



**PATIENT**

Shadow Moos

**SPECIES**

Feline

**BREED**

DSH

**SEX**

Male Neutered

**AGE**

16 years

**WEIGHT**

7.48lbs

**INTERPRETED BY**

Maggie Machen  
Lamy, DVM, DACVIM  
(Cardiology)

**HOSPITAL NAME**

Cat Hospital at  
Towson

**REFERRING VET**

Dr. Scarborough

**INVOICE**

20613

**DATE**

8/18/21

**PRESENTING CLINICAL SIGNS**

History: New heart murmur noted on recent exam; tested + for heartworm on 08/02/2021, both Ag and Ab; confirmed via IDEXX. No other clinical signs on exam or at home.

-Pertinent abnormal PE/Chem/CBC/UA Results: Heartworm positive.

-Current medications: Prednisolone 5mg QD.

-Sedation used: Gabapentin PO.

-STAT: Not requested.

**ECHOCARDIOGRAM FINDINGS**

2D, m-mode, color flow and doppler imaging is available. The left ventricular wall is normal in dimension. There is a diffusely hyperechoic endocardium consistent with age-related fibrosis. Minimal remodeling. The papillary muscles are hyperechoic. The left atrium is normal in size. The right atrium is normal in size. The right ventricle appears normal. The mitral valve is normal in structure and mobility. No MR. The tricuspid valve appears normal in structure and mobility. Trace TR. Normal velocity. Blood flow through both the LVOT and RVOT are normal in velocity. No obvious worms in the MPA or branches. No significant MPA dilation. No effusions. No obvious cardiac tumors.

**CARDIAC CHART**

FELINE CARDIAC PARAMETERS	BODY WEIGHT (kg)	HR (BPM)	IVSd (cm) <small>(Moise, Pipers)</small>	LVIDd (cm) <small>(Moise, Pipers)</small>	LVWd (cm) <small>(Moise, Pipers)</small>	FS (%)	EF (%)
<b>NORMAL PARAMETER</b>	-----	150-240	3.5-0.55	<2 (mean 1.5)	3.5-0.55	35-67	80-100
<b>PATIENT</b>	3.4	150	0.31	1.46	0.36	40	75
FELINE CARDIAC PARAMETERS	LA/AO <small>(Boon)</small>	LA/AO HEART BASE (Swe) <small>(Abbott)</small>	LA 2D short axis Base view (cm) <small>(Abbott)</small>		LVOT VEL (m/s)	RVOT VEL (m/s)	E max (m/s)
<b>NORMAL</b>	<1.5	<1.3	<1.2		<1.6	<1.3	<0.9
<b>PATIENT</b>	NM	1.2	1.16		0.5	0.55	NM

Adapted from June Boon, Veterinary Echocardiography, 1998  
Abbott J & 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.

## **INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS**

Overtly normal geriatric cardiac structure and function. Mild fibrosis of the left ventricular wall is noted, which is likely a normal age-related variant. No significant valve leaks are noted, and flow through the great vessels is normal in velocity. The MPA and right heart appear normal, without obvious PAH or adult heartworms. No definitive cause is identified for the murmur in this study, making it likely physiologic in origin (i.e., secondary to tachycardia, volume changes, etc.). Given these findings and a normal LA dimension, no medications are indicated.

Heartworm disease in cats is difficult to definitively diagnose, given a typically low worm burden (typically only 1-6 worms) and unpredictable antigen testing (must have female worm present). This patient is both antigen and antibody positive making this likely a trusted result. There is a very low risk for caval syndrome in cats (again, due to low worm burdens) and this is the only time the risk of surgery is warranted. From a medical standpoint, the approach is very similar to feline asthma syndrome and includes institution of a taper course of steroids as dictated by the American Heartworm Society if symptomatic. Adulticide therapy (of any kind) is not recommended in cats even with definitive HW disease, nor have anti-coagulants or Doxycycline been shown to produce a clinical benefit. Any further information regarding the treatment of suspect heartworm infection in either species can be found on the AHWS website ([www.heartwormsociety.org](http://www.heartwormsociety.org)). Monthly prophylactic HW preventative is also recommended (Ivermectin, milbemycin oxim, moxidectin or selamectin) and is not precluded by seropositivity.

Future monitoring will include symptomatic management and repeat chest radiographs for comparison.

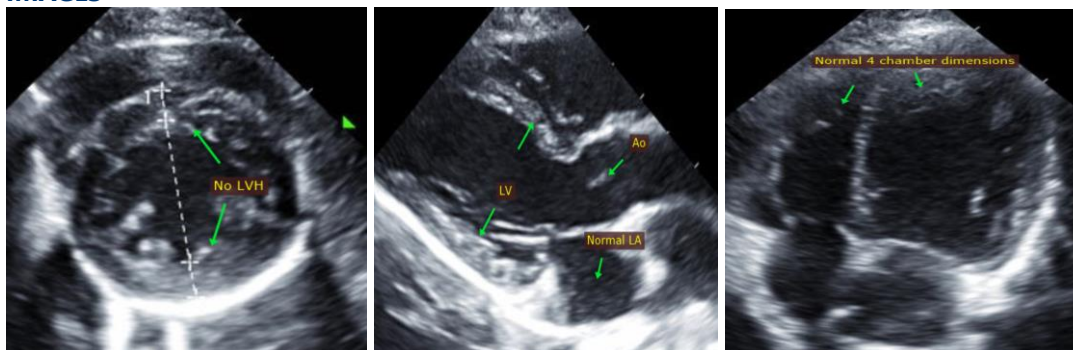
No cardiac specific medications are indicated.

No cardiac contraindication for general anesthesia. Should fluid or steroid therapy be indicated in the future, any cat should be monitored for intolerance (changes in RR/RE).

Monitor at home for signs of cardiac compromise, including respiratory changes and/or signs of a blood clot event (paralysis, neurologic changes).

Recommend recheck echocardiogram in 1 year to assess for any progressive issues or development of disease the pre-existing murmur may mask.

## **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)**