



**PATIENT PRESENTING CLINICAL SIGNS**

Sneakers Heiser Vomiting, weight loss, managed hyperthyroid.

**SPECIES** Abnormal PE/Chem/CBC/UA Results: Generalized decrease in body condition mild thyroid slip, grade 2/6 systolic murmur.

Feline

**ULTRASONOGRAPHIC EXAMINATION OF THE HEART & ABDOMEN**

**BREED**

DSH

**SEX**

Spayed Female

**AGE**

14

**WEIGHT**

4.8

**INTERPRETED BY**

Eric Lindquist, DMV

DABVP, Cert. IVUSS

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		193	0.4	1.01	0.43	89	98
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	1.1	--	--	1.0	0.5	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. The cranial and caudal **mitral** valve leaflets presented normal linear structure and kinetics. 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 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.

**IMAGING PERFORMED BY**

Jeanine French

**HOSPITAL NAME**

Fredon Animal Hospital

**REFERRING VET**

Dr. Linda Grau

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8/4/23



**PATIENT** *Urinary System*

Sneakers Heiser

The **urinary bladder**, trigone, and pelvic urethra presented normal thicknesses and normal tone. The ureters were not visible which is normal. No uroliths or sediment were visualized and anechoic urine was present. No evidence of inflammatory or neoplastic changes were noted. Ureteral papillae were normal.

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The **kidneys** revealed largely normal size and structure, corticomedullary definition and ratio (cortex 1/3 of medulla) were essentially maintained with some age-related loss of curvilinear patterns regarding the capsule and C/M junction. The cortices presented largely uniform texture with some increased echogenicity expected for his age patient. Medullary structure differed distinctly from that of the cortex and no evidence of pelvic dilation was present. Slight mineralization noted. The right kidney measured 3.22 cm. The left kidney measured 2.83 cm.

*Adrenal Glands*

**AGE**

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The regions of the **adrenal glands** were unremarkable.

*Spleen*

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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*

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The **liver** presented coarse architecture and increased portal markings. Occasional hypoechoic non-disruptive nodular change noted.

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*Gastrointestinal*

The **gastrointestinal tract** was largely unremarkable with minor mural thickening without loss of mural detail. The stomach was empty. Curvilinear patterns were maintained.

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*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.

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**ULTRASONOGRAPHIC FINDINGS**

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- Structurally normal heart, likely flow murmur
- Subtle small intestinal thickening
- Hepatic remodeling with occasional nodular change
- Age related renal changes with mineralization

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**INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS**

No evidence of significant disease present. FNA of the liver indicated if any enzymes are elevated. Maldigestion panel, three view chest radiographs and full CNS examination is recommended to examine



**PATIENT**

Sneakers Heiser

for occult disease that could be responsible for the weight loss. Evaluation for competitive eating environments should also be considered.

**SPECIES**

Feline

Flow murmurs can be caused by volume shifts, anemia, excitable/tachycardic state, DRVOTO (Dynamic Right Ventricular Outflow Obstruction), or even simple stethoscope pressure upon clinical exam. These flow murmurs are typically benign and may develop often later in life theoretically owing to age related clinically insignificant changes of the heart. If the patient is recently clinical for anorexia, weight loss or metabolic disturbances, an abdominal sonogram and full workup may be appropriate to assess underlying clinical systemic causes of a newly developed flow murmur.

