

**PATIENT PRESENTING CLINICAL SIGNS**

Jiji Presnell

**SPECIES**

Feline

**BREED**

DSH

**SEX**

Neutered Male

**AGE**

2 Years

**WEIGHT**

5.4 Pounds

P is here for an exam. O notes P is very lethargic and isn't eating. No c/s/v/d. u/d wnl. Diet- anything he will eat like turkey or chicken Subjective BAR, Euhydrated NORMAL CONDITION MM: Pink, CRT: <2sec NORMAL CONDITION Oral-Nose-Throat: NORMAL CONDITION Eyes: NORMAL CONDITION Comments: Corneas clear, no scleritis or ocular discharge Ears: NORMAL CONDITION Comments: No erythema or abnormal exudate observed Cardiovascular/Respiratory: ABNORMAL CONDITION Comments: Faint parasternal murmur, very focal Abdominal/Genitourinary: ABNORMAL CONDITION Comments: Palpable thickened GI, r/o feces in colon Musculoskeletal: ABNORMAL CONDITION Comments: Decreased generalized MM Integumentary: NORMAL CONDITION Comments: Clean haircoat, skin appears normal Neurological: NORMAL CONDITION Comments: Appropriate mentation, CNs intact, CPs norm. Limited exam Lymph Nodes: NORMAL CONDITION Comments: Lymph nodes palpate small, soft, and symmetrical. Conveyed concern for wt loss and continued inappetence. Rec imaging and BW. O consents Ultrasound - LIVER APPEARS ABNORMAL - Hyperechoic, heterogenous to nodular appearance Comments: Hepatopathy - open Chronic hyporexia and wt loss Faint heart murmur/subjective cardiomegaly - r/o cardiomyopathy Comments: Needs Full ultrasound and internist assessment - recommend set up U/S and assessment with Dr. Nicastro (traveling ultrasonographer/internist) - will call to set up Starting denamarin Gave cerenia/fluids and I/D TGH. kwm  
Abnormal PE/Chem/CBC/UA Results: CBC - mild anemia Chemistry - Elevated ALT (407/ALP 126), mild hypokalemia, hypernatremia Rads - stool in colon, subjective possible splenomegaly, subjective cardiomegaly

**ULTRASONOGRAPHIC EXAMINATION OF THE HEART & ABDOMEN**

**INTERPRETED BY**

Eric Lindquist, DMV

DABVP, Cert. IVUSS

**IMAGING PERFORMED BY**

Andrea Nicastro, DVM,  
Diplomate ACVIM  
(Small Animal Internal  
Medicine)

**HOSPITAL NAME**

Southside AH

**REFERRING VET**

Dr. Kevin Moser

**INVOICE**

39884

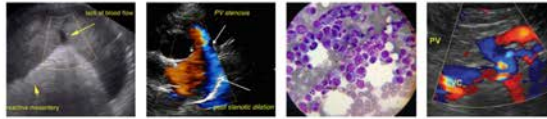
**DATE**

7/27/22

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		NM	0.5	1.3	0.5	45	
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/)
NORMAL PARAMETER	<1.5	0.88-1.79	0.7-1.7		<1.6	<1.3	40-60
PATIENT	1.15	1.3	1.2		1.2	0.9	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 echocardiogram in this patient demonstrated normal **left atrial** size based on 3 separate LA measurements. Trivial mitral insufficiency noted in this patient, not clinically significant. The **left ventricle** presented normal 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 and angles of the myocardium. The **left ventricular outflow** tract demonstrated normal laminar



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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 and kinetics. 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 or extra cardiac pathology in the visible planes. The cranial **mediastinum and pericardial regions** were free of masses in the visible window.

**Urinary System**

The **urinary bladder** presented sand accumulation, a grouping of which measured approximately 1.0 cm.

The **kidneys** presented normal size and contour. Corticomedullary mineralization noted. The right kidney measured 4.12 cm. The left kidney measured 4.37 cm.

**Adrenal Glands**

Both **adrenal glands** were visualized and recognized as having normal shape, size, position and echogenicity for this breed. The phrenic vasculature, glandular echogenicity and detail were unremarkable. Capsule, cortex, and medullary definition were normal for this age patient. The right adrenal gland measured 0.32 cm. The left adrenal gland measured 0.35 cm.

