



PATIENT

Lilly Hutt

SPECIES

Canine

BREED

Shih Tzu

SEX

Spayed Female

AGE

13 Years

WEIGHT

18.6 Pounds

INTERPRETED BY

James Wood, DVM,
 DACVIM (Cardiology)

IMAGING PERFORMED BY

Shari Reffi, CVT

HOSPITAL NAME

Cummings VH

REFERRING VET

Dr. Cummings

INVOICE

36890

DATE

4/30/26

PRESENTING CLINICAL SIGNS

History: BCS 3/9. Grade 3 mitral murmur w/cough. Heart murmur has worsened, now associated w/non-productive cough. Elevated ALKP and Chol. rest of chemistry & cbc normal.

Current Medications: Denamarin, Ursodiol, Cosequin, Melatonin and Flax Hull Lignans. Cytopoint for atopy.

ULTRASONOGRAPHIC EXAMINATION OF THE HEART

CANINE CARDIAC PARAMETERS	LA long axis	LAmxN	Ao long axis	LA/AO (Heart Base; Swe, short axis)	LA/AO long axis	LVIDd	LVIDdN
NORMAL PARAMETER		<1.57		<1.6	<2.5		<1.7
PATIENT	2.99	155	1.17	--	2.56	3.11	1.58
CARDIAC PARAMETERS	Body Weight (lbs)	AV VMAX (m/s)	PV MAX (m/s)	MR VMAX (m/s)	TR VMAX (m/s)	FS (%)	LVIDsN
NORMAL PARAMETER		0.7-1.7	0.7-1.6			22 - 49%	<0.9
PATIENT	18.6	--	--	--	--	33.1	0.9
CARDIAC PARAMETERS	HR (bpm)	MV E (m/s)	MV A (m/s)	MV E/A (m/s)	EF (%)	IVSdN	LVFWdN
NORMAL PARAMETER						<0.6	<0.6
PATIENT	140	--	--	--	63	--	--

Cardiac Presentation

Mitral Valve: The mitral valve is moderately thickened. There's mild anterior leaflet prolapse and mild to moderate eccentric mitral valve insufficiency.

Left Atrium: The left atrium is mildly dilated based on long axis left atrial dimension and La/Ao ratio.

Left Ventricle: The left ventricle is equivocally dilated based on LVIDDN. Normal LV systolic function is noted. The LV filling pattern is normal based on E and A waves.

Aortic Valve: The aortic valve is normal in appearance and motion. Normal trans-aortic flow profile and velocity. The aortic valve is competent.



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Right Atrium: The right atrium is subjectively normal in size.

Tricuspid Valve: There's trace to mild tricuspid valve insufficiency with a normal estimated RV systolic pressure.

Right Ventricle: Right ventricle reveals subjectively normal wall thickness and chamber size.

Pulmonary Valve and Pulmonary Trunk: The pulmonary valve is normal in appearance and motion. Normal trans-pulmonary flow profile and velocity. The pulmonary trunk and proximal branch pulmonary arteries are normal in size with a subjectively normal RPA distensibility.

Pulmonary Hypertension: There is a low suspicion of clinically relevant pulmonary hypertension based on the lack of morphologic changes to the right heart and proximal pulmonary arteries.

Abdomen: The caudal vena cava is normal in size/distensibility. The hepatic veins are subjectively normal in size. No cavitory effusions visualized.

ULTRASONOGRAPHIC FINDINGS

- Myxomatous mitral valve disease, stage B-2

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

The echocardiogram showed evidence of myxomatous mitral valve disease. Based on this echocardiogram, there is significant enough chamber enlargement that the patient would benefit from starting pimobendan (if not already started) to slow the progression of this disease and delay the onset of CHF.

CHF at this time is unlikely based on the reported history and examination, however baseline chest X-rays (within the last ~6 months- 1 year) are reasonable to fully rule out CHF, and obtain a baseline of the patient's pulmonary parenchyma for comparison should clinical signs develop in the future.

A blood pressure is also recommended. If the systolic BP >160mmHg while calm, an ACEi at 0.3-0.5 mg/kg PO q12 is recommended provided normal renal function. If so, recheck BP and renal panel with electrolytes in 1-2 weeks. Amlodipine should be considered if persistently hypertensive.

If not hypertensive, the benefit of an ACEi or other RAAS blockade is not well established in this population of patients, and is typically reserved for once CHF develops, or if the left atrial and ventricular dimensions are severely increased. Monitoring of renal function is necessary when on these medications.

The patient's cardiac remodeling is minimal, and a cardiogenic cause of the cough is not suspected at this time. Recommended further evaluating underlying airway disease and treatment thereof.

MONITORING

It is very important to catch any clinical signs concerning for emerging CHF as early as possible. The most reliable method is to monitor the resting respiratory rate at home while the pet is (ideally) sound asleep. Count the respirations per minute (number of times the chest moves in and out per minute; in and out being one breath) while sound asleep. Normal resting respiratory rates in animals will be between 10-30 breaths per minute or less (ideally in the teens or low 20s). If the resting RR is trending upward, consistently >35/min while resting/sleeping AND/OR there is a new or progressive cough, the patient should be seen urgent for evaluation to determine if CHF is developing. Keeping a



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log of breathing rates is useful, and you can download the app “Cardalis” that helps measure and keep a log of breathing rates.

MEDICATIONS

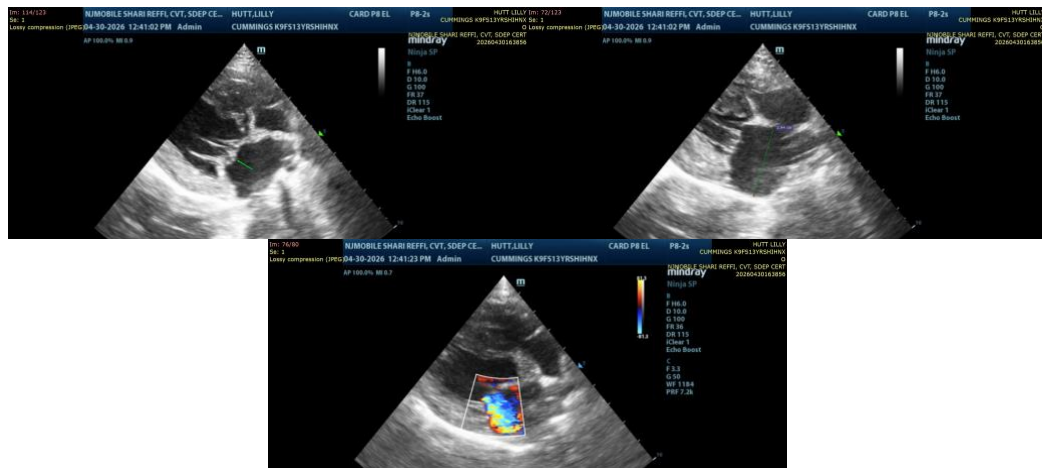
Pimobendan 2.5 mg tablets. Give one tablet by mouth twice daily.

DIET

Mild sodium restriction may be beneficial in managing this stage of cardiac disease. High-salt treats or diets should be avoided. If interested, further information on moderate sodium restricted diets for dogs with advanced cardiac disease can be found at: <https://heartsmart.vet.tufts.edu/nutrition/>.

RECHECK

Recheck in 6 months or sooner if concerns arise. At that time, a recheck echocardiogram to monitor for progression +/- thoracic radiographs (i.e., recommended if there is a new cough or increase in the RR).



The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. 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.

James Wood, DVM, DACVIM (Cardiology)

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