



**PATIENT**

Bean Parsons

**PRESENTING CLINICAL SIGNS**

History: grade 3 right parasternal systolic murmur- assess for anesthesia for dental procedure  
Abnormal PE/Chem/CBC/UA Results: HCT 28%, FIV positive

**SPECIES**

Feline

**BREED**

Domestic Shorthair

**SEX**

Neutered male

**AGE**

8 years

**WEIGHT**

10.4 lbs

**INTERPRETED BY**

Eric Lindquist, DMV  
DABVP, Cert. IVUSS

**IMAGING PERFORMED BY**

Diane McFadden, RVT

**HOSPITAL NAME**

Blirstown AH

**REFERRING VET**

Dr. Lovell

**INVOICE**

99957

**DATE**

4/26/22

**ULTRASONOGRAPHIC EXAMINATION OF THE HEART**

The **left atrial** revealed volume overload. **Mitral** valve insufficiency was noted. The **left ventricle** presented minor volume overload. Septal and free wall thicknesses measure normally; however, **myocardial** remodeling was noted. Contractility appeared adequate. 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** insufficiency was noted. 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). Trace **pericardial** effusion was noted.

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		2.02	0.53	1.9	0.5	32	63
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	2.0	2.0	2.0		0.6	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							

**ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN**

**Urinary System**

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 was noted. Ureteral papillae were normal.

The **right kidney** 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 this age patient. Medullary structure differed distinctly from that



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of the cortex and no evidence of pelvic dilation was present. Pinpoint mineralization were noted in the caudal pole of the right kidney. The right kidney measured 3.9 cm.

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The **left kidney** presented a relatively uniform cortical hyperechogenicity when compared to the renal medulla, spleen and liver. No overt masses were noted. Corticomedullary definition was nebulous and the ratio favored the cortex slightly. The ureters were not visible and assumed to be normal. These changes are most consistent with chronic interstitial nephritis yet infiltrative disease could not be entirely ruled out without biopsy though neoplasia is not suspected. The left kidney measured 3.9 cm with significant infarcts and slight pyelectasia.

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**Adrenal Glands**

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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.

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**Spleen**

**WEIGHT**

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The **spleen** was mildly enlarged with uniform, but subtly micronodular parenchyma, and undulating capsular contour. This is consistent with reactive spleen owing to immune stimulus or early infiltrative disease such as mast cell disease or lymphoma. 25-gauge FNA would be ideal if weight loss is an issue to differentiate early round cell neoplasia versus splenitis or reactive spleen all of which can present in this manner. The spleen measured 0.97 cm.

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**Liver**

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The **liver** was uniform and mildly enlarged with minor hepatic vein and vena cava dilation noted. The gallbladder presented acceptably thin walls with primarily anechoic content. The cystic and common bile ducts were normal. No pathological hepatic lymphadenopathy was evident. No overt structural evidence of inflammatory, infiltrative or regenerative pathology was evident.

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**Gastrointestinal**

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Examination of the **gastrointestinal tract** revealed a stomach and intestine free of stasis, of normal wall thickness, acceptable curvilinear mural detail, and peristaltic activity. Small and large intestine demonstrated normal luminal chyme and stool consistency respectively. No obstructive or overt infiltrative disease was noted. No associated abnormal lymphatic activity was noted.

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**Pancreas**

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The base and limbs of the **pancreas** were observed to be largely isoechoic to surrounding omental fat. Some parenchymal remodeling, however, with mild deviation from curvilinear normalcy was observed. Pancreatic duct and capsular irregularities were present consistent with age related changes. If pain upon imaging (+ Murphy sign) was present or if the patient is focally painful in subxiphoid palpation then low-grade smoldering chronic pancreatitis should be suspected.



**PATIENT                      ULTRASONOGRAPHIC FINDINGS**

Bean Parsons                      Chronic pancreatic and renal changes.

Slight splenic enlargement.

**SPECIES**

Mitral and tricuspid insufficiency volume overload of the left atrium and trace pericardial effusion.

