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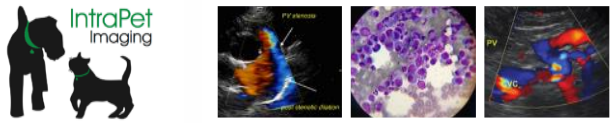

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PATIENT
Sami Gonnsen

SPECIES
Canine

BREED
Labrador Mix

SEX
Female Spayed

AGE
1.7.12

WEIGHT
63.4lbs

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

HOSPITAL NAME
Animal Emergency Hospital

REFERRING VET
Dr. Saubier

INVOICE
30607

DATE
5.4.23

PRESENTING CLINICAL SIGNS

History: Beginning last week - Thursday started coughing. Sunday lethargic and Monday stopped eating and drinking. Last night started coughing again. Had coughing fit for approx. 20 minutes this morning. Now breathing hard and abdomen distended.
-Abnormal lab results: History of elevated liver value (ALKP). Monitored by rDVM Last BW March ALKP 2926 History of bi-lateral TPLO sx.
-Pertinent abnormal PE/Chem/CBC/UA Results: Ascites, cardiomegaly, CHF.
-Radiographs: atrial fibrillation with VPCs.
-Current medications: Furosemide, Butorphanol, Pimobendan. Started Diltiazem 15mg PO q8hrs.
-Blood pressure: 90mmHg.
-Sedation used: Not required to complete full diagnostic ultrasound.
-Pertinent previous ultrasound results: No previous.
-STAT: Declined at this time.
-Imaging performed by: Stephanie Warga RDCS, RVT.

ECHOCARDIOGRAM FINDINGS

2D, m-mode, color flow and doppler imaging is available. Diffuse thickening of mitral valve leaflets with mild prolapse into the left atrial lumen. Severe mitral regurgitation with severe left atrial dilation. Normal MR velocity. Mild LV dilation with adequate systolic function given the heart rate. The tricuspid valve appears mildly thickened, with mild tricuspid regurgitation. TR velocity consistent with mild pulmonary hypertension. Mild right heart dilation. The pulmonic and aortic valves are normal in morphology and mobility. Normal pulmonic and aortic outflow velocities. No aortic and trace pulmonic insufficiency. No pericardial or pleural effusion noted. No cardiac tumors observed. **Marked irregular tachycardia throughout.**

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	5.02	2.9	NM	2.1	40	71	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	230	2.0	1.6	28.8	4.2	5.1	3.1
*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 **Note: All measurements based upon multi-modal images and methods. An average value is reported.* 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				5	1.40 (4.5)	2.74 (5.2)	1.60 (4.7)
				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)

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

Chronic degenerative valve disease causing severe mitral and mild tricuspid regurgitation. Severe CVD has progressed to 4 chamber dilation, and consequently a rapid arrhythmia (AF) has developed. Mild right heart dilation is also noted which is suspected to be secondary to tachycardia. Finally, mild pulmonary hypertension is identified which is likely secondary to active congestion and LA dilation.

Given the arrhythmia, reported clinical signs and severity of structural disease seen, this patient is likely in biventricular congestive heart failure. Going forward, aggressive therapy is recommended as below. Development of right-sided CHF is due to tachycardia (tachycardia-induced cardiomyopathy) and will NOT resolve until the rate is controlled. The importance of adequate rate control with rapid arrhythmias cannot be stressed enough. Treatment should be dictated by the ECG report; however, the current Diltiazem dose is subtherapeutic.

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.

Monitor at home for cough, lethargy, inappetence, 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.

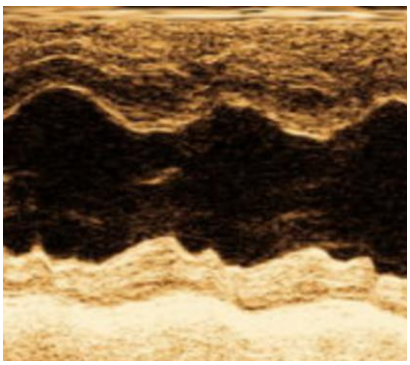
PLAN

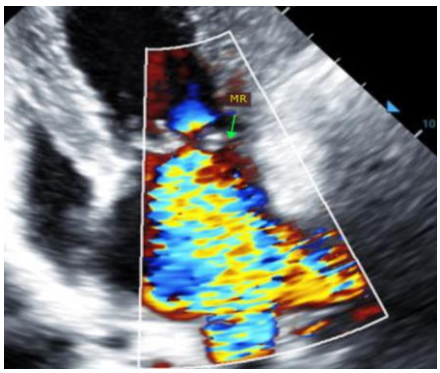
Consider a dose increase in Diltiazem based upon patient body weight and heart rate on exam; recommend 1-2mg/kg PO q8h. Institute Spironolactone 1-2mg/kg PO q12 hours. Continue Lasix 1-2mg/kg PO q12h. Continue Pimobendan 0.3mg/kg PO q12h.

Recheck renal panel/BP/HR in 10-14 days to ensure tolerance of medications. If BP >130mmHg, reinstitute ACE-I 0.5mg/kg PO q12h. If <130mmHg do not utilize until patient is normotensive and eating well at home.

Monitor renal values every 3-4 months lifelong. A recheck echocardiogram is recommended in 4-6 months to screen for progression.

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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