



PATIENT PRESENTING CLINICAL SIGNS

Elliot Puzo History: Mild cardiomegaly on chest radiographs on 4/20/22.
Abnormal PE/Chem/CBC/UA Results: LT 127. USG 1.053 on 4/21/22.

SPECIES ULTRASONOGRAPHIC EXAMINATION OF THE HEART & ABDOMEN

Canine

BREED

Chihuahua

SEX

Neutered Male

AGE

6 Years

WEIGHT

6.4 Pounds

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	<1.3	28-40	40-100	<0.6
PATIENT	4.8	--	NM	1.25	38	71.1	0.15
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				
PATIENT	112	1.2	1.0	--	2.1	2.1	--

INTERPRETED BY

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

IMAGING PERFORMED BY

Kelly Vazquez

HOSPITAL NAME

Ramapo Valley AH

REFERRING VET

Dr. Gary Duhr

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DATE

5/3/22

Cardiac Presentation

The echocardiogram in this patient demonstrated normal **left atrial** size based on 3 separate methods of LA evaluation. The cranial and caudal **mitral** valve leaflets presented normal linear structure, extension in systole, and union in diastole with normal kinesis. Mild eccentric MR present on doppler. The **left ventricle** presented thicknesses with linear contour and was not dilated nor restricted. The **myocardium** presented normal echogenicity without subjective evidence of significant fibrotic or ischemic disease. **Contractility** of the ventricular walls was adequate and in normal range for this patient evidenced by the fractional shortening measurement and subjective evaluation of the different regions of the myocardium. The **left ventricular outflow** tract demonstrated normal laminar flow and subjective structural integrity. The **right atrium** and auricle revealed normal size, structure and content. No evidence of masses was noted. **Tricuspid** valvular assessment demonstrated adequate linear morphology and kinesis. The **right ventricle** was of normal size (1/3 diameter of LV), chordae structure, myocardial echogenicity and thickness. **Pulmonary outflow** tract assessment revealed normal valve structure, laminar flow, and diameter (approx.1:1 pa/ao ratio). No visible **pericardial** or free pleura fluid was noted. The cranial **mediastinum and pericardial and extra-cardiac regions** were free of masses in the visible window.

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 were noted.



PATIENT	The residual prostate was symmetrically normal in size with uniform parenchyma and slight coarse echotexture measuring 0.89 cm in diameter.
Elliot Puzo	
SPECIES	Normal size and margination was present in the kidneys. A normal 1:3 cortex / medulla ratio and normal corticomedullary definition were maintained. The echogenicity of the cortex was similar to or slightly less than normal liver parenchyma while the medulla echogenicity was hypoechoic to the cortex with no evidence of pelvic dilation. The left kidney measured 3.3 cm in length. The right kidney measured 2.6 cm in length.
Canine	
BREED	Adrenal Glands
Chihuahua	The left adrenal gland was uniform in size and contour with a uniformly hypoechoic parenchyma. The left adrenal gland measured 0.41 cm width at the caudal pole and 0.35 cm width at the cranial pole. The right adrenal gland was uniform in size and contour with a uniformly hypoechoic parenchyma. The right adrenal gland measured 0.32 cm width at the caudal pole and 0.32 cm width at the cranial pole.
SEX	Spleen
Neutered Male	The spleen exhibited a finely textured and homogenous parenchyma which was hyperechoic to the liver and renal cortical parenchyma. The capsule was smooth and regular without apparent expansion. The splenic vasculature at the hilus was normal in volume with no evidence of congestion or thrombosis. Acute to chronic inflammatory, neoplastic, or benign parenchyma changes were not noted.
AGE	Liver
6 Years	The liver was subjectively normal in size, structure, and contour. The liver parenchyma was uniform and hypoechoic to the spleen with a mild coarse echotexture. 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.
WEIGHT	Gastrointestinal
6.4 Pounds	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.
INTERPRETED BY	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.
R. McKenzie Daniel, DVM, DABVP (Canine and Feline)	Normal visible colon wall layers were present with apparent formed feces in lumen.
IMAGING PERFORMED BY	Pancreas
Kelly Vazquez	The parenchyma of the left limb, body and right limb of the pancreas presented isoechoic to the adjacent omental fat. A normal curvilinear capsule contour of the pancreas was present. The visible pancreatic duct was normal. No signs of active inflammation or neoplastic disease was evident.
HOSPITAL NAME	Free Abdomen
Ramapo Valley AH	No overt lymphadenopathy or peritoneal effusion was present.
REFERRING VET	ULTRASONOGRAPHIC FINDINGS
Dr. Gary Duhr	<ul style="list-style-type: none"> • Overtly normal cardiac structure and function • Mild eccentric MR
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PATIENT • Low-grade hepatopathy