**Spleen**

The **spleen** presented a smooth homogeneous parenchyma hyperechoic to liver and renal cortical parenchyma. The capsule was smooth without noticeable expansion or deviation from within the spleen or adjacent pathology. The splenic vasculature demonstrated normal volume without signs of congestion or thrombosis. No sonographic evidence of acute or chronic inflammatory, neoplastic, or infarctual changes were noted.

**Liver**

The **liver** revealed mildly subnormal size with micro- and macronodular isoechoic changes. The gallbladder was unremarkable.

The portal vein to vena cava ratio was 1.2:1.0. The portal vein was slightly enlarged. The pancreaticoduodenal vein and gastroduodenal vein were mildly congested and tortuous, consistent with early portal hypertension.

**Gastrointestinal**

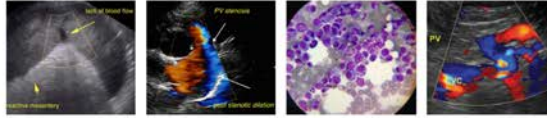
The **stomach** revealed progressively shadowing material measuring up to 2.0 cm, hair type density. The small intestine was diffusely thickened with hypertrophied muscularis. 1:1 muscularis/mucosa ratio. Wall thickness measured 0.26 cm.

**Pancreas**

The base and limbs of the **pancreas** were observed to be largely isoechoic to surrounding omental fat. Pancreatic duct and capsular contour were acceptably normal and parenchyma respected normal curvilinear patterns. No overt evidence of active inflammatory or neoplastic disease was noted.

**ULTRASONOGRAPHIC FINDINGS**

- Normal echocardiogram with trivial mitral insufficiency, essentially flow murmur
- Bladder sand
- Renal mineralization



**PATIENT**

- Subnormal liver size with macro- and micronodular changes
- Shadowing gastric material

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**INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS**

I did not visualize any direct primary portosystemic shunts. However, diffuse liver disease is present. Microvascular dysplasia/portal vein hypoplasia may be an issue and would necessitate core biopsy. CT evaluation could be considered for further definition as to portosystemic shunting. However, no direct connection between the portal vein and vena cava was present. Some color bleeding and possible secondary shunting appeared to be present in the area between the right kidney, pancreas and portal hilus.

Recommend core liver biopsy, either from laparoscopy or surgical approach. Liver oriented diet indicated. Given the bladder sand, cystotomy and surgical biopsies of the liver could be considered, or CT with contrast to absolutely rule out primary extrahepatic shunting followed by surgical intervention. Bile acid profile warranted. Elevated bile acids expected owing to diffuse hepatic disease.

