



## PATIENT

Ava Sheely

## SPECIES

Feline

## BREED

Bombay

## SEX

Female Spayed

## AGE

13 years

## WEIGHT

6.5lbs

## INTERPRETED BY

Maggie Machen Lamy,  
DVM, DACVIM  
(Cardiology)

## IMAGING PERFORMED BY

Jennifer Todd, DVM

## HOSPITAL NAME

Lambs Gap Animal Hospital

## REFERRING VET

Dr. Todd

## INVOICE

22416

## DATE

2/8/22

## PRESENTING CLINICAL SIGNS

History: Recheck echo; previously diagnosed with HCM at another clinic. Ava was presented because her coughing has increased. On exam she had increased inspiratory effort and grade IV/VI heart murmur right and left parasternal.

-Current medications: Clopidogrel 18.75mg Q24hours, cerenia and Lasix 2.15mg Q12 h.

-Abnormal lab results: ProBNP=697 on 2/1/22.

-Radiographs: Showed moderate cardiomegaly, enlargement of pulmonary vessels and no CHF.

-Blood pressure today was 152/75, 152/76, 147/72mmHg.

**ELECTROCARDIOGRAPHIC FINDINGS** \*Note: Single lead ECGs are evaluated as a rhythm strip. Morphology/MEA cannot be definitively commented on.

A single lead ECG is available; 25mm/s, 10mm/mV. The average heart rate is 160bpm with a largely regular rhythm. The rhythm is sinus in origin, with a p for every QRS complex and vice versa. The QRS is inverted. The P morphology positive. No ectopic beats, pauses or other dysrhythmias observed.

ECG diagnosis: Normal sinus rhythm. Inverted QRS.

## ECHOCARDIOGRAM FINDINGS

2D, m-mode, color flow and doppler imaging is available. The left ventricular wall is normal in dimension with apical thinning. The LV chamber is mildly increased in diastole with increased sphericity. A large muscular VSD is seen just below the aortic valve. The shunt is left to right although max velocity is not assessed. The left atrium is moderately increased in size. The right atrium appears mildly increased in size. The right ventricle appears largely normal. The MPA is dilated. The mitral valve is largely normal in structure and mobility. Mild MR due to annular stretch. Blood flow through the PV is mildly increased in velocity consistent with a relative stenosis. No obvious PV abnormalities. The tricuspid valve is mildly thickened with mild TR. Normal velocity. There is no pleural or pericardial effusion seen.

## CARDIAC CHART

FELINE CARDIAC PARAMETERS	BODY WEIGHT (kg)	HR (BPM)	IVSd (cm) (Moise, Pipers)	LVIDd (cm) (Moise, Pipers)	LWVd (cm) (Moise, Pipers)	FS (%)	EF (%)
NORMAL PARAMETER	-----	150-240	0.35-0.55	<2 (mean 1.5)	3.5-0.55	35-67	80-100
PATIENT	2.9	NM	0.46	1.84	0.44	33	60
FELINE CARDIAC PARAMETERS	LA/AO (Boon)	LA/AO HEART BASE (Swe) (Abbott)	LA 2D short axis Base view (cm) (Abbott)		LVOT VEL (m/s)	RVOT VEL (m/s)	E max (m/s)
NORMAL	<1.5	<1.3	<1.2		<1.6	<1.3	<0.9
PATIENT	1.9	1.8	1.5		1.5	2.0	NM
<p>*Note: All measurements based upon multi-modal images and methods. An average value is reported. Adapted from June Boon, Veterinary Echocardiography, 1998 Abbott J &amp; MacLean H JVIM 2006;20: 111-119, Moise et al. Am J Vet Res 47:1476, 1986. Pipers et al. Am J Vet Res 40:882, 1979.</p>							



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**INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS**

The cause of the murmur is a large muscular ventricular septal defect (VSD). There is no evidence of LV hypertrophy/HCM as suggested by the prior evaluation. The defect is large in dimension, with significant left-sided volume overload. There are also leaks in the mitral and tricuspid valves which are relatively insignificant. No additional congenital defects are visualized; however, with this degree of anatomic distortion these are certainly easily missed. Given a historical alternative diagnosis and the degree of abnormalities seen here, highly recommend referral to a local Cardiologist for advanced imaging and evaluation.

