



## PATIENT

Lila Carvalho

## SPECIES

Feline

## BREED

Domestic Shorthair

## SEX

Spayed female

## AGE

11 years

## WEIGHT

9 lbs

## INTERPRETED BY

Bradley Harris, DVM,  
DACVECC, DACVIM  
(cardiology)

## IMAGING PERFORMED BY

Kerri Becker

## HOSPITAL NAME

All Creatures Great  
and Small Denville

## REFERRING VET

Dr. Silas

## INVOICE

72098

## DATE

3/2/26

## PRESENTING CLINICAL SIGNS

- Wheezy, labor breathing, losing wt, tachycardia

## ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN

### *Urinary System*

The urinary bladder, trigone, and pelvic urethra are unremarkable with normal wall thicknesses and normal tone. The ureters were not visualized, which is a normal finding. There are no uroliths or sediment noted, and anechoic urine is present. The ureteral papillae appear normal. There is no evidence of inflammatory, infiltrative, or neoplastic disease.

The kidneys are normal in size and structure. The cortices are hyperechoic with a loss of corticomedullary definition. The cortex to medulla ratio was normal. No pyelectasia or pelvic dilation is noted. The capsules are mildly irregular. The left kidney measured 3.63 cm and the right kidney measured 3.9 cm.

### *Adrenal Glands*

The adrenal glands are not readily visualized.

### *Spleen*

The spleen is smooth with homogeneous parenchyma and hyperechoic to liver and renal cortical parenchyma. The capsule is without noticeable irregularity or deformation. The splenic vasculature is normal without signs of congestion, spontaneous echo contrast, or thrombosis. No evidence of acute or chronic inflammatory, neoplastic, or infarct are documented. The spleen measured 0.75 cm at the hilus.

### *Liver*

The liver is subjectively normal liver size, contour, and structure. Parenchymal echogenicity is naturally coarse and hypoechoic to the spleen. Vasculature is within normal limits with no evidence of congestion. The gallbladder has thin walls with contains anechoic bile. There is no evidence of intra- or extra-hepatic biliary dilation. The cystic and common bile ducts were normal. No hepatic lymphadenopathy is documented. There is no overt structural evidence of inflammatory, infiltrative or regenerative pathology evident.

### *Gastrointestinal*

The stomach and intestines are free of stasis and peristaltic activity, with no significant dilation noted. There is normal wall thickness and acceptable curvilinear mural detail. The pyloric-duodenal junction and ileocecolic junction are patent, and the colon contains normal shadowing feces. There is no evidence of shadowing obstructive material or overt infiltrative disease noted. No associated abnormal lymphatic activity is documented.



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**Pancreas**

The base and limbs of the pancreas are isoechoic to surrounding omental fat. The pancreatic duct and capsular contour are normal. There is no overt evidence of active inflammatory or neoplastic disease

**Free Abdomen**

There was no lymphadenopathy and no free fluid.

**ULTRASONOGRAPHIC EXAMINATION OF THE HEART**

The left atrium is moderately enlarged. There are no distinct left atrial thrombi/clots or spontaneous echo contrast appreciated. The left ventricle is normal in dimension as well as wall thickness, and no evidence of restriction. Left ventricular systolic function is normal, with adequate contractility based on fractional shortening and systolic left ventricular dimensions. The right atrium and ventricle are subjectively normal in dimension and systolic function. The anterior and posterior mitral and tricuspid valve leaflets presented normal linear structure, extension in systole, and union in diastole with mild mitral regurgitation. There is no evidence of systolic anterior mitral motion documented. The left ventricular outflow tract demonstrated normal laminar flow and subjective structural valvular integrity. The visible aorta is unremarkable. Pulmonary outflow tract assessment revealed normal valve structure, laminar flow, and appropriate diameter and distensibility. There is no evidence of semilunar valve insufficiency or pulmonary hypertension documented. There is no visible pericardial, pleural, or free peritoneal fluid noted.

