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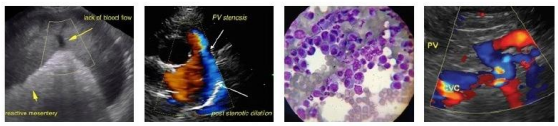


IMAGING PERFORMED BY
pawsonography@gmail.com 530-786-8340

PATIENT

Kaya Caughey

SPECIES

Canine

BREED

Pit Bull

SEX

FS

AGE

11 years

WEIGHT

68 lbs

INTERPRETED BY

Maggie Machen Lamy, DVM, DACVIM (Cardiology)

IMAGING PERFORMED BY

Loetitia St-Jacques, LVT/RVT

HOSPITAL NAME

Donner Truckee VH

REFERRING VET

Dr. Vannini

INVOICE

20773

DATE

8/27/21

PRESENTING CLINICAL SIGNS

History: DCM/CHF diagnosed 1y ago. RX furosemide 40mg bid, pimobendin 0.2mg/kg bid. Recent increased lethargy.
Abnormal PE/Chem/CBC/UA Results: Ascites, Tachycardia.

ELECTROCARDIOGRAPHIC FINDINGS

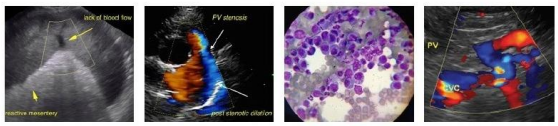
A six lead ECG is available at 50mm/s; 10mm/mV. The average heart rate is 166bpm with an underlying sinus rhythm; p for every QRS complex and vice versa. The P wave morphology is positive with a normal dimension. Normal PR. The QRS morphology is inverted in lead II with a wide complex. MEA is shifted right. Isolated VPCs throughout; singles only with an RBBB morphology (indicative of an LV origin). No supraventricular ectopic beats, pauses or other dysrhythmias observed.
ECG diagnosis: Normal sinus tachycardia with a RBBB. Isolated VPCs.

ECHOCARDIOGRAM FINDINGS

2D, m-mode, color flow and doppler imaging is available. Severe left ventricular dilation with akinetic free wall motion. The IVS is hyperdynamic. Increased sphericity. Increased EPSS. Severe left atrial enlargement. The mitral valve appears mildly thickened, with no obvious prolapse into the left atrial lumen. Moderate eccentric mitral regurgitation. The tricuspid valve appears mildly thickened. Moderate right atrial and ventricular dilation. Moderate tricuspid regurgitation. Velocity consistent with mild PAH. The aortic valve is normal in morphology and mobility. No subvalvular ridge present; normal LVOT velocity. No aortic insufficiency. Normal pulmonic valve with no pulmonic insufficiency seen. No pericardial effusion noted. Significant abdominal effusion. No obvious cardiac tumors.

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	4.5	3.3	NM	2.5	15	32	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	1.5	0.9	31	5.7	7.1	6.0
*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)
				35	2.48 (4.3)	5.17 (5.0)	3.69 (4.5)



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Hansson et al, Vet Rad and Ultrasound 2002	40	2.62 (5.2)	5.48 (6.1)	3.96 (5.4)
Bonagura et al. Echocardiography: principles of interpretation, Vet	50	2.88 (7.1)	6.07 (8.3)	4.46 (7.4)

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

Unfortunately this patient has significant 4 chamber dilation, with leaks in both the mitral and tricuspid valves and severe LA dilation. The systolic function overall is decreased; however the free wall is impaired (akinetic) while the septum is hyperdynamic. Given these findings, the academic diagnosis of chronic degenerative valve disease with an infarct (suspected) versus true primary cardiomyopathy (DCM) could be argued in this case. Regardless, the treatment is the same and this confirms the origin of the ascites is right-sided CHF. Chest radiographs are highly recommended to screen for edema, etc. This patient is at high risk for development of concurrent left-sided congestive heart failure as well, malignant arrhythmias (AF/VT), collapse and/or sudden death in the future.

The ECG shows a sinus tachycardia with atypical QRS morphology. This is consistent with a right bundle branch block, which is benign yet causes a wide negative complex. There are also single VPCs throughout, which are not surprising given the current crisis and degree of structural disease seen here. No treatment is indicated at this time, as I am hopeful that stabilizing the situation will decrease VPCs as well. Close monitoring is advised however, as the patient is clearly at risk for VT/AF going forward.

