



**PATIENT**

Max Medina

**SPECIES**

Canine

**BREED**

Miniature Pinscher

**SEX**

Neutered Male

**AGE**

12 Years

**WEIGHT**

10.1 Pounds

**INTERPRETED BY**

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

**IMAGING PERFORMED BY**

Kelly Vazquez

**HOSPITAL NAME**

Animal Paradise  
Hospital

**REFERRING VET**

Dr. ElShafie

**INVOICE**

47133

**DATE**

5/4/23

**PRESENTING CLINICAL SIGNS**

Patient presents after radiographs showed: "patchy interstitial and bronchial markings representing bronchitis, early non-cardiogenic pulmonary edema could also be considered, cardiogenic pulmonary edema is possible, but less likely, suspect mitral valve insufficiency, small bowel and colon appearance either aerophagia vs. enterocolitis." Current meds: Theophylline, Doxycycline, and Lasix.

Abnormal PE/Chem/CBC/UA Results: Globulin 5.0.

**ULTRASONOGRAPHIC EXAMINATION OF THE HEART & ABDOMEN**

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			NM	1.3	45	79	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	BELOW	BELOW	BELOW	BELOW
PATIENT	138	1.6	1.3		2.1	2.1	

**Cardiac Presentation**

The echocardiogram in this patient demonstrated normal **left atrial** size based on 3 different LA measurement methods. Chamber volumes and echogenicity were normal. The cranial and caudal **mitral** valve leaflets presented mild to moderate thickening (anterior > posterior) consistent with endocardiosis. No evidence of valvular prolapse or chordae tendineae rupture. Doppler indicated mild eccentric insufficiency. 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 or chamber overload. **Tricuspid** valvular assessment demonstrated adequate linear morphology. The **right ventricle** was of normal size (1/3 diameter of LV), chordae structure, myocardial echogenicity and thickness. **Pulmonic** 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. No echographically detectable evidence of infiltrative disease was visible. The cranial **mediastinum** and **pericardial** 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



<b>PATIENT</b>	sediment. The ureteral papillae were normal. The ureters were not visible which is normal. No evidence of inflammatory or neoplastic changes were noted.
Max Medina	
<b>SPECIES</b>	The residual prostate was symmetrically normal in size with uniform parenchyma and slight coarse echotexture.
Canine	The area of the aortic trifurcation was free of pathology.
<b>BREED</b>	Normal size and margination was present in the kidneys. A normal 1:3 cortex / medulla ratio was maintained. The medulla and cortices were uniform in texture with some increased echogenicity and loss of corticomedullary symmetry and definition expected for the age of the patient. No evidence of pelvic dilation was present. The left kidney measured 3.6 cm. The right kidney measured 3.3 cm.
Miniature Pinscher	
<b>SEX</b>	<b>Adrenal Glands</b>
Neutered Male	The left adrenal gland was uniform in size and contour with a uniformly hypoechoic parenchyma. The left adrenal gland measured 1.7 cm length x 0.52 cm at the caudal pole.
<b>AGE</b>	The right adrenal gland was not definitively visualized. No overt pathology noted in the area of the right adrenal gland.
12 Years	
<b>WEIGHT</b>	<b>Spleen</b>
10.1 Pounds	The spleen exhibited primarily finely textured parenchyma which was hyperechoic to the liver and renal cortical parenchyma. Mild generalized parenchyma heterogeneity was present without evidence of nodular changes. 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. The parenchymal heterogeneity is likely consistent with benign changes such as extramedullary hematopoiesis or age related remodeling with minor potential for inflammatory or neoplastic disease.
<b>INTERPRETED BY</b>	<b>Liver</b>
R. McKenzie Daniel, DVM, DABVP (Canine and Feline)	The liver was subjectively normal in size, structure, and contour. The liver parenchyma was mildly nonuniform and hypoechoic to the spleen with a moderate coarse echotexture and subjective mild to benign parenchymal remodeling. The hepatic and portal vasculature were normal in appearance without signs of congestion. The gallbladder was non distended in size with minor, echogenic, nonmineralized biliary sludge. The cystic duct and common bile ducts were normal without evidence of dilation.
<b>IMAGING PERFORMED BY</b>	<b>Gastrointestinal</b>
Kelly Vazquez	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.
<b>HOSPITAL NAME</b>	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.
Animal Paradise Hospital	Normal visible colon wall layers were present with apparent formed feces in lumen.
<b>REFERRING VET</b>	<b>Pancreas</b>
Dr. ElShafie	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.
<b>INVOICE</b>	
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#### ULTRASONOGRAPHIC FINDINGS

