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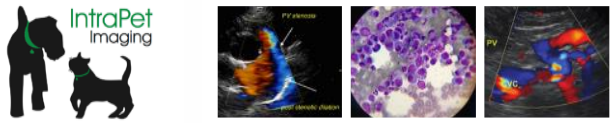

SonoPath
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PATIENT

Merlin Krizan

SPECIES

Canine

BREED

CKCS

SEX

Male Neutered

AGE

14 years

WEIGHT

17.24

INTERPRETED BY

Maggie Machen Lamy, DVM, DACVIM (Cardiology)

HOSPITAL NAME

Healing Paws Veterinary Wellness Center

REFERRING VET

Dr. Levitsky

INVOICE

21767

DATE

10/28/21

PRESENTING CLINICAL SIGNS

History: Dog has started coughing more in last several days especially after laying down. Had been coughing a little more over last several months but generally started as he was due for his next dose of medication. Eating/acting ok otherwise.
-Pertinent abnormal PE/Chem/CBC/UA Results: BUN: 35, Creat: 1.3, remainder NSF.
-Radiographs: (R lateral) taken 10/26 concern for CHF. Recommend start Lasix 12.5 mg 1/2 po BID.
-Current medications: Pimobendan 2.5mg bid and Benazepril 5mg 1/2 bid. Tried Lasix 12.5mg bid after last U/S and he was too PU/PD.
-Blood pressure: 120mmHg.
-Sedation used:
-Pertinent previous ultrasound results (8/2020 MML): Severe MR, severe LAE, mild LVE, mild RHE, moderate TR: 3.4m/s. LA: 3.0, LV: 4.0.
-STAT: Not requested.

RADIOGRAPHIC FINDINGS *NOTE: Images submitted for supplemental information only.

A single lateral film included. Cardiomegaly with mainstem bronchi compression and LA enlargement. Suspect PV enlargement; however, orthogonal views are recommended.

ECHOCARDIOGRAM FINDINGS

2D, m-mode, color flow and doppler imaging is available. The mitral valve is diffusely thickened with significant prolapse into the left atrial lumen. There is severe eccentric mitral regurgitation present. The MR velocity is normal. There is marked left atrial enlargement. There is mild left ventricular dilation. Left ventricular systolic function is hyperdynamic. There is normal systolic flow velocity across the aortic valve. No AI. The aortic valve appears trileaflet with normal mobility. The main pulmonary artery is normal in diameter. The pulmonic valve is normal in appearance with normal outflow velocity. No PI. Mild right atrial and ventricular dilation. Mild thickening and prolapse of the tricuspid valve with moderate TR. Velocity consistent with mild pulmonary hypertension. 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	5.3	3.3	NM	2.5	47	79	NM
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	167	0.8	0.7	7.8	3.5	3.9	2.1
*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

Chronic degenerative valve disease persists with severe mitral and moderate tricuspid regurgitation. Compared to the prior study, the left atrial dimension has continued to dilate. No additional issues are identified with stable pulmonary pressures.

The described cough is likely multi-factorial in origin, including a mechanical component due to cardiomegaly, possible concurrent airway disease and/or early CHF given the severity of disease. Screening chest radiographs are equivocal without an orthogonal view; however, there is concern for early decompensation given the degree of atrial enlargement. Given the symptoms and echo findings, full lifelong cardiac support is recommended as below including Lasix therapy. Depending on clinical response to the medications, cough suppression may also be useful. Monitoring of sleeping breathing rates in the future will be paramount to determine the origin of any future cough. The average survival of canine patients with active pulmonary edema is 8-9 months on medications, however they generally are able to maintain a good quality of life for that period. Patient will always be at risk for recurrent CHF, development of arrhythmias/LA tear, syncope and/or sudden death in the future. Monitoring of renal values is recommended lifelong.

Omega fatty acid supplementation and mild salt restriction may also be of some long-term benefit. Monitor for development of a worsening cough, labored breathing, exercise intolerance or collapse episodes.

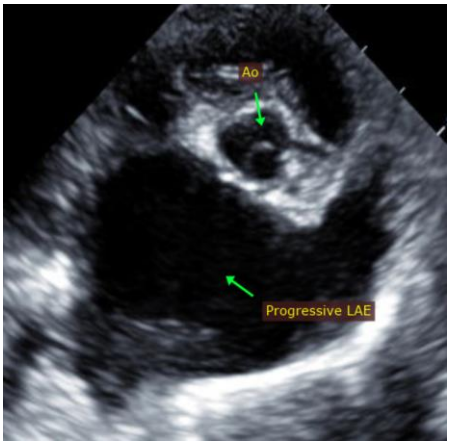
PLAN

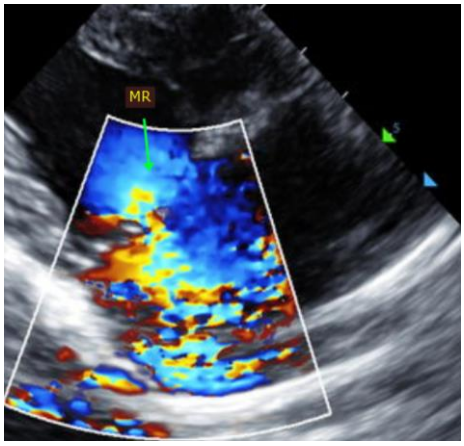
Continue Benazepril, Spironolactone and Pimobendan as prescribed. Institute Lasix 1-2 mg/kg PO q12h. Utilize hydrocodone if needed for quality of life.

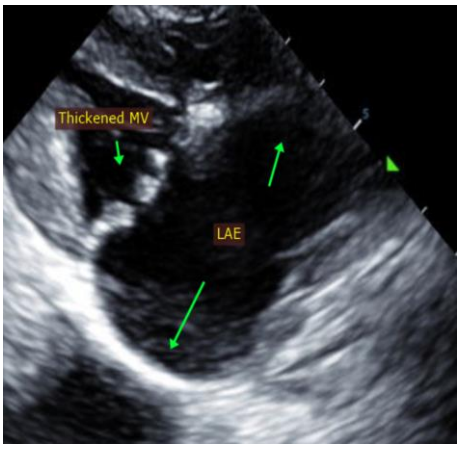
A renal panel and BP are recommended in 10-14 days, then every 3-4 months on diuretics to ensure tolerance of medications.

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

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.

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