



**PATIENT**

Gojira Testeman

**SPECIES**

Canine

**BREED**

Boxer

**SEX**

Male Neutered

**AGE**

12.5.12

**WEIGHT**

61.2lbs

**INTERPRETED BY**

Maggie Machen Lamy,  
DVM, DACVIM  
(Cardiology)

**HOSPITAL NAME**

Festival Veterinary  
Clinic

**REFERRING VET**

Dr. Ullman

**INVOICE**

23892

**DATE**

4.26.22

**PRESENTING CLINICAL SIGNS**

History: Has been E/D normally, but has lost significant muscle mass, abdomen appears slightly distended, no v/d, excessive coughing. Grade 4-5/6 ejection murmur, possible arrhythmia.

-Pertinent abnormal PE/Chem/CBC/UA Results: Azotemia, mild anemia.

-Radiographs: Large heart base tumor with dorsal tracheal displacement, pulmonary edema .

-Current medications: Metronidazole, Furosemide, and Hydrocodone

-Sedation used: Not required to complete full diagnostic ultrasound.

-Pertinent previous ultrasound results: No previous.

-STAT: Declined.

-Imaging performed by: Stephanie Pearce RDCS, RVT.

**ECHOCARDIOGRAM FINDINGS**

2D, m-mode, color flow and doppler imaging is available. Massive lesion is visualized (9.0 x 6.7cm) in best viewed cross-section. The mass appears to be associated with the heart base. Severe mitral regurgitation, mild thickening of the mitral valve. LV function is adequate. Left atrium is severely dilated. LV is normal in diameter. RA/RV appear enlarged. Moderate TR. Velocity is consistent with moderate pulmonary hypertension. The pulmonic and aortic valves are normal in appearance. Normal LVOT velocity. Normal RVOT velocity. No PI or AI identified. Scant pericardial effusion seen. Evidence of hepatic congestion.

**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	5.4	3.9	NM	2.6	28	54	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	176	1.2	0.8	27.8	4.4	4.8	3.5
*Normal chamber parameters expressed as a mean value (SD)				3	1.27 (5.3)	2.46 (2.46)	1.36 (5.5)
<b>BODY WEIGHT DEPENDENT PARAMETERS</b>				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

Primary cardiac neoplasia is identified leading to compression of at least the distal pulmonary artery. The size of the mass is distorting normal views making additional compressive issues certainly a possibility. Once a mass is compressing the cardiac chambers and peripheral vasculature, the patient is at extremely high risk for congestive signs as is seen here with accumulation of pericardial effusion and evidence of hepatic congestion. There is also severe mitral and moderate tricuspid regurgitation with moderate LA enlargement, further putting the patient at risk for left-sided CHF as well. Moderate pulmonary hypertension is noted, which is likely secondary to compression. No obvious additional issues are identified.

Given the size of the mass, the likely diagnosis is a chemodectoma; however, a less common extra-cardiac tumor such as ectopic parathyroid, HSA, etc. cannot be entirely ruled out without a biopsy. The issue is more of a mechanical obstruction than true pulmonary hypertension, and sildenafil will be of little benefit. The best we can do is remove effusion and use medications for congestive heart failure to help slow development of fluid accumulation. The size of the mass should be relayed as a grave prognosis, as the patient is already experiencing clinical signs that are certainly related (arrhythmias, coughing, weight loss, etc.). Referral would be the gold standard in this case, given the severity of the findings and reported arrhythmias. Advanced imaging including advanced echocardiography +/- thoracic CT scan would be helpful to fully understand the extent of disease. If declined, supportive care can be attempted for the short term; however, diuretics and cough suppressants are a band aid over a much bigger issue as the tumor continues to grow. Euthanasia should be considered in this case if quality of life is suffering.

Going forward there are some options for obtaining more information and palliating this type of cancer. Should the client elect to proceed, radiation and/or chemotherapy can be discussed with an Oncologist.

High risk will always remain for recurrent effusions (pericardial, pleural or abdominal) and development of arrhythmias/sudden death at home. Monitor at home for progressive abdominal distention, labored breathing and/or lethargy and collapse.

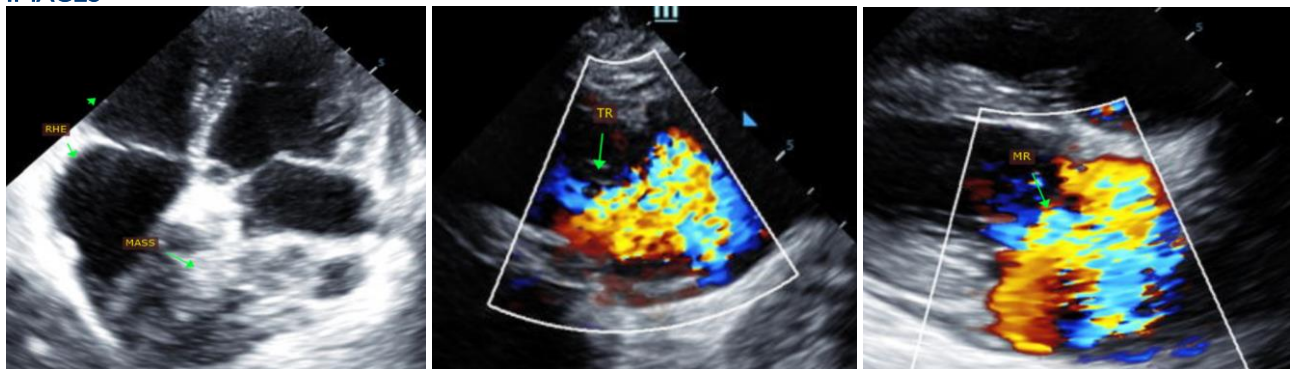
## PLAN

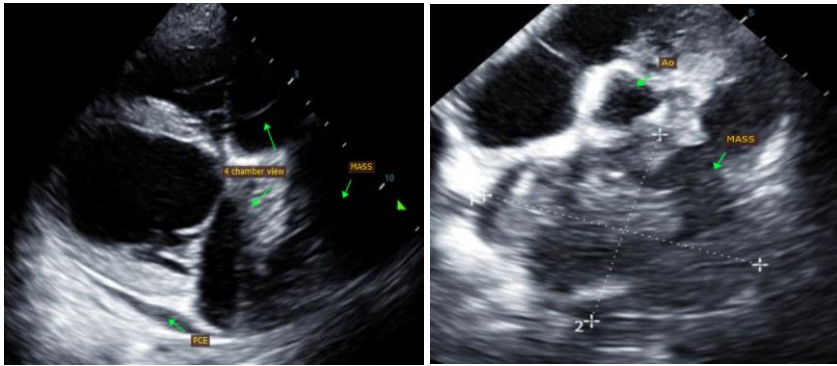
Highly recommend immediate referral to a multi-specialty center for advanced imaging, six-lead ECG evaluation, supportive care and further consultation. If declined, the following medications can be attempted: Administer Furosemide 1-2mg/kg PO q12h. Administer spironolactone 1-2mg/kg PO q12h. Administer Pimobendan 0.3mg/kg PO q12h. Administer further supportive care including Hydrocodone. Abdominocentesis if needed for comfort. If quality of life does not dramatically improve, Euthanasia should be considered.

A renal panel is recommended in 5-7 days, then every 2-3 months going forward.

A recheck echocardiogram to reassess mass dimension and heart size is recommended in 2-3 months.

## 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.

**Maggie Machen Lamy, DVM**  
Diplomate of the American College of Veterinary Internal Medicine (Cardiology)  
info@sonopath.com