



## PATIENT

Milo Veltre

## SPECIES

Feline

## BREED

DSH

## SEX

M/N

## AGE

18 years

## WEIGHT

N/A

## INTERPRETED BY

R. McKenzie Daniel,  
DVM, DABVP  
(Canine and Feline)

## IMAGING PERFORMED BY

Diane McFadden

## HOSPITAL NAME

Mt. Olive VH

## REFERRING VET

Dr. Logan

## INVOICE

16038

## DATE

2/1/23

## PRESENTING CLINICAL SIGNS

PU/PD, focal 2/6 murmur, now has arrhythmia.

Abnormal PE/Chem/CBC/UA Results: ALT 120, BUN 86, creat 3.0, K 3.2, amylase 1674, PSL 78, lymphocytes 425 UA: protein trace, USPG 1.017

## ULTRASONOGRAPHIC EXAMINATION OF THE HEART & ABDOMEN

FELINE CARDIAC PARAMETERS	BODY WEIGHT (kg)	HR (BPM)	IVSd (cm)	LVIDd (cm)	LVWd (cm)	FS (%)	EF (%)
<b>NORMAL PARAMETER</b>	-----	150-240	0.3-0.6	1.0-2.1	0.25-0.6	35-67	80-100
<b>PATIENT</b>		148	0.7	1.3	0.6	48	83
FELINE CARDIAC PARAMETERS	LA/AO (Boon)	LA/AO HEART BASE (Sisson)	LA 2D 4-chamber long axis AS to FW (Sisson) (cm)		LVOT VEL. (m/s)	RVOT VEL. (m/s)	IVRT (m/)
<b>NORMAL PARAMETER</b>	<1.5	0.88-1.79	0.7-1.7		<1.6	<1.3	40-60
<b>PATIENT</b>	1.5	1.5	1.9			0.82	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							

## Cardiac Presentation

The left ventricular wall exhibited mild myocardial remodeling with regions of minor myocardial asymmetry. Mildly thickened IVS with borderline thickened LV free wall was noted. LV systolic function is adequate. LV and RV both exhibited normal volume. The left atrium was mildly enlarged and slightly bulbous in appearance. No evidence of spontaneous contrast or LA thrombus. The right atrium is normal in size. The mitral valve was mildly thickened with no overt MR on Doppler. No obvious TR was noted on Doppler. Mildly turbulent to dynamic systolic LV outflow with tract aortic valve insufficiency was present. Normal laminar RV outflow was noted on Doppler with normal measured RVOT velocity. No evidence of pericardial or pleural effusion was noted. No overt cardiac tumors were noted. Intermittent arrhythmia was noted.

## Urinary System

The urinary bladder, trigone, cystourethral junction, and visible pelvic urethra to a depth of 2.0 cm exhibited normal thickness and tone. Anechoic urine was present in the lumen with no uroliths or sediment. The ureteral papillae were normal. The ureters were not visible which is normal. No evidence of inflammatory or neoplastic changes was noted.

The area of the aortic trifurcation was free of pathology.



<b>PATIENT</b>	A normal 1:3 cortex / medulla ratio was maintained in the kidneys. The medulla and cortices were uniform in texture with some increased echogenicity and moderate loss of corticomedullary symmetry and definition expected for the age of the patient. No evidence of pelvic dilation was present. The left kidney measured 4.6 cm in length. The right kidney exhibited borderline subnormal size measuring 3.2 cm in length.
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**Adrenal Glands**

The left adrenal gland was uniform in size and contour with a uniformly hypoechoic parenchyma. The left adrenal gland measured 0.54 cm width. The right adrenal gland was uniform in size and contour with a uniformly hypoechoic parenchyma. The right adrenal gland measured 0.43 cm width.

**Spleen**

The spleen was normal in size. A solitary, well-demarcated, hyperechoic splenic nodule was present measuring approximately 0.89 cm in diameter. The nodule was non-disruptive.

**Liver/Gallbladder**

The liver was subjectively normal in size, structure, and contour. Mild increased hepatic parenchyma echogenicity was present with a moderate coarse echotexture and intermittent, discrete, non-disruptive, nonhomogeneous, mildly cystic hepatic nodules. Subjective mild to benign parenchymal remodeling was noted. The hepatic and portal vasculature were normal in appearance without signs of congestion. The gallbladder was non-distended in size with thin walls and primarily anechoic luminal content. The cystic and common bile ducts were normal.