Feline

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**INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS**

Domestic Shorthair

This is consistent with unclassified cardiomyopathy with emerging left and right-sided heart failure. I do not recommend anesthesia in this patient at this time. Pimobendan is recommended at 0.3 mg/kg b.i.d., ace inhibitor at 0.5 mg/kg s.i.d. and low-dose Lasix at 6.25 mg b.i.d. Plavix therapy would also be recommended. A recheck echocardiogram is recommended in 10-14 days. CBC path review is warranted given the anemia. It may be anemia from chronic disease; however, other causes should also be investigated such as bone marrow disease. Given the slight pericardial effusion and dilated vena cava, this patient is at the precipice of left and right sided heart failure. Basal respiratory rate should be targeted to be less than 20/minute. Blood pressure, BUN and creatinine, chest radiographs and respiratory rate should all be evaluated in 7-10 days. A recheck echocardiogram is recommended in 10 days.

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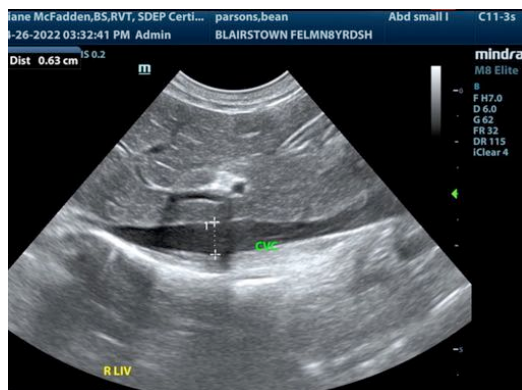
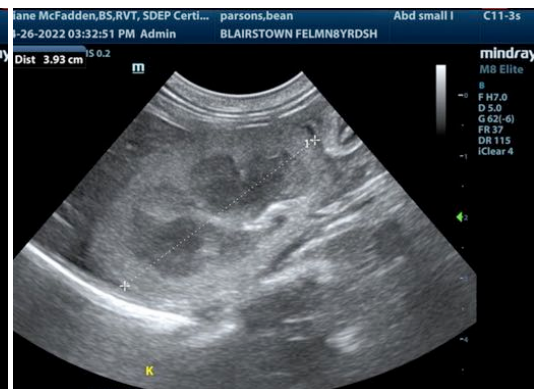
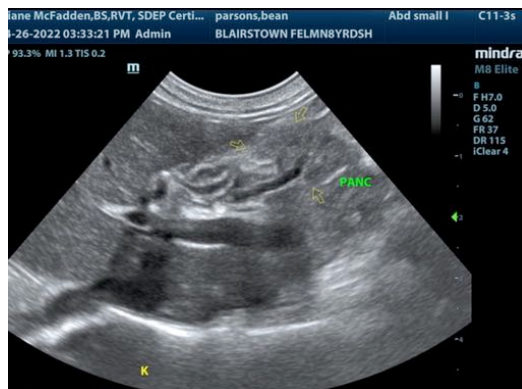
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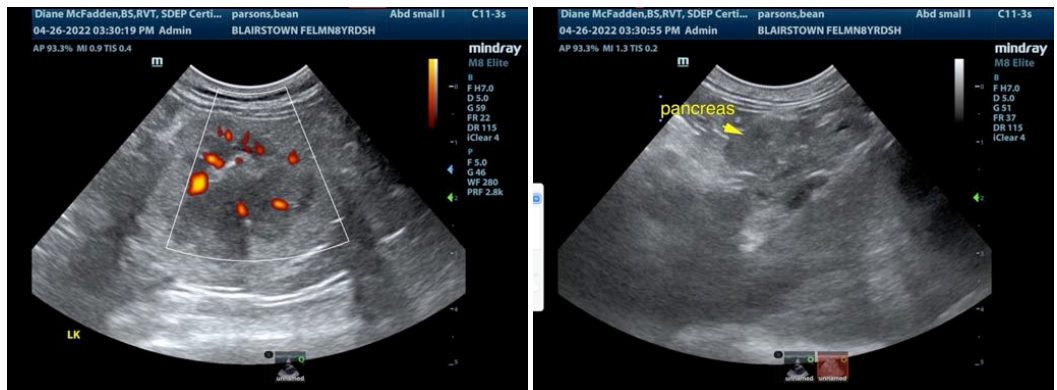
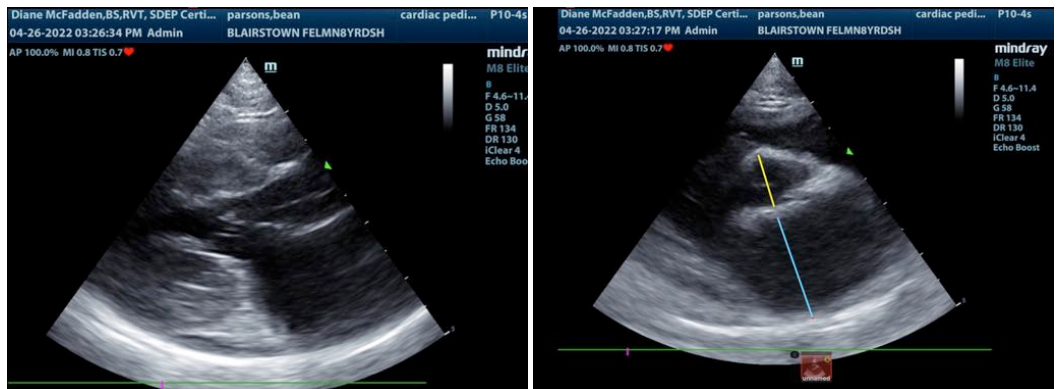
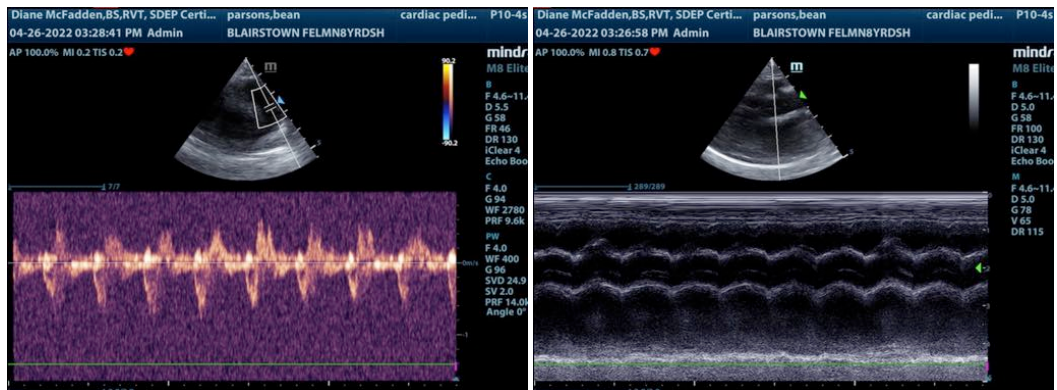
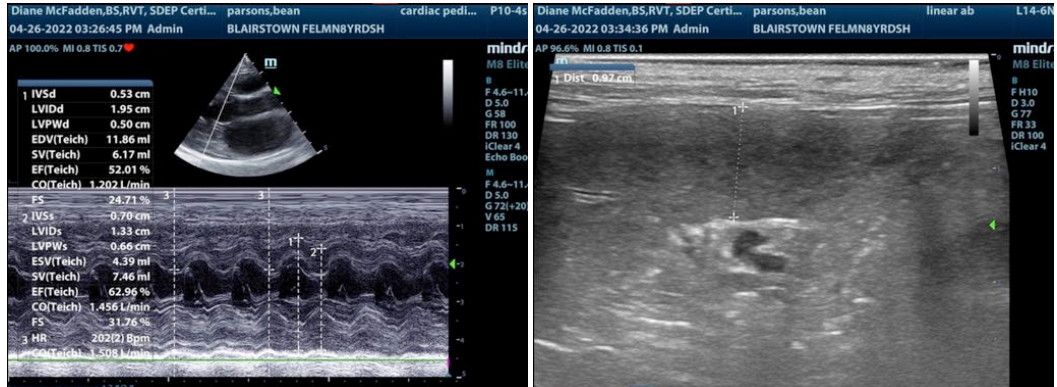
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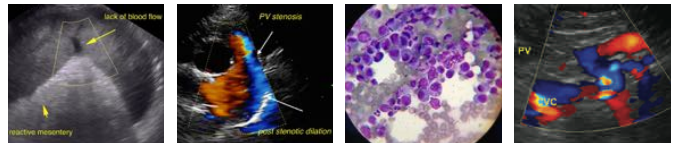
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The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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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