FELINE CARDIAC PARAMETERS	BODY WEIGHT (kg)	HR (BPM)	IVSd (cm)	LVIDd (cm)	LVWd (cm)	FS (%)	EF (%)
NORMAL PARAMETER	-----	150-240	0.3-0.6	1.0-2.1	0.25-0.6	35-67	80-100
PATIENT	4.09 kg	280	0.55	1.74	0.53	47	NM
FELINE CARDIAC PARAMETERS	LA/AO (M-mode)	LA/AO HEART BASE (Sisson)	LAD LA MAX 4 Chamber		LVOT VEL. (m/s)	RVOT VEL. (m/s)	IVRT (m/)
NORMAL PARAMETER	<1.5	1.6	0.7-1.7		<1.6	<1.3	40-60
PATIENT	2.72	2.13	2.18		1.3	0.8	NM
Adapted from June Boon, Veterinary Echocardiography, 1998 Sisson D et al. JVIM 1991; 5: 232, Jacobs et al. Am J Vet Res 1985; 46:1705							

**ULTRASONOGRAPHIC FINDINGS**

The kidneys are relatively normal in size and structure, and cortex:medulla ratio (cortex 1/3 of medulla) is essentially maintained. There is age-related loss of the normal smooth capsular contour and C/M



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junction definition. The cortices are largely uniform in texture with mild hyperechogenicity expected for this patient's age. There is no evidence of pelvic dilation present.

These findings identify left atrial dilation in the absence of any left ventricular hypertrophy or outflow tract obstruction. In the absence of any intrinsic disease (hyperthyroidism or severe anemia) or iatrogenic factors (steroid or fluid administration), these findings would be most consistent with the myocardial form of restrictive cardiomyopathy (RCM, formerly UCM).

**INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS**

A urinalysis and urine culture via cystocentesis are recommended to evaluate the urinary tract changes for potential urinary tract infection.

No definite underlying cause of the weight loss is identified on this study.

Therapy with Vetmedin (1.25mg BID) is reasonable at this time. Enalapril/benazepril (1.25mg q24) can also be considered, pending BP and kidney function. If an ACEi is started, a recheck chemistry panel and blood pressure should be performed 1-2 weeks after starting therapy. Additionally, Plavix/clopidogrel should be initiated as an anti-thrombotic (1/4 of a 75 mg tablet, or 18.75 mg PO q 24 h). Due to the bitter taste of this medication, it may be best to place it in an empty gelatin capsule or use products such as a Pill Pocket. Should fluid administration or corticosteroids be required, concurrent administration of furosemide (3.125mg q24) is reasonable. Barring any setbacks or complications, a repeat echocardiogram, thoracic radiographs, blood pressure, and chemistry panel are indicated in another 3-6 months.

Anesthesia considerations:

While there is no CHF present, there is likely an increased anesthetic risk which must be considered prior to any anesthetic procedure. If anesthesia is necessary, then alpha-2 agonists, ketamine, high dose acepromazine, and Telazol should be avoided. If an ACE inhibitor (enalapril, benazepril) or spironolactone is being given, it should not be administered on the morning of general anesthesia. Other cardiac medications should be administered per the normal dosing schedule. Fluid therapy during anesthesia should be considered at a reduced rate (e.g., 2-5 ml/kg/hour) if possible (i.e., if not hypotensive). A shorter anesthetic duration will reduce the risk of complications. Pre-oxygenation is advised. Premedication with an opioid (i.e., butorphanol, hydromorphone, oxymorphone) with or without a benzodiazepine is generally the safest protocol. An induction agent such as Propofol, alfaxalone, or diazepam/etomidate can be used to effect. Maintenance of anesthesia with isoflurane or sevoflurane is reasonable.

Diet:

No special considerations are necessary. Any high-quality food from Hills, Royal Canin, Science Diet, Eukanuba, Iams, or Purina is reasonable.

Activity:

Avoid strenuous activity.