The finding of a large VSD is quite unusual in cats and this senior is certainly at risk for acute decompensation. If referral is declined, full cardiac support is recommended as below, even without obvious reported CHF on the films. If the cough does not improve, a course of Azithromycin can be attempted to cover respiratory causes as well. The prognosis is poor long term, and patient will always be at risk for development of congestive signs, arrhythmias, and/or sudden death in the future.

The ECG is unremarkable without an obvious arrhythmias. These are common with this particular type of defect and follow up is advised should any syncope be noted in the future.

Elective anesthesia is not advised.

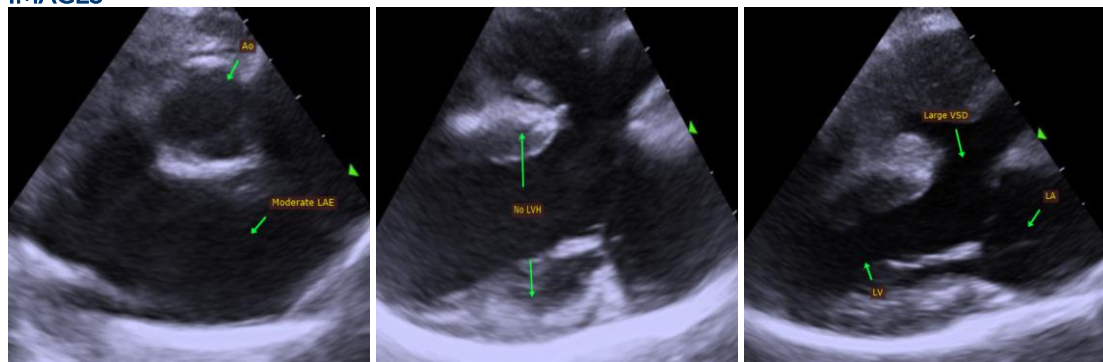
**PLAN**

Continue Plavix (1/4 of a 75mg tablet PO q24h – this medication is bitter along the cut edge). Recommend institution of Spironolactone (1-2mg/kg PO q12h). Recommend institution of Pimobendan (off label use) 1.25mg PO q12h. Recommend a dose increase of Lasix to 1-2mg/kg PO q12h. \*Note: multiple medications can be overwhelming in cats; if difficult to medicate, Lasix and Plavix are most important. Consider liquid Lasix formulation if needed.

Monitor renal values and BP in 1-2 weeks than every 3-4 months lifelong. If doing well and BP >130mmHg, consider addition of an ACEI 0.5mg/kg PO q12h. If cough persists, consider repeat CXR, course of Azithromycin, etc. Monitor at home for any associated clinical signs, including respiratory changes or signs of a thrombus.

Recheck echocardiogram in 6 months, sooner if any clinical signs arise in the interim.

**IMAGES**





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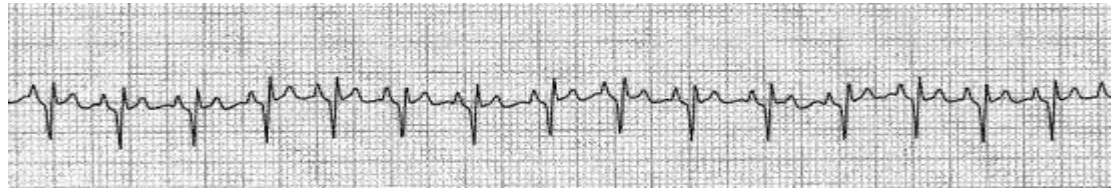
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The information and recommendations provided are based on the images presented by the referring veterinarian. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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**  
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