Elliot Puzo

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

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**IMAGING
PERFORMED BY**

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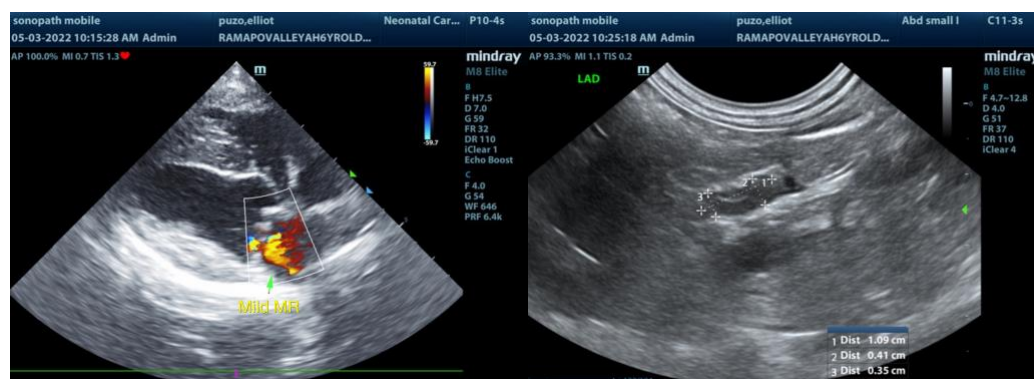
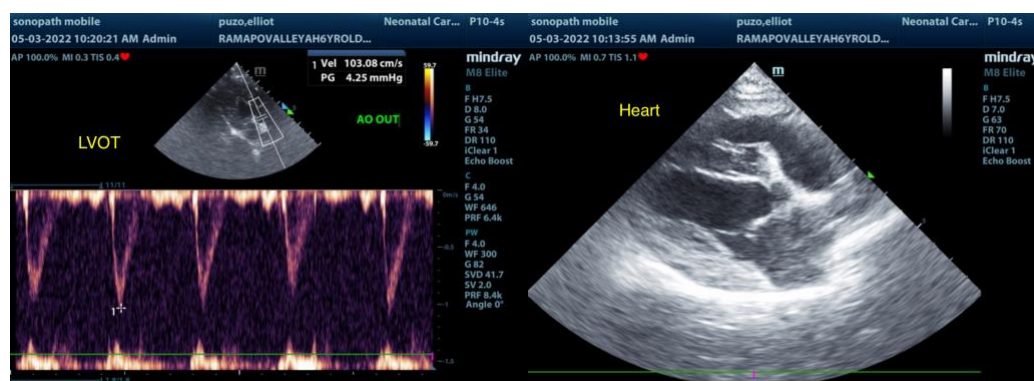
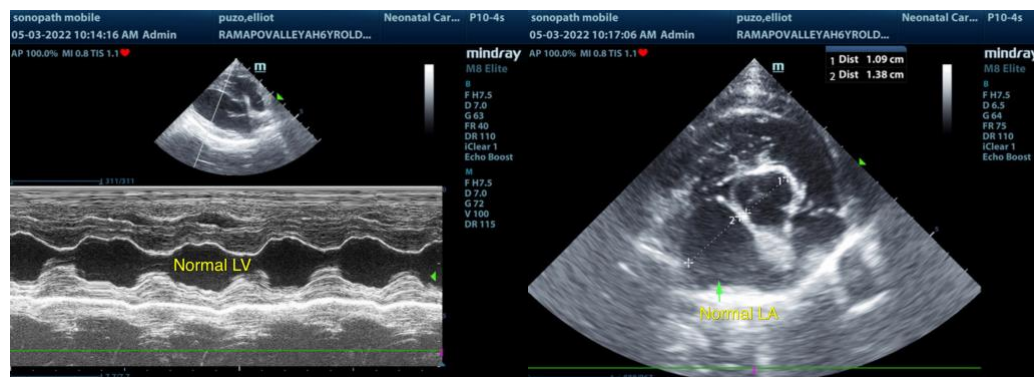
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No evidence of significant structural or functional cardiomyopathy. If a low-grade murmur is present in this patient, the cause of the murmur secondary to mild mitral valve insufficiency. This insufficiency is not considered hemodynamically significant at this time given the lack of left atrium enlargement. Potentially this could indicate early chronic mitral valve changes. Conservative monitoring for a developing or low-grade murmur is recommended. Recheck sonogram is suggested in 12 months or sooner if progressive murmur is noted. No indication for cardiac medications.

