lbs

INTERPRETED BY

Maggie Machen Lamy, DVM, DACVIM (Cardiology)

IMAGING PERFORMED BY

Kristen Carpenter, DVM

HOSPITAL NAME

Pennridge Animal Hospital

REFERRING VET

Dr. Makem

INVOICE

45999

DATE

12/3/25

PRESENTING CLINICAL SIGNS

History: Grade 3/6 heart murmur. Progressive cough. BP: 117, 126mmHg. CXR showed possible CHF and MPA enlargement. Started on started on Pimobendan and Lasix; initially responded well but cough has worsened again recently.
-Current medications: Furosemide 10mg PO BID, Pimobendan 2.5mg PO BID.

ECHOCARDIOGRAM FINDINGS

2D, m-mode, color flow and doppler imaging is available. The mitral valve is diffusely thickened with prolapse into the left atrial lumen. There is marked eccentric mitral regurgitation present. The MR velocity is normal. There is marked left atrial enlargement. There is marked left ventricular dilation. Left ventricular systolic function is hyperdynamic. Mild right atrial and ventricular dilation (subjective). Mild thickening of the tricuspid valve with moderate TR. Velocity consistent with moderate pulmonary hypertension. The aortic valve appears trileaflet with normal mobility. No significant AI. There is normal systolic flow velocity across the aortic valve. The main pulmonary artery is mildly dilated. The pulmonic valve is normal in appearance. Flow through the RVOT/PV is normal in velocity. Trace PI. No pericardial/pleural effusion or cardiac masses are seen.

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	4.8	4.0	2.8	2.5	38	68	0.4
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	1.8	0.9	10.5	3.5	5.7	3.5
*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)
				25	2.18 (2.4)	4.48 (2.9)	3.10 (2.5)
				30	2.33 (3.3)	4.83 (3.9)	3.39 (3.4)
				35	2.48 (4.3)	5.17 (5.0)	3.69 (4.5)
				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)

Adapted from June Boon, Veterinary Echocardiography, 1998
Rishniw M and Hollis NE, J Vet Intern Med 2000; 14:429-435
Hansson et al, Vet Rad and Ultrasound 2002
Bonagura et al. Echocardiography: principles of interpretation, Vet Clin North Am 15:1177, 1995

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

The cause of the murmur is chronic degenerative valve disease causing marked mitral and moderate tricuspid regurgitation. Marked left atrial enlargement indicates the risk for spontaneous congestive heart failure is elevated. Moderate pulmonary hypertension is noted, which is likely secondary to a cough and active congestion. No additional issues are identified.

In light of the clinical signs, chest radiograph findings and severity of disease on echocardiogram, the diagnosis of congestive heart failure (stage C) is supported, and medications are warranted

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lifelong as below. A worsening cough despite therapy may suggest an insufficient dose of Lasix or potentially secondary issues, such as respiratory disease. Repeat CXR could be considered with the addition of Hydrocodone if needed, and the dose of Lasix should altered as below. Monitoring of sleeping respiratory rates will be paramount to screen for congestive heart failure at home. If able to be stabilized, the average survival time of canine patients with active pulmonary edema is 8-9 months on medications; however, most are able to maintain a good quality of life for that period on medications. Patient will always be at risk for recurrent CHF, development of arrhythmias/LA tear, syncope and/or sudden death in the future.

Omega fatty acid supplementation and mild salt restriction may also be of some long-term benefit. Monitor for acute progression of the cough, labored breathing, exercise intolerance or collapse episodes in the future.

Elective anesthesia is not advised, as there is high risk for complication.

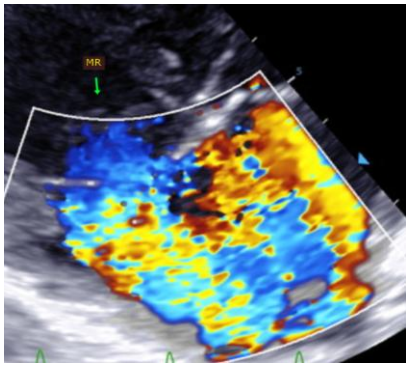
PLAN

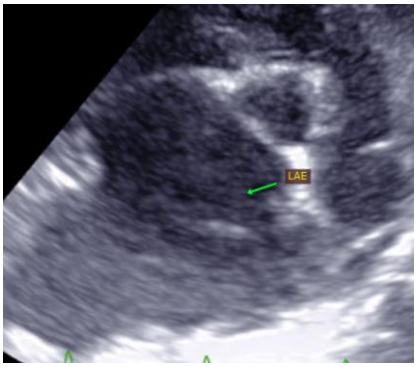
Continue Pimobendan 0.3mg/kg PO q12h. Increase Furosemide to 2mg/kg PO q12h. Institute Spironolactone 1-2mg/kg PO q12h.

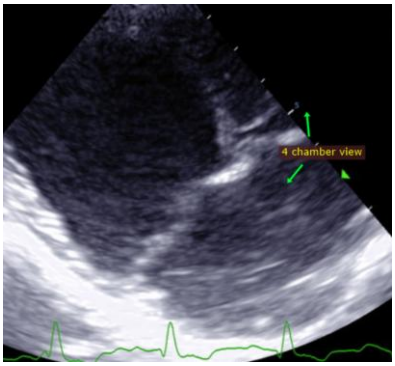
Monitor renal values and BP in 10-14 days, then every 3-4 months while on diuretics to ensure tolerance of medications. If doing well at home, renal values are reasonable and BP >130mmHg, administer ACEI 0.5mg/kg PO q12h. If the cough persists despite these changes, repeat CXR and/or Hydrocodone are recommended.

Recommend conservative monitoring with a recheck echocardiogram in 6 months, sooner if any development of associated clinical signs occurs in the interim.

IMAGES







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
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