



PATIENT

Kong Schmidt

SPECIES

Canine

BREED

Pitbull Mix

SEX

Male Neutered

AGE

2.20.17

WEIGHT

71.3lbs

INTERPRETED BY

Maggie Machen Lamy,
DVM, DACVIM
(Cardiology)

PRESENTING CLINICAL SIGNS

History: Owner noted beginning of week belly seemed big - has been getting more distended. Acting normally otherwise - eating and drinking. No vomiting or diarrhea. Owner has been feeding a mix of wet and dry food - was weighed in August - 66lbs (Vet in Connecticut) Owner has RV and drives around - he has recently been to CT and PA. Also gets large amount table scraps - Monday was fed Fried chicken - picked off bone, potato salad, french fries dipped in honey mustard. Abdominal distension- fluid wave, muffled heart sounds. Pericardial effusion identified; removal was declined.

- Lateral abdomen: Ascites- loss of abdominal detail.
- Radiographs: Pleural effusion.
- Current medications: Ampicillin, Lasix.
- Blood pressure: 72mmHg 9/8/22 PM.
- Sedation used: Not required to complete full diagnostic ultrasound.
- Pertinent previous ultrasound results: No previous.
- STAT: Requested/Approved.
- Imaging performed by: Stephanie Warga RDCS, RVT.

ECHOCARDIOGRAM FINDINGS

2D, m-mode, color flow and doppler imaging is available. Mild left ventricular dilation with diminished systolic function and increased sphericity (LVIDdN: 1.8, LVIDsN: 1.4). Decreased LV wall thickness. Severe left atrial enlargement. The mitral valve appears mildly thickened, with no obvious prolapse into the left atrial lumen. Moderate central mitral regurgitation. Tricuspid valve appears normal in form and function. Moderate right atrial and ventricular dilation. Trace tricuspid regurgitation. Normal velocity. The aortic valve is normal in morphology and mobility. No aortic or pulmonic insufficiency. Normal RVOT and LVOT velocities. Moderate volume echogenic pericardial effusion with collapse of the right atrial wall. Scant pleural effusion noted. No obvious cardiac tumors.

CARDIAC CHART

HOSPITAL NAME

Animal Emergency Hospital

REFERRING VET

Dr. Saubier

INVOICE

26280

DATE

9.9.22

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	NM	2.1	NM	2.3	17	35	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	NM	1.0	0.7	32.3	4.3	4.9	4.1
*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)
<i>*Note: All measurements based upon multi-modal images and methods. An average value is reported.</i>				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

Unfortunately, this patient has significant cardiomyopathy and systolic dysfunction. This is causing dilation and volume overload of both the left and right heart. Moderate MR is noted, which is suspected to be secondary to annular stretch; early CVD cannot be ruled out. Regardless, the severity of dysfunction and pump failure is significant, and the patient is at high risk for decompensating into congestive failure. The finding of moderate volume pericardial effusion maybe consistent with congestive heart failure, particularly in light of ascites and pleural effusion. What is unusual is the echogenicity of the pericardial effusion is atypical and the patient does appear to be in cardiac tamponade, both which are uncommon to see with simple right-sided congestion. **Highly recommend an emergency pericardiocentesis to further assess the fluid type** as well as to relieve tamponade. This should be done for both diagnostic and therapeutic purposes. Regardless of results, there is enough structural disease here to warrant full cardiac support. Finally, the patient is tachycardic throughout the study and an ECG is strongly recommended.

Systolic failure can be primary in nature (DCM) or secondary to taurine deficiency, myocarditis, tachycardia-induced cardiomyopathy, thyroid disease, or infiltrative disease such as lymphoma. In a relatively young dog (uncommon signalment for DCM), consider testing for primary causes that may be treatable. A troponin (cTnI) level can be submitted to further investigate infiltrative/inflammatory contribution (myocarditis). Additionally, a taurine level may be helpful (screen for malabsorption issue), and a thorough diet history given the recent correlation with grain free/boutique brand/exotic ingredient diets. Finally, further systemic evaluation for underlying infiltrative contribution such as neoplasia is also reasonable (abdominal ultrasound, etc.). Regardless of cause, prognosis is poor at this stage in the disease process, with an average survival time of <6 months. The only treatable cause of systolic failure is diet/taurine deficiency, which is uncommon on commercially formulated dog foods. If the diet is of concern, highly recommend immediate diet change and taurine supplement regardless of blood taurine results. Please see the FDA website for more information.

