



**PATIENT**

Lexi Lajoie

**SPECIES**

Canine

**BREED**

Yorkie

**SEX**

Female Spayed

**AGE**

15 years

**WEIGHT**

6.4lbs

**INTERPRETED BY**

Maggie Machen Lamy,  
DVM, DACVIM  
(Cardiology)

**IMAGING PERFORMED BY**

Rachel Runnels, RVT

**HOSPITAL NAME**

SVS Imaging KC

**REFERRING VET**

Dr. Mervin

**INVOICE**

28462

**DATE**

1/19/23

**PRESENTING CLINICAL SIGNS**

History: Restless and moderate respiratory distress. Harsh lung sounds. Large cardiac silhouette on radiographs. Improved on Lasix. Mild renal insufficiency. Did well overnight on Lasix and Vetmedin. Sedated with butorphanol. Is hospitalized and in oxygen cage. Had open mask oxygen for exam.

**RADIOGRAPHIC FINDINGS** \*NOTE: Images submitted for supplemental cardiac information only. Mild cardiomegaly. No obvious evidence of CHF.

**ECHOCARDIOGRAM FINDINGS**

2D, m-mode, color flow and doppler imaging is available. Diffuse thickening of mitral valve leaflets with minimal prolapse into the left atrial lumen. Moderate mitral regurgitation with moderate left atrial dilation. Decreased LV dimension with adequate myocardial function. The LV wall thicknesses are increased, most consistent with pseudohypertrophy. The tricuspid valve appears thickened with mild TR. Velocity consistent with moderate pulmonary hypertension. Mild right atrial and ventricular dilation. The pulmonic and aortic valves are normal in morphology and mobility. Normal aortic and pulmonic outflow velocities with laminar flow. Mild MPA dilation. No aortic and trace pulmonic insufficiency. No pericardial or pleural effusion noted. No obvious cardiac masses.

**CARDIAC CHART**

CANINE CARDIAC PARAMETERS	MR VMAX (m/s)	TR VMAX (m/s)	LA/AO (Boon method)	LA/AO (Heart Base; Swe)	FS (%)	EF (%)	EPSS (cm)
NORMAL PARAMETER	4.5-5.5	<2.7	1.3	<1.6	28-40	40-100	<0.6
PATIENT	4.5	3.5	NM	2.0	55	90	0.3
CANINE CARDIAC PARAMETERS	HR (BPM)	AV VMAX (m/s)	PV MAX (m/s)	BODY WEIGHT (kg)	LA 2D short axis Base view (cm)	LVIDd Avg; 2D and m-mode short axis (cm)	LVIDs Avg; 2D and m-mode short axis (cm)
NORMAL PARAMETER	50-100	0.7-1.7	0.7-1.6	BELOW	BELOW	BELOW	BELOW
PATIENT	114	2.2	1.7	2.9	2.4	2.1	1.0
*Normal chamber parameters expressed as a mean value (SD)				3	1.27 (5.3)	2.46 (2.46)	1.36 (5.5)
<b>BODY WEIGHT DEPENDENT PARAMETERS</b>				5	1.40 (4.5)	2.74 (5.2)	1.60 (4.7)
<i>*Note: All measurements based upon multi-modal images and methods. An average value is reported.</i>				10	1.50 (3.8)	3.27 (3.5)	2.06 (3.1)
				15	1.83 (2.0)	3.71 (2.4)	2.43 (2.1)
				20	2.02 (1.9)	4.14 (2.2)	2.80 (2.0)
				25	2.18 (2.4)	4.48 (2.9)	3.10 (2.5)
				30	2.33 (3.3)	4.83 (3.9)	3.39 (3.4)
				35	2.48 (4.3)	5.17 (5.0)	3.69 (4.5)
				40	2.62 (5.2)	5.48 (6.1)	3.96 (5.4)
				50	2.88 (7.1)	6.07 (8.3)	4.46 (7.4)

**INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS**

Unusual findings. Chronic degenerative valve disease causing moderate mitral and mild tricuspid regurgitation is identified. Moderate left atrial enlargement indicates the risk for spontaneous congestive heart failure may be elevated in the future. Moderate pulmonary hypertension is also identified, which is likely due to a combination of chronic LA pressure elevation and airway disease. The LV has a volume underloaded appearance, which can happen with diuretic therapy

**PATIENT**

Lexi Lajoie

and should correct once the volume is stabilized. That being said, this is highly to see in CHF cases and may suggest a respiratory origin of the symptoms. No additional issues are identified.