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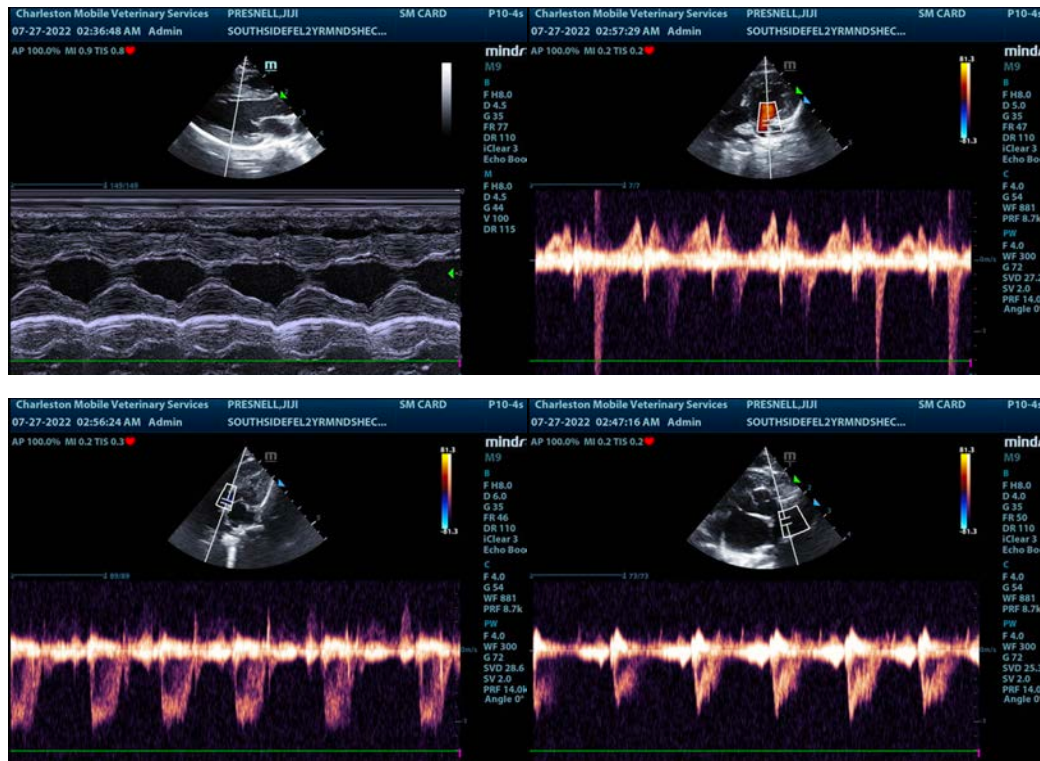
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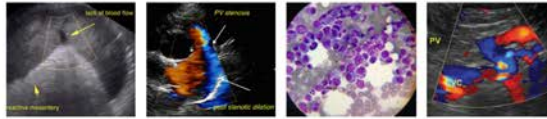
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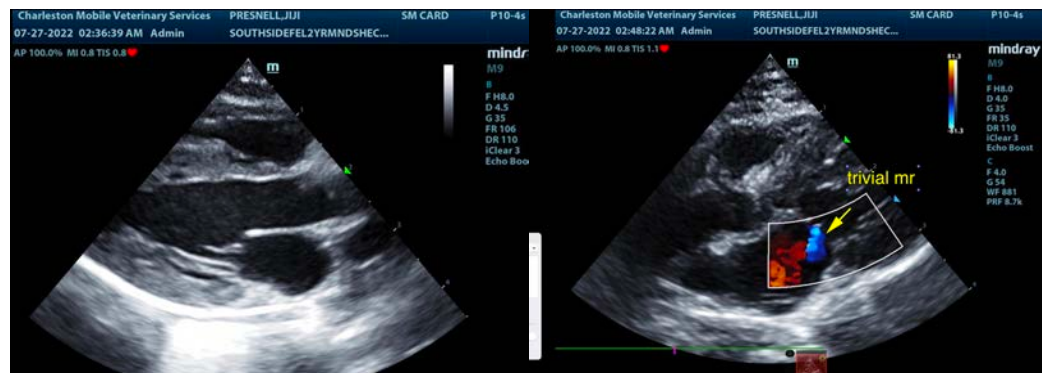
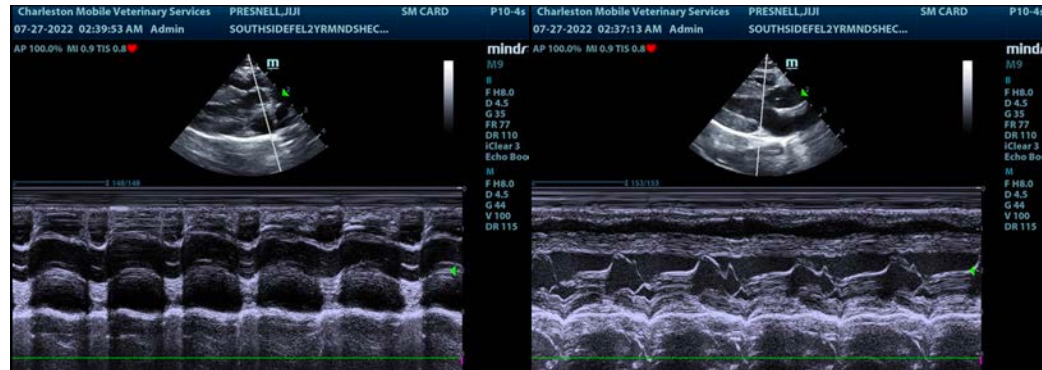
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The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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.

Eric Lindquist, DMV, DABVP, Cert. IVUSS, CEO of SonoPath.com

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