The mildly elevated ALT may suggest low-grade inflammatory hepatopathy. No evidence of a portosystemic shunt. Hepatosupportive medications +/- ultrasound guided hepatic FNA, for screening cytology, primarily to assess for evidence of inflammatory cells could be considered if persistent/progressive ALT elevation.





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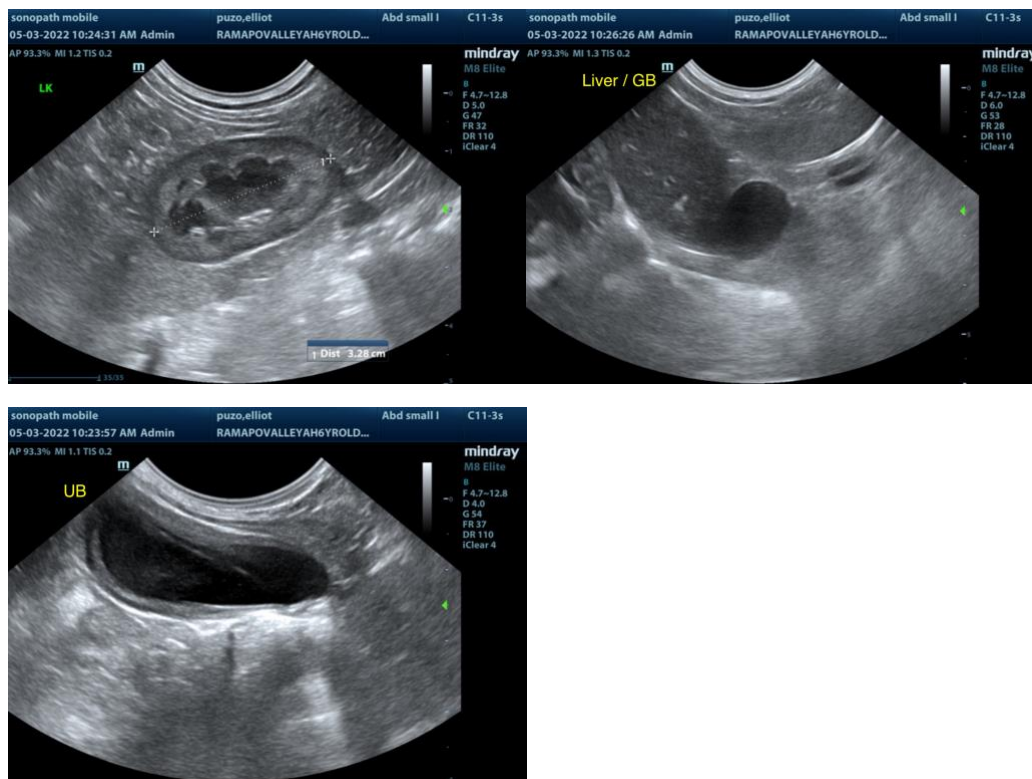
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The information and recommendations provided are based on the images presented by the referring veterinarian. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

Thank you for this referral. If the clinical or image interpretation does not parallel your findings or if it can be of any further assistance please contact me.

R. McKenzie Daniel, DVM, DABVP (Canine / Feline Practice)
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