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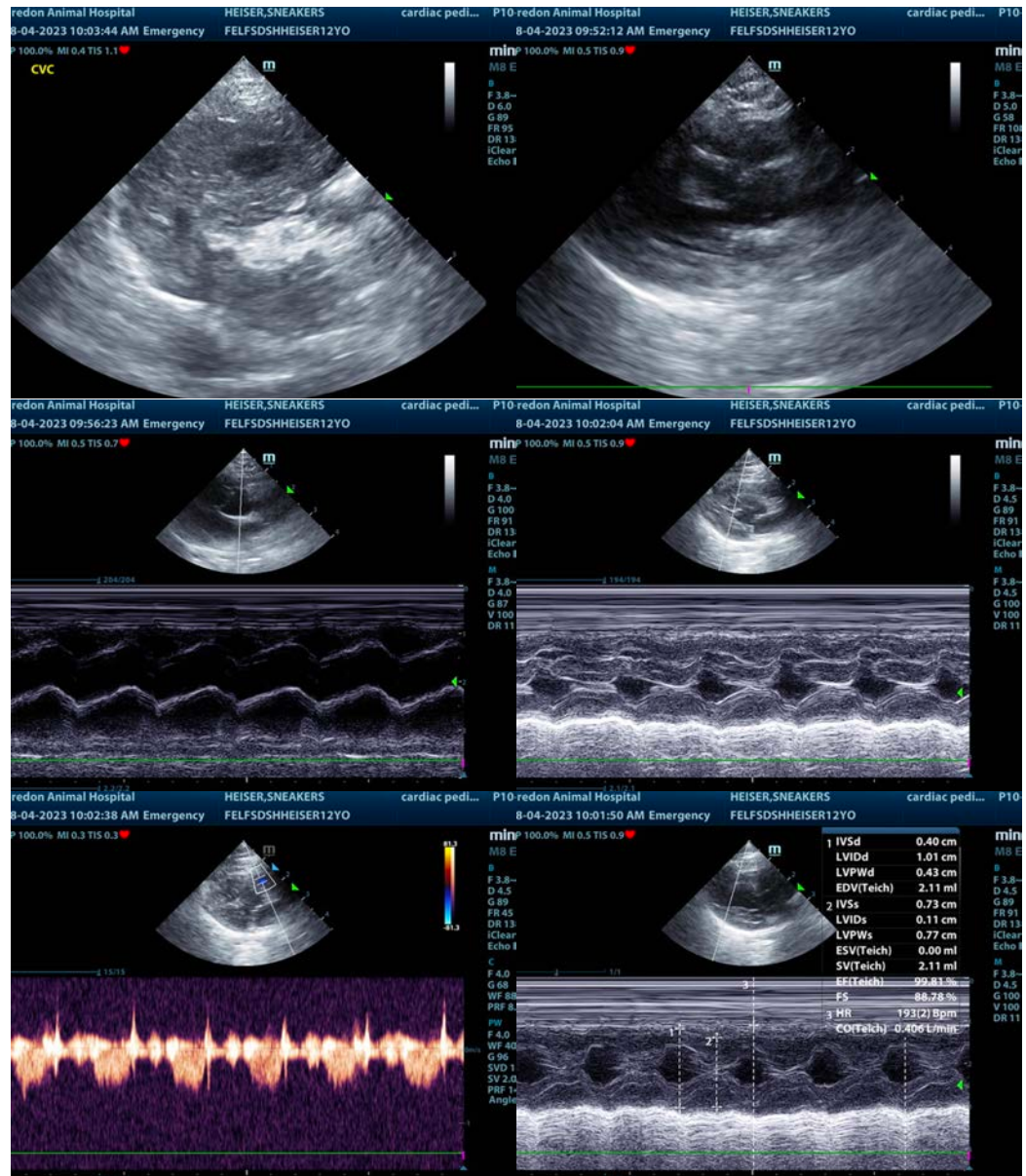
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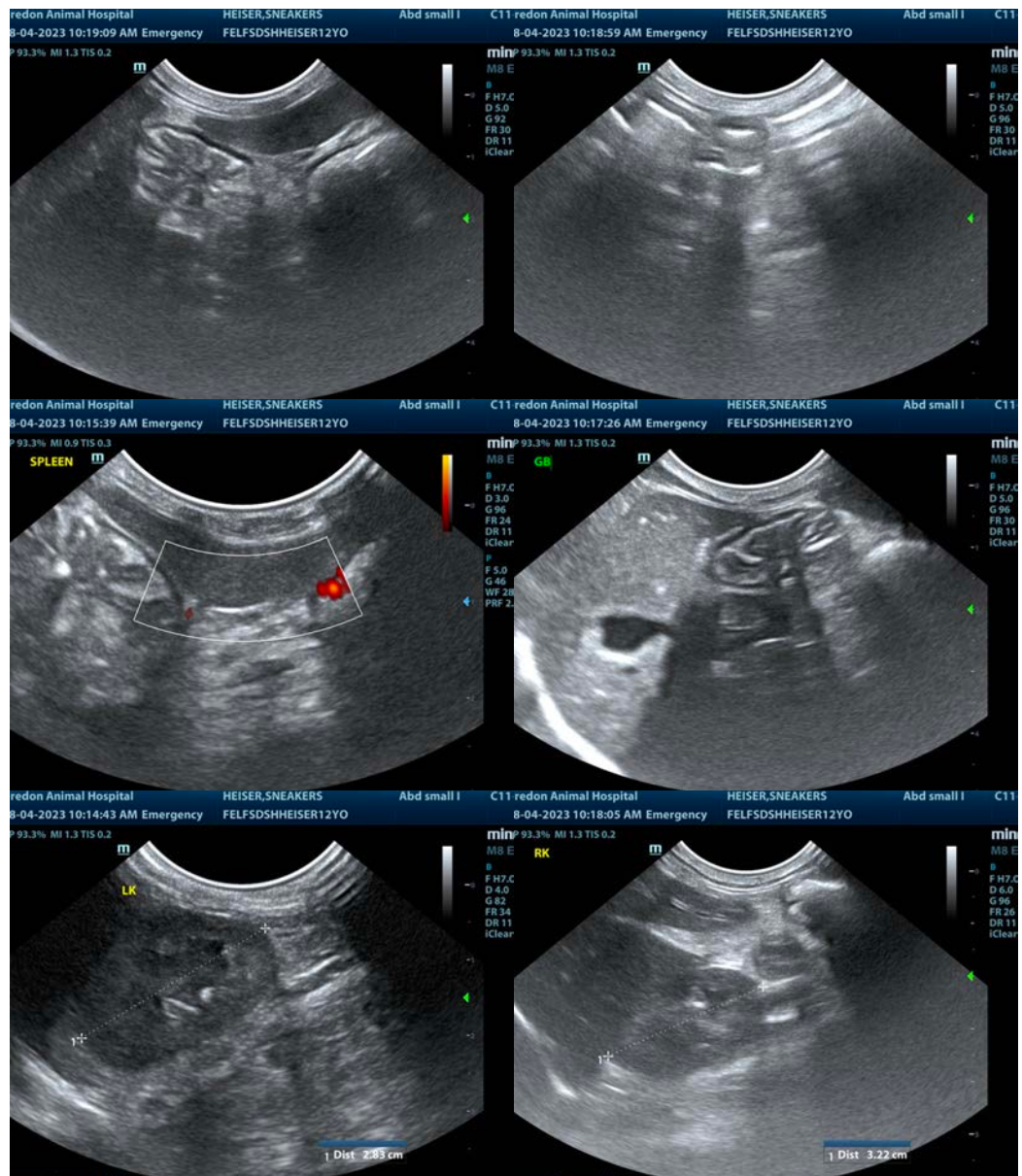
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The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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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