**Gastrointestinal**

The stomach presented intact wall layering with a normal wall layer ratio. The lumen of the stomach was empty with no signs of ileus, obstruction, or foreign material.

The small intestine presented intact wall layering with 1:3 muscularis/mucosa ratio. The lumen of the small intestine was empty with no signs of ileus, obstruction, or foreign material.

Normal visible colon wall layers were present with apparent formed feces in lumen.

**Pancreas**

The pancreas was normal in size and contour with isoechoic to heterogeneous parenchyma compared to adjacent omentum. No signs of active inflammation or neoplasia. A solitary, thinly-walled cyst was present in the area of the proximal left pancreas limb to the pancreas base measuring 1.9 cm diameter. The cyst contained anechoic fluid. No evidence of regional inflammation was noted.

**Free Abdomen**

No overt lymphadenopathy or peritoneal effusion was present.

**ULTRASONOGRAPHIC FINDINGS**

- Borderline to mild thickened LV with myocardial remodeling
- Mild LA enlargement



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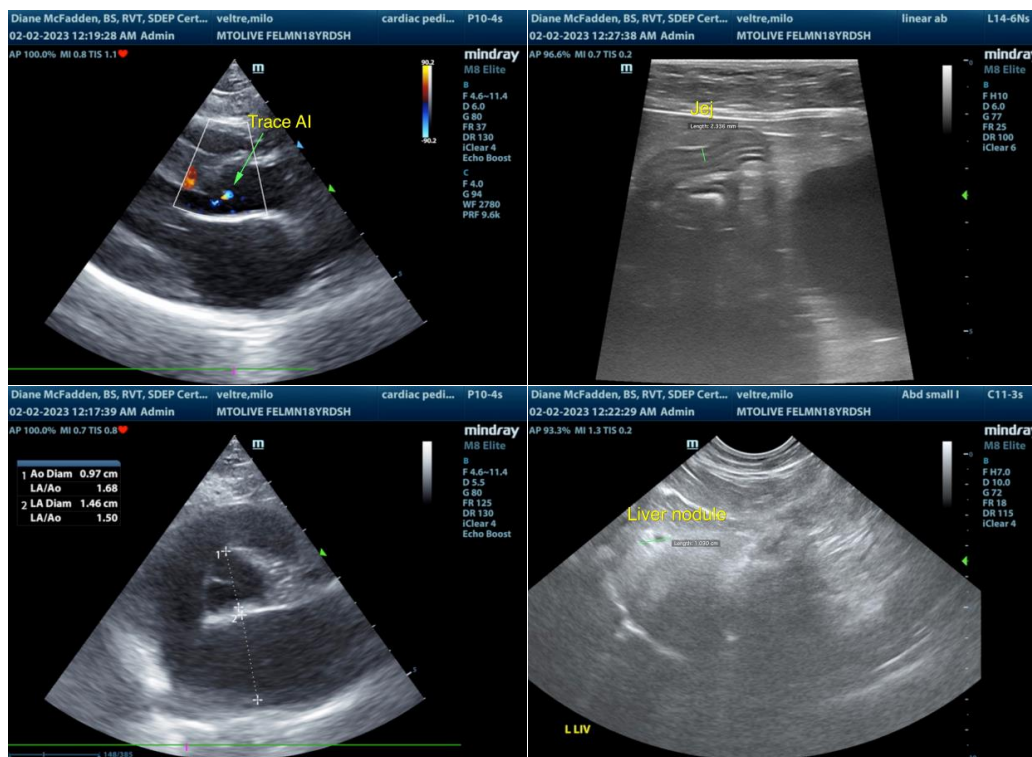
2/1/23

- Tract aortic insufficiency
- Intermittent arrhythmia
- Moderate chronic renal changes with borderline subnormal right kidney size
- Pancreatic cyst - benign
- Subjective benign hepatosplenic nodules

**INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS**

The LV presentation is suggestive of borderline HCM criteria, which would be a rule-out diagnosis, assuming the patient is euthyroid and normotensive. Overall, the heart appears to be compensated although the mild LA enlargement indicates that the risk of future complications is mildly elevated. No evidence of significant valvular insufficiencies, indicating likely physiologic flow murmur. No overt indication for cardiac medications at this stage, yet serial sonographic monitoring is recommended for further prognosis. ECG, if not done, is recommended for further clarification of the arrhythmia. Recheck echocardiogram is suggested in 6 months, sooner if clinical signs arise.