Continuation of cardiac supportive medications is recommended as below. Depending on patient stability, abdominocentesis and hospitalization for O2, ECG monitoring, etc may be helpful to stabilize the situation.

Medications and close monitoring will help give the best prognosis possible, however the average survival time with this condition is <6 months from the time of diagnosis of CHF which was a year prior. Monitoring of sleeping respiratory rates will be paramount to screen for recurrent congestive heart failure at home in the future. Cough suppression to improve QOL can also be considered once diuretics are on board for any residual mechanical cough in the face of normal sleeping respiratory rates.

Monitor for development of a cough, labored breathing, exercise intolerance or collapse episodes in the future. Monitoring of sleeping breathing rates at home is recommended to screen for progression to CHF. Omega fatty acid supplementation (1000mg once to twice daily) and mild salt restriction may be of some long term benefit.

Plan: Consider hospitalization for O2, IV diuretic therapy, ECG monitoring and supportive care until stable on room air. CXR recommended.
Once stabilized, oral medications are as follows: Administer Pimobendan 10mg PO q12h. Administer furosemide 40mg PO q8h if possible (alternative is 60mg PO q12h). Institute Spironolactone 1-2mg/kg PO q12h. Institute taurine 1 gm PO q12h.

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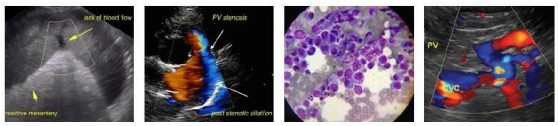

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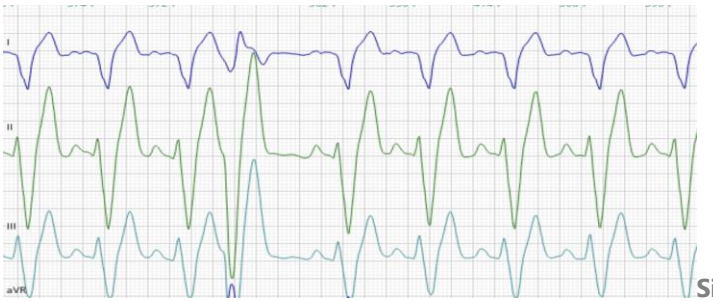
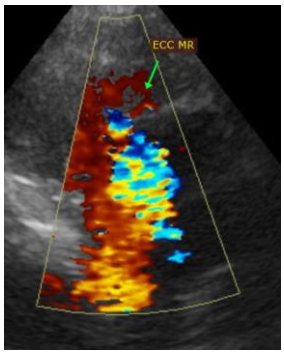
Recheck BP, heart rate/ECG and renal values in 10-14 days. If BP>130mmHg and patient is doing well, institute Enalapril or Benazapril 0.5mg/kg PO q12h. If hypotensive, do not utilize. Monitor renal values/BP/HR every 3-4 months lifelong. If ECGs persists, consider a holter in this patient.

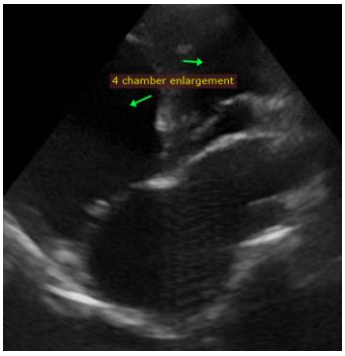
A recheck echocardiogram is recommended in 4-6 months to assess for progression, sooner if clinical signs arise.

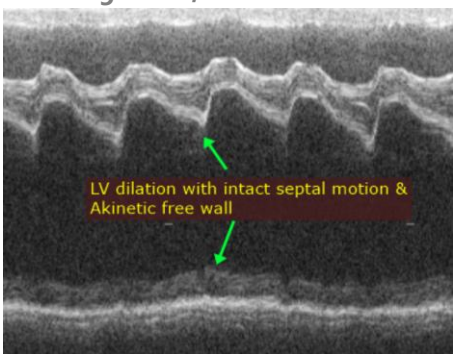
IMAGES



Single VPC; RBBB







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. 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