


**PATIENT**

Vixen Bartelt

**PRESENTING CLINICAL SIGNS**

 History: Grade 5/6 heart murmur. Possible mild exercise intolerance. Assess prior to anesthesia.  
 \*Images inaccurately labeled Max Anes; confirmed to be Vixon (AC).

**SPECIES**

Feline

**BREED**

DSH

**SEX**

Female

**ECHOCARDIOGRAM FINDINGS**

2D, m-mode, color flow and doppler imaging is available. The left ventricular wall is normal in dimension. The LV chamber is mildly increased in diastole. A moderate diameter perimembranous VSD is seen just below the aortic valve (diam 0.4cm). The shunt is left to right; max velocity recorded is 5.5m/s. No right to left flow identified. The left atrium is mildly increased in size for this body size. The right atrium is normal in size. The right ventricle appears normal. The MPA is mildly dilated. The mitral valve is normal in structure and mobility. No obvious MR. Trace TR. Blood flow through the RVOT is normal in velocity. The PV is not visualized. There is no pleural or pericardial effusion seen.

**CARDIAC CHART**
**AGE**

7 months

**WEIGHT**

5.3lbs

**INTERPRETED BY**

 Maggie Machen Lamy,  
 DVM, DACVIM  
 (Cardiology)

**IMAGING**
**PERFORMED BY**

Andy Carver, DVM

FELINE CARDIAC PARAMETERS	BODY WEIGHT (kg)	HR (BPM)	IVSd (cm) <small>(Moise, Pipers)</small>	LVIDd (cm) <small>(Moise, Pipers)</small>	LWVd (cm) <small>(Moise, Pipers)</small>	FS (%)	EF (%)
NORMAL PARAMETER	-----	150-240	0.35-0.55	<2 (mean 1.5)	3.5-0.55	35-67	80-100
PATIENT	2.4	NM	0.41	1.73	0.46	49	81
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 <small>(m/s)</small>	RVOT VEL <small>(m/s)</small>	E max <small>(m/s)</small>
NORMAL	<1.5	<1.3	<1.2		<1.6	<1.3	<0.9
PATIENT	NM	1.45	1.2		NM	1.3	NM

*\*Note: All measurements based upon multi-modal images and methods. An average value is reported.  
 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**

The cause of the murmur is a perimembranous ventricular septal defect (VSD). The defect is moderate in dimension, with left to right flow. There is evidence of mild left heart volume overload, which while mild is concerning in this juvenile kitten. Additionally, the MPA is mildly dilated, which is likely due to increased flow. This supports a hemodynamically significant shunt. No additional congenital defects are visualized. Consider referral in any congenital case for advanced echocardiography and lifelong management.

VSDs in cats have variable outcomes, and lifelong monitoring is advised. The defect in this case appears hemodynamically significant, leading to increased concern for volume overload over time and potentially progression to clinical signs and development of CHF earlier in life. The prognosis is guarded however, as the rate of progression with subclinical cardiomyopathy is highly variable. Patient will always remain at risk for development of congestive signs, arrhythmias and/or sudden death in the future.

**HOSPITAL NAME**

 Red River Animal  
 Emergency Hospital  
 & Referral Center

**REFERRING VET**

Dr. Carver

**INVOICE**

32213

**DATE**

8/8/23



**PATIENT**

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With only mild heart enlargement in a 7-month-old kitten, no medications are indicated at this time. Reassessment is recommended to monitor rate of progression in left heart volume overload as this recommendation will likely change.

**SPECIES**

Feline

Monitor at home for any associated clinical signs, including respiratory changes or signs of a thrombus.

**BREED**

DSH

Anesthetic risk is considered mild, however judicious IV fluid rates are advised to avoid fluid overload. Additionally, drugs that stimulate heart rate should be avoided unless clinically necessary (glycopyrrolate, atropine). Avoid vasodilators as this may worsen the obstruction. A reasonable protocol includes opioid/benzodiazepine premedication, propofol induction, and isoflurane maintenance. Additionally, steroids should be used with caution lifelong, as with LA dilation there is risk for acute intolerance and fluid retention.

**SEX**

Female

**PLAN**

Consider referral as discussed.

**AGE**

7 months

If declined, reassess in 6-9 months to screen for progressive volume overload.

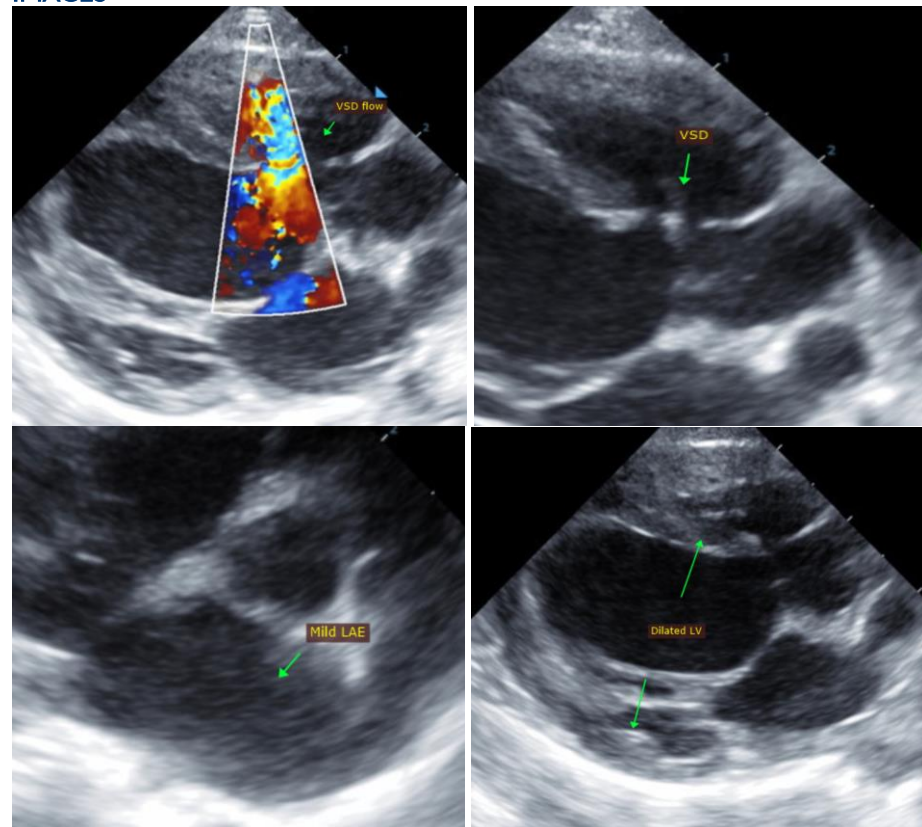
**WEIGHT**

5.3lbs

**IMAGES**

**INTERPRETED BY**

Maggie Machen Lamy,  
DVM, DACVIM  
(Cardiology)



**IMAGING PERFORMED BY**

Andy Carver, DVM

**HOSPITAL NAME**

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**REFERRING VET**

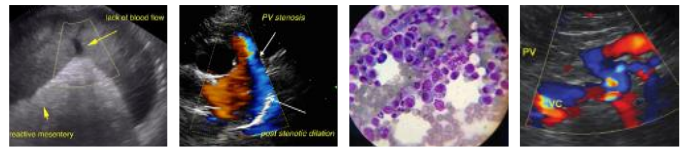
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The information and recommendations provided are based on the images presented by the referring veterinarian. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

**SPECIES**

Feline

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.

**BREED**

DSH

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

**SEX**

Female

**AGE**

7 months

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