



## PATIENT

Prune Beach

## SPECIES

Feline

## BREED

Sphinx

## SEX

Female

## AGE

13 weeks

## WEIGHT

2.5lbs

## INTERPRETED BY

Maggie Machen Lamy,  
DVM, DACVIM  
(Cardiology)

## IMAGING PERFORMED BY

Dr. Karen Ebersole

## HOSPITAL NAME

Scanvet

## REFERRING VET

Dr. Golden

## INVOICE

24653

## DATE

6/8/22

## PRESENTING CLINICAL SIGNS

History: Grade 4/6 heart murmur. Doing well after being sick as a kitten.

## ECHOCARDIOGRAM FINDINGS

2D, m-mode, color flow and doppler imaging is available. The left ventricular wall is normal to slightly decreased in dimension. The LV chamber is mildly dilated. A relatively large perimembranous VSD is seen just below the aortic valve; 0.4cm in diameter. The shunt is left to right, the max velocity is 5.0m/s. No obvious right to left flow identified. The left atrium is mildly increased in size. The right atrium is normal in size. The right ventricle appears normal. The MPA is mildly dilated with mildly elevated outflow velocity consistent with relative pulmonic stenosis. The pulmonic valve is largely normal with trace PI. The mitral valve is normal in structure and mobility. No MR. Blood flow through the LVOT is normal in velocity. There is no pleural or pericardial effusion seen. No additional shunts or abnormalities are visualized.

## 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	1.1	190	0.33	1.7	0.29	48	82
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	1.8	1.7	1.1		1.5	2.2	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 relatively large with high velocity left to right flow. There is evidence of mild left heart volume overload, which is highly concerning in a very young kitten. The MPA is mildly dilated with evidence of volume overload/relative PS. No additional congenital defects are visualized. Given the location of the defect, arrhythmias should be monitored for lifelong through periodic auscultation and ECG monitoring.

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 within the patient's lifespan. 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.

With only mild heart enlargement in such a young cat, use of medications is not yet recommended. This may change in the future should further volume overload be noted.



**PATIENT**

Prune Beach

Anesthetic risk is considered mild at this time, 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). A reasonable protocol includes opioid/benzodiazepine premedication, propofol induction, isoflurane maintenance.

**SPECIES**

Feline

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

**BREED**

Sphinx

**PLAN**

No medications are indicated at this time.

**SEX**

Female

Recommend a recheck echocardiogram in 6 months to screen for progressive dilation and need for medications.

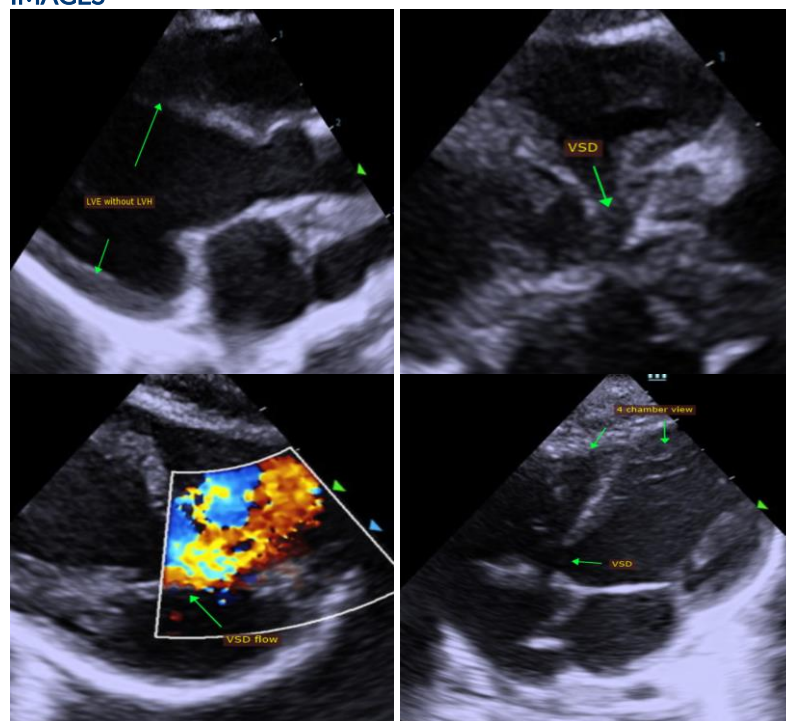
**AGE**

13 weeks

**IMAGES**

**WEIGHT**

2.5lbs



**INTERPRETED BY**

Maggie Machen Lamy,  
DVM, DACVIM  
(Cardiology)

**IMAGING PERFORMED BY**

Dr. Karen Ebersole

**HOSPITAL NAME**

Scanvet

**REFERRING VET**

Dr. Golden

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.

**INVOICE**

24653

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.

**DATE**

6/8/22

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