**SPECIES**

Canine

The history describes significant respiratory signs. CHF as well as respiratory disease are both possible in this case and it is often difficult to know which to treat in the acute phase. CHF is a radiographic diagnosis that can only be supported by ultrasound. The included chest radiographs show minimal cardiomegaly without obvious CHF; however, the patient improved on diuretic therapy. Consider a Radiologist review of the films for pulmonary review; however, based upon what is seen here CHF is considered less likely. A respiratory issue would also be supported by a sinus arrhythmia (as opposed to sympathetic stimulation with CHF). Regardless, continued low dose Lasix therapy is recommended due to the complicated nature of the case. Pulmonary treatment using a broad-spectrum antibiotic in addition to Sildenafil is also recommended. See medication recommendations below.

**BREED**

Yorkie

**SEX**

Female Spayed

Monitoring of sleeping respiratory rates will be paramount to screen for congestive heart failure at home. Cough suppression to improve QOL can also be considered (hydrocodone, 0.2-0.4mg/kg up to q4-6h PRN) for any residual mechanical cough in the face of normal sleeping respiratory rates. The average survival time of canine patients with active pulmonary edema is 8-9 months on medications, however they generally are able to maintain a good quality of life for that period. Patient will always be at risk for recurrent CHF, development of arrhythmias/LA tear, syncope and/or sudden death in the future.

**AGE**

15 years

**WEIGHT**

6.4lbs

Omega fatty acid supplementation and mild salt restriction may also be of some long-term benefit. Monitor for acute progression of the cough, labored breathing, exercise intolerance or collapse episodes in the future.

**INTERPRETED BY**

Maggie Machen Lamy,  
DVM, DACVIM  
(Cardiology)

**PLAN**

Consider Radiologist review of the films as discussed. Baseline BP recommended. Continue Furosemide 1mg/kg PO q12h. Consider board-spectrum antibiotic therapy depending on current clinical status. Institute Pimobendan 0.3mg/kg PO q12h. Institute Sildenafil 1-2mg/kg PO q12h.

**IMAGING PERFORMED BY**

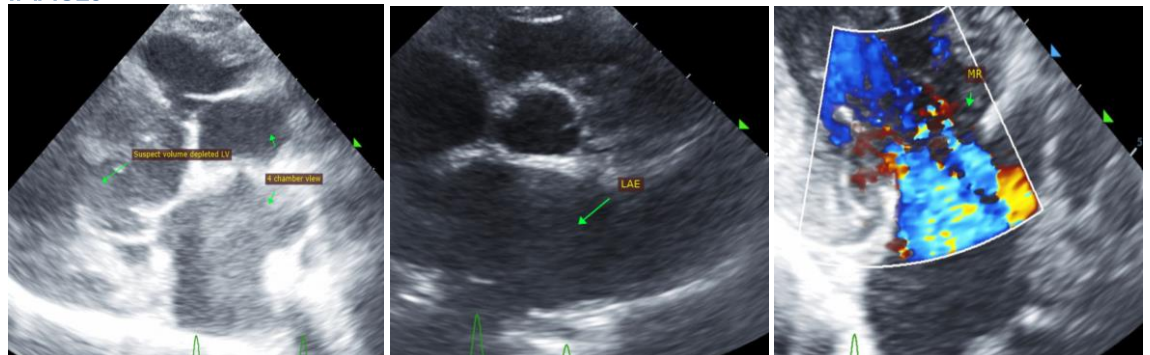
Rachel Runnels, RVT

Monitor SRRs at home. Monitor renal values and BP in 10-14 days, then every 3-4 months while on diuretics. Consider hydrocodone if needed for QOL. If BP is >130mmHg and renal values are normal, institute ACE-I 0.5mg/kg Po q12h.

Recommend conservative monitoring with a recheck echocardiogram in 6 months, sooner if any development of associated clinical signs occurs in the interim.

**HOSPITAL NAME**

SVS Imaging KC

**IMAGES****REFERRING VET**

Dr. Mervin

**INVOICE**

28462

**DATE**

1/19/23

**IMAGING PERFORMED BY**

svsmobileimaging.com 309-737-3070



EDUCATIONAL TELECONSULTATION SERVICES™

1-800-838-4268 info@sonopath.com SonoPath.com

**PATIENT**

Lexi Lajoie

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**

Canine

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.

**BREED**

Yorkie

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

**SEX**

Female Spayed

**AGE**

15 years

**WEIGHT**

6.4lbs

**INTERPRETED BY**

Maggie Machen Lamy,  
DVM, DACVIM  
(Cardiology)

**IMAGING PERFORMED BY**

Rachel Runnels, RVT

**HOSPITAL NAME**

SVS Imaging KC

**REFERRING VET**

Dr. Mervin

**INVOICE**

28462

**DATE**

1/19/23