Further renal staging to include urine C/S and protein: creatinine ratio on sterile urine sample may be considered. Assessment and monitoring of systemic BP, given chronic renal disease presentation, is suggested. CRD therapy is recommended, given the degree of azotemia with concurrent decreased urine specific gravity.





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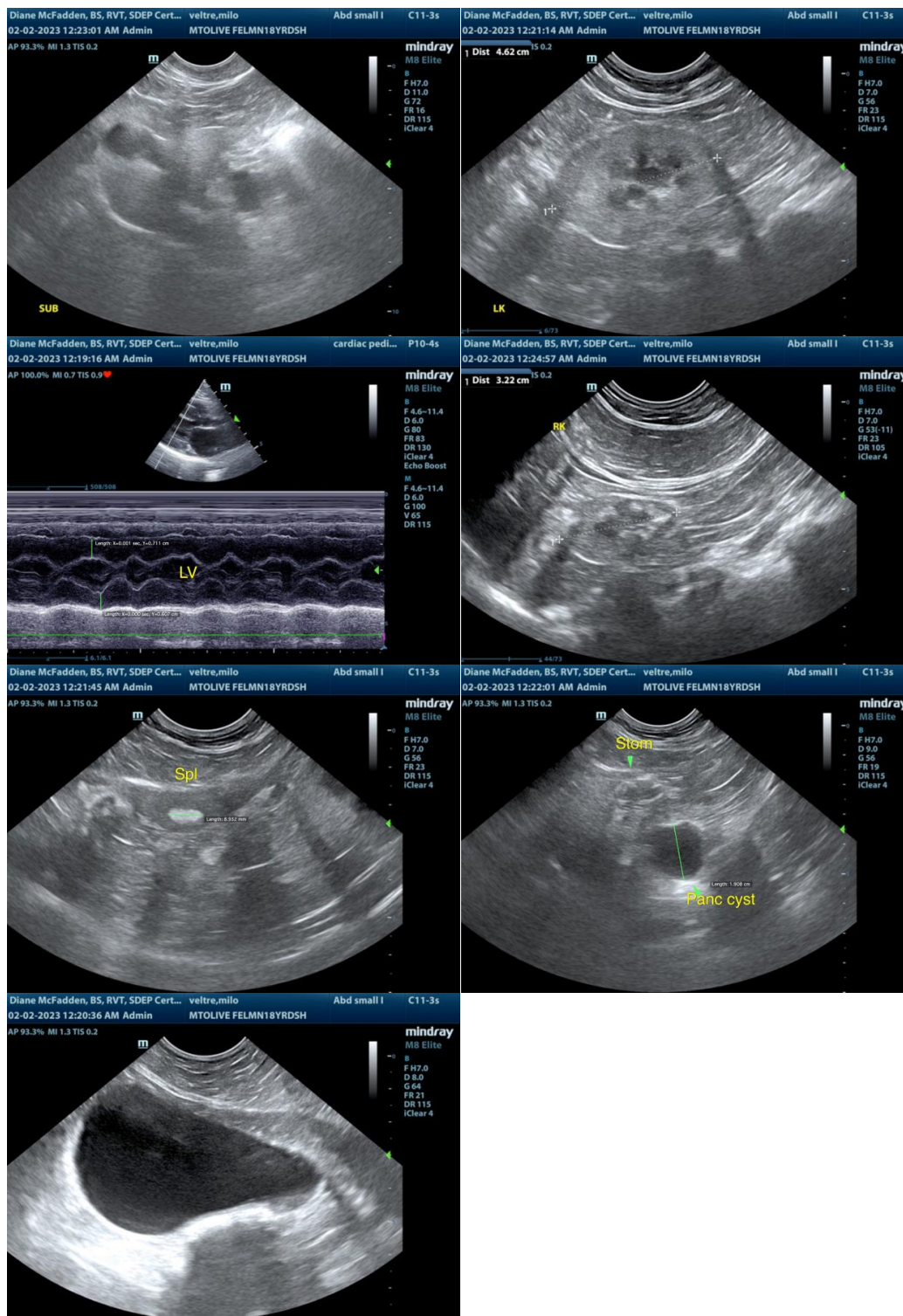
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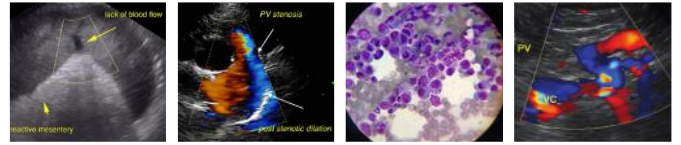
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The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.



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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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