If the breathing worsens or the patient appears unstable, continued hospitalization for stabilization should be considered. Cases of systolic failure are at high risk for malignant tachyarrhythmias (such as VT or rapid AF) and sudden death, and this should be expressed to the owner. Activity restriction is advised.

Elective anesthesia is not advised due to exceedingly high risk for complications.

Omega fatty acid supplementation and mild salt restriction may be of some long-term benefit. Monitor for development of a cough, worsening labored breathing, abdominal distention, exercise intolerance or collapse episodes in the future. Monitoring of sleeping breathing rates at home is recommended to assess response to medications and recurrence of CHF in the future.

PLAN

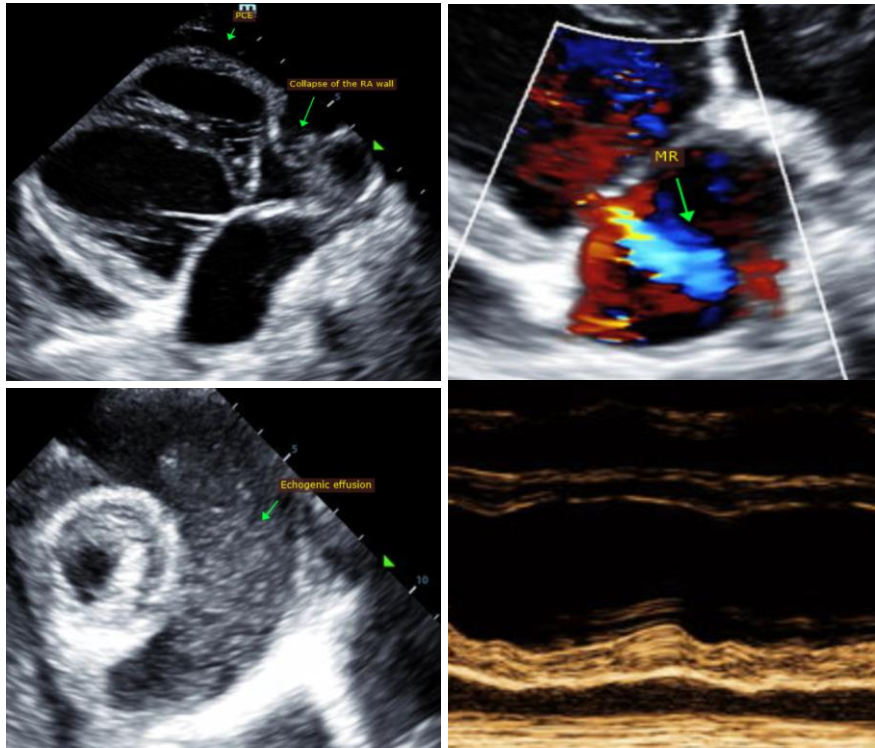
Baseline ECG is strongly recommended. Consider hospitalization if needed for injectable Lasix, oxygen support, etc. Highly recommend a diagnostic and therapeutic pericardiocentesis for assessment of fluid origin. Initiate aldosterone antagonist Spironolactone 1-2mg/kg PO q12h. Institute furosemide 1-2mg/kg PO q12h. Institute Pimobendan 0.3mg/kg PO q12h. Institute taurine 1000mg PO q12h. Diet history/change as discussed.

If QOL suffers or patient has worsening clinical signs, emergent reevaluation or euthanasia should be elected.

Monitor a renal panel and blood pressure in 1-2 weeks to ensure tolerance. If BP >130mmHg, institute ACEI 0.5mg/kg PO q12h. Consider cTnI, taurine level, AUS as discussed above.

A recheck echocardiogram is recommended in 4-6 months to screen for progression, sooner if clinical issues arise 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.

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