- Compensated MR (ACVIM B1)



**PATIENT**

Max Medina

- Mild age related kidneys
- Minor hepatic parenchymal remodeling – benign.
- Overtly normal gastrointestinal tract.

**SPECIES**

Canine

**INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS**

**BREED**

Miniature Pinscher

No evidence of significant structural or functional cardiomyopathy, including no evidence of left or right heart chamber enlargement, clinical pulmonary hypertension, or LV systolic dysfunction as cardiac contributing factors to any potential respiratory abnormalities. The lack of left atrial enlargement indicates that the current and future risk of complication secondary to MR is low. No indication for cardiac medications, including no indication for diuretic therapy. Primary lower airway disease or non-cardiogenic pulmonary edema possible. Sonographic monitoring of the heart recommended. Recheck echocardiogram suggested in 6-12 months, sooner if clinical signs consistent with cardiac disease arise.

**SEX**

Neutered Male

Largely mild geriatric abdomen without evidence of significant visceral pathology. As needed gastrointestinal support suggested if gastrointestinal signs are present.

**AGE**

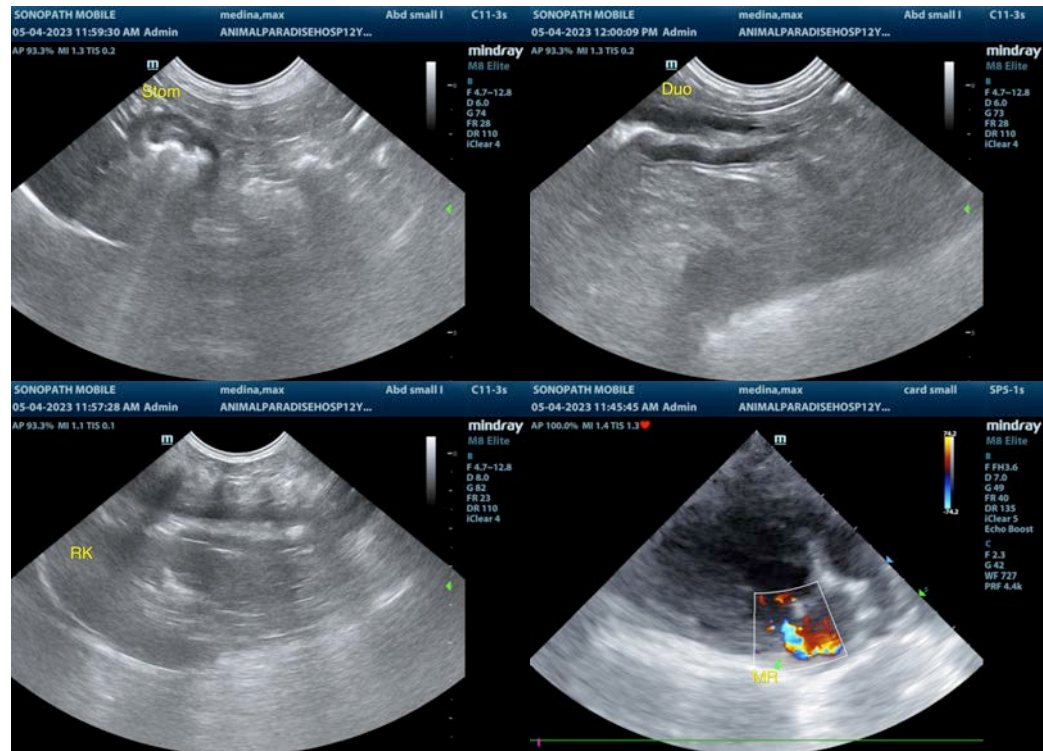
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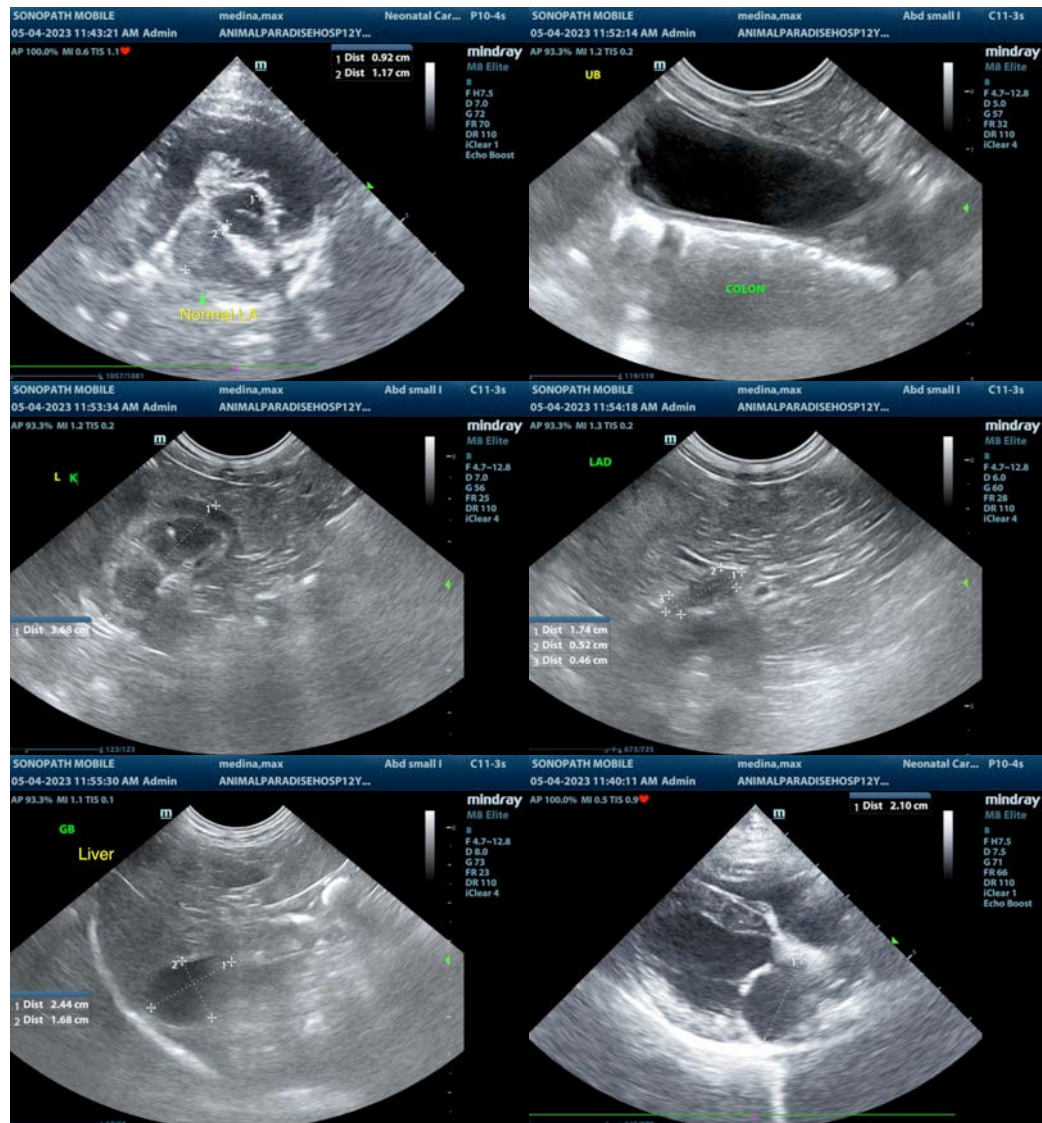
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The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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.

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

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