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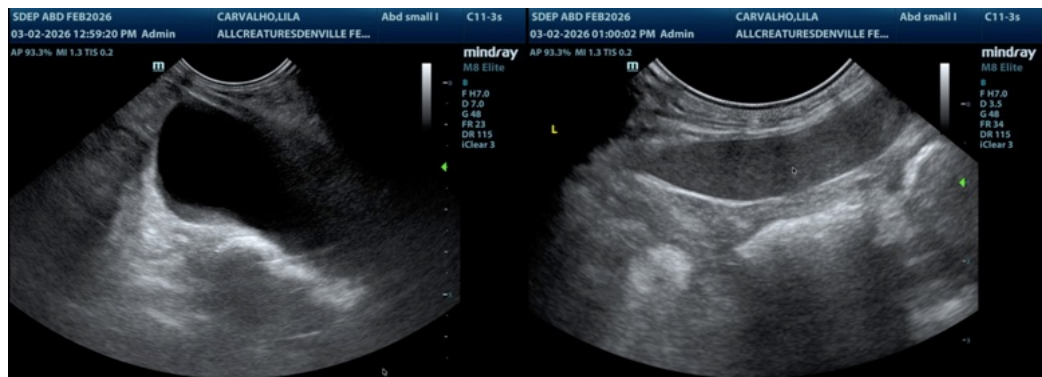
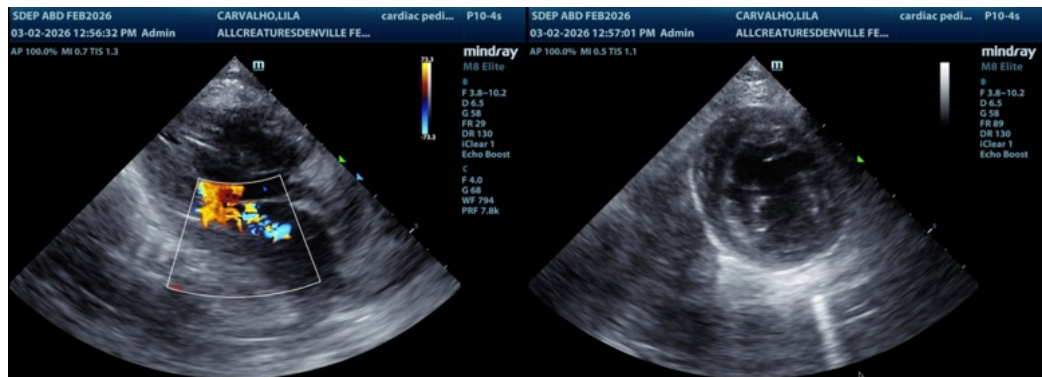
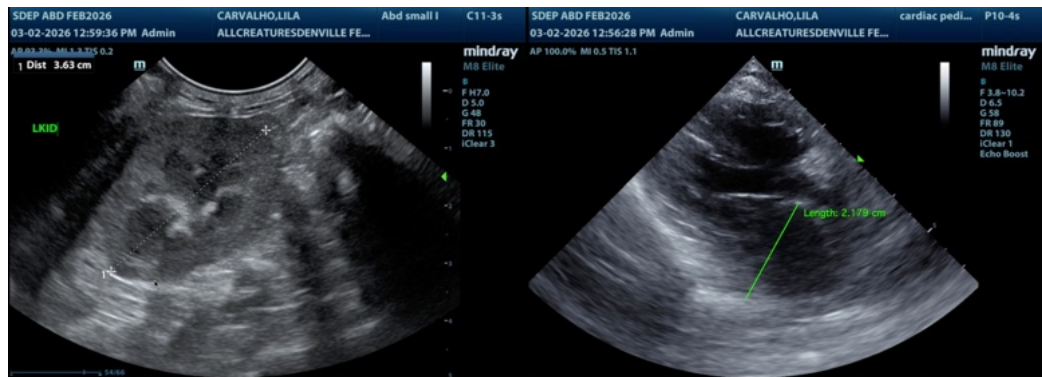
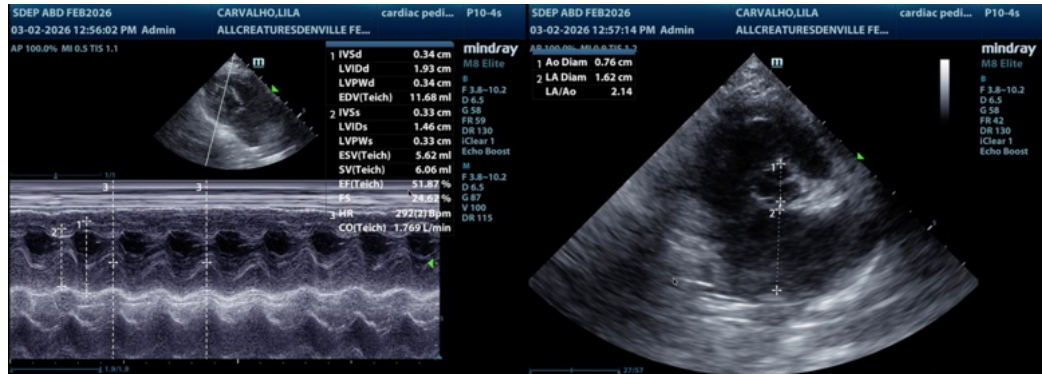
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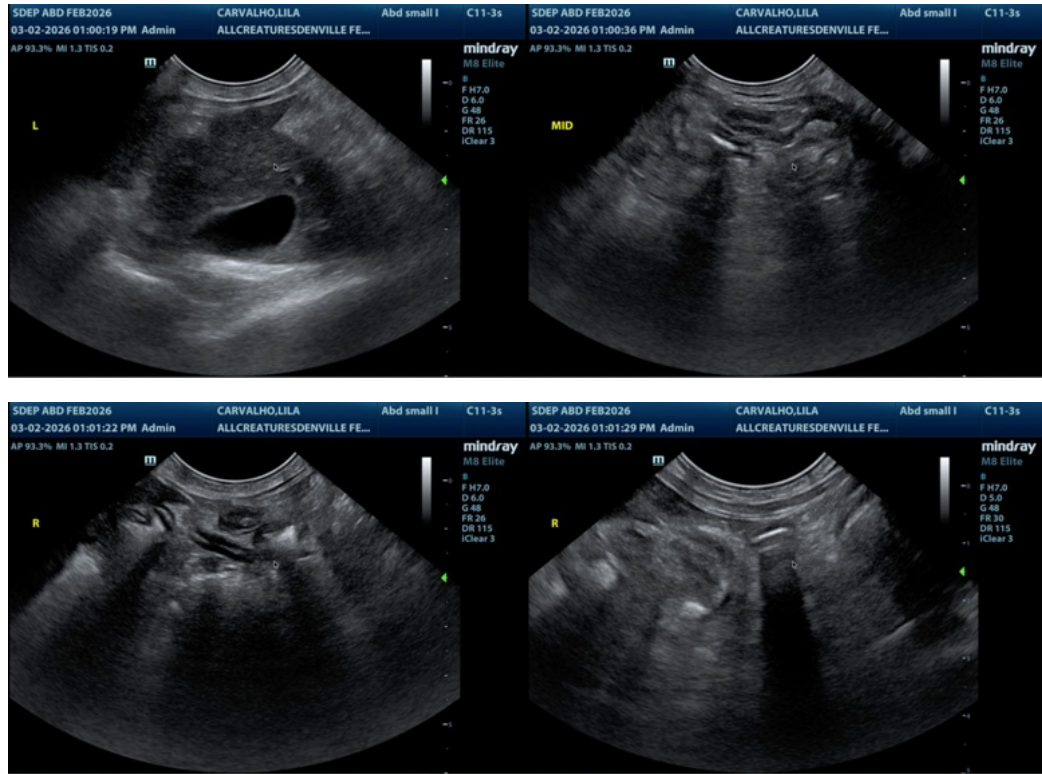
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The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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.

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**ULTRASONOGRAPHIC EXAMINATION OF THE HEART**

**ULTRASONOGRAPHIC FINDINGS**

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