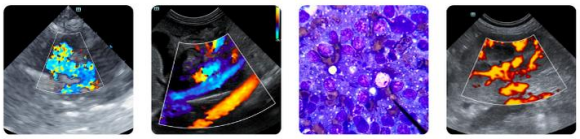

SonoPath FOSTERING THE ART OF VETERINARY MEDICINE™ www.thefocalzone.com info@thefocalzone.com 298.808.2608

PATIENT

Rocky Chaces

SPECIES

Canine

BREED

Boxer

SEX

Male Neutered

AGE

11 years

WEIGHT

76.9lbs

INTERPRETED BY

Maggie Machen Lamy, DVM DACVIM (Cardiology)

IMAGING PERFORMED BY

Amanda Stewart

HOSPITAL NAME

Preston Animal Clinic

REFERRING VET

Dr. McCausland

INVOICE

45989

DATE

12/3/25

PRESENTING CLINICAL SIGNS

History: Syncope, collapse and coughing/choking episodes. Heart murmur. Stertor and increased RE. Loud breathing with increased respiratory effort.

ELECTROCARDIOGRAPHIC FINDINGS

A six lead ECG is available at 25mm/s; 10mm/mV. The average heart rate is 150bpm. The rhythm is sinus in origin, with a p for every QRS complex and vice versa. The P wave morphology is positive with a normal dimension. Normal PR. The QRS morphology is positive with normal dimension. MEA is normal. A single isolated VPC is seen in an extended tracing. No APCs, pauses or other dysrhythmias observed.
ECG diagnosis: Normal sinus rhythm with a single isolated VPC.

ECHOCARDIOGRAM FINDINGS

2D, m-mode, color flow and doppler imaging is available. The mitral valve is diffusely thickened with minimal prolapse into the left atrial lumen. There is moderate eccentric mitral regurgitation present. The MR velocity is normal. Moderate left atrial enlargement. Borderline left ventricular dilation. Left ventricular systolic function is adequate. There is normal systolic flow velocity across the aortic valve. The aortic valve appears trileaflet with normal mobility. The main pulmonary artery is mildly dilated. Moderate right atrial and ventricular enlargement. The tricuspid valve is thickened with severe tricuspid regurgitation. Velocity consistent with moderate pulmonary hypertension (possibly an underestimation). No pulmonic or aortic insufficiency. Scant pericardial effusion. No cardiac masses are seen. Ascites seen on subcostal views.

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	5.8	3.7	NM	1.8	36	58	0.3
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	140	1.4	0.8	34.9	4.0	4.2	2.7
*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.*				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)

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 causing moderate mitral and severe tricuspid regurgitation is identified. Moderate left atrial dilation indicates the risk for spontaneous left-sided congestive heart failure is relatively low. More importantly, there is significant pulmonary hypertension

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based upon the TR velocity and appearance of the right heart. This puts the patient at risk for right-sided congestion, and/or syncope. Given these findings, the abdominal and pericardial effusion is most likely cardiogenic in origin and warrants full lifelong cardiac supportive medications including diuretics as below.

The underlying genesis of PAH is poorly understood in cases other than heartworm infestation, though it occurs with increased frequency in a variety of forms of chronic lung disease and in patients with idiopathic pulmonary fibrosis. Given the reported cough/hack symptom, further workup/therapy may also be useful including bronchodilators, pulmonary antibiotics, etc. A heartworm test should always be considered. CXR should be obtained for further evaluation.

The ECG is largely normal with a single isolated VPC. In a stressed dog in hospital this is not overly concerning; however, any boxer with arrythmias does warrant follow-up. Reassessing the ECG and/or a holter monitor once the patient is stabilized is suggestive.

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 worsening collapse episodes. Monitoring of sleeping breathing rates is recommended as the best way to screen for progression to CHF at home.

Unfortunately, there is high risk for spontaneous CHF, worsening cough and/or malignant arrhythmias and sudden death in the future. The prognosis with this degree of disease is poor, with most dogs able to maintain a good QOL on medications for an average of 8-12 months.

Elective anesthesia is not advised.

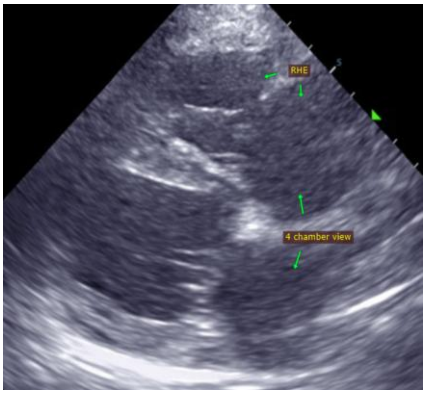
PLAN

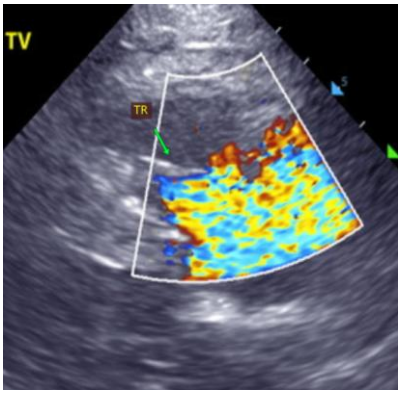
Baseline CXR and BP are recommended. Initiate Spironolactone 1-2mg/kg PO q12h. Institute Sildenafil 1-2mg/kg PO 8h. Initiate Lasix 1-2mg/kg PO q12h. Initiate Pimobendan 0.25-0.3mg/kg PO q12h. Abdominocentesis as needed for discomfort, inappetence or respiratory changes.

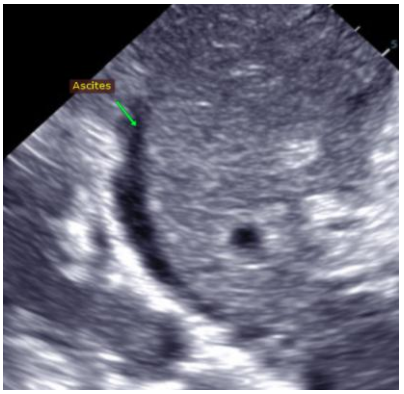
Recheck renal values, BP and ECG in 1-2 weeks (if any further arrythmias are noted a holter monitor should be considered), then every 3-4 months on diuretic therapy. If BP is >130mmHg and patient is doing well at home, institute ACEI 0.5mg/kg PO q12h (if hypotensive do not utilize).

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

IMAGES







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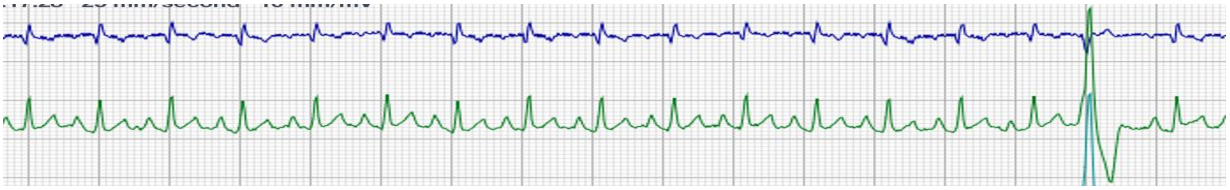

The information and recommendations provided are based on the images presented by the referring veterinarian. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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
Diplomate of the American College of Veterinary Internal Medicine (Cardiology)
info@sonopath.com