

PATIENT

Connie DeSarno

SPECIES

Feline

BREED

DSH

SEX

Spayed Female

AGE

18 Years

WEIGHT

6.9 Pounds

INTERPRETED BY

Eric Lindquist, DMV

DABVP, Cert. IVUSS

IMAGING PERFORMED BY

Dr. Elaina Petrone

HOSPITAL NAME

Long Branch AH

REFERRING VET

Dr. Elaina Petrone

INVOICE

44708

DATE

2/2/23

PRESENTING CLINICAL SIGNS

History of chronic constipation and Iris Stage 2, history of a heart murmur not appreciated on exam today. Presented today lethargic, anorexic, hypothermic, worsened azotemia, anemia, hypokalemia, leukocytosis with neutrophilia and monocytosis, elevated ALT, elevated amylase, abnormal bnp

Abnormal PE/Chem/CBC/UA Results: Pale mucus membranes, slightly dehydrated. 2/2/23: Hct 27%, BUN: 82, Creatinine 2.4; WBCs 23,000 with mild neutrophilia: 19.1 and monocytosis:1.7, K: 2.8, ALT 137, elevated amylase. Abnormal bnp 1/20/23 BUN: 42 and creatinine 1.8, HCT 31%, WBCs 23,000 with moderate neutrophilia: 22,000

ULTRASONOGRAPHIC EXAMINATION OF THE HEART & ABDOMEN

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	0.55	1.2	0.55	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	1.5	1.4	--		--	--	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. Mild **myocardial** remodeling noted in this patient, largely age related change. **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.

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



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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. The left kidney measured 3.57 cm with slight pyelectasia at 0.57 cm. The right kidney measured 3.45 cm with slight pyelectasia noted.

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Adrenal Glands

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

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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.

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Liver

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The **liver** images from right and left intercostal as well as subcostal views revealed subjectively normal liver size, contour, and structure. Some age-related parenchymal remodeling was noted but likely not clinically significant at this time. Increased portal markings noted. The gallbladder presented some dependent debris with essentially normal contour. The cystic and common bile ducts were normal. No overt evidence of active inflammatory, infiltrative or regenerative pathology was noted but should be paired with current or past LE elevations regarding any clinical significance to this presentation. The hepatic lymph nodes were unremarkable.

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Gastrointestinal

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The **gastrointestinal tract** revealed minor variable thickening and echogenic submucosal changes most consistent with low grade end result of chronic GI disease such as IBD and may be related to malassimilation of nutrients if any weight loss is present. No obvious neoplastic patterns were noted and luminal content as unremarkable. Intestinal wall thickness measured up to 0.30 cm. Slight mesenteric lymphadenopathy noted at 5.0 mm. Some reactive mesentery noted associated with the jejunum. However, neoplastic criteria is not present in the small intestine.

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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 subxyphoid palpation then low-grade smoldering chronic pancreatitis should be suspected.

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ULTRASONOGRAPHIC FINDINGS

- Mild myocardial remodeling, unremarkable heart otherwise
- Moderate degenerative renal changes with pyelectasia
- Regional enteritis pattern with slight mesenteric lymphadenopathy
- Age related hepatic changes



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- Pancreatic remodeling

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INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

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No evidence of cardiac disease or significant abdominal pathology. Largely expected changes for this age patient. Urinary workup warranted to assess for any evidence of UTI. However, the pyelectasia may be owing to degenerative change of the renal pelvises. Medical management for enteritis and IV fluid support warranted. I cannot rule out an emerging neoplastic event. However, no neoplastic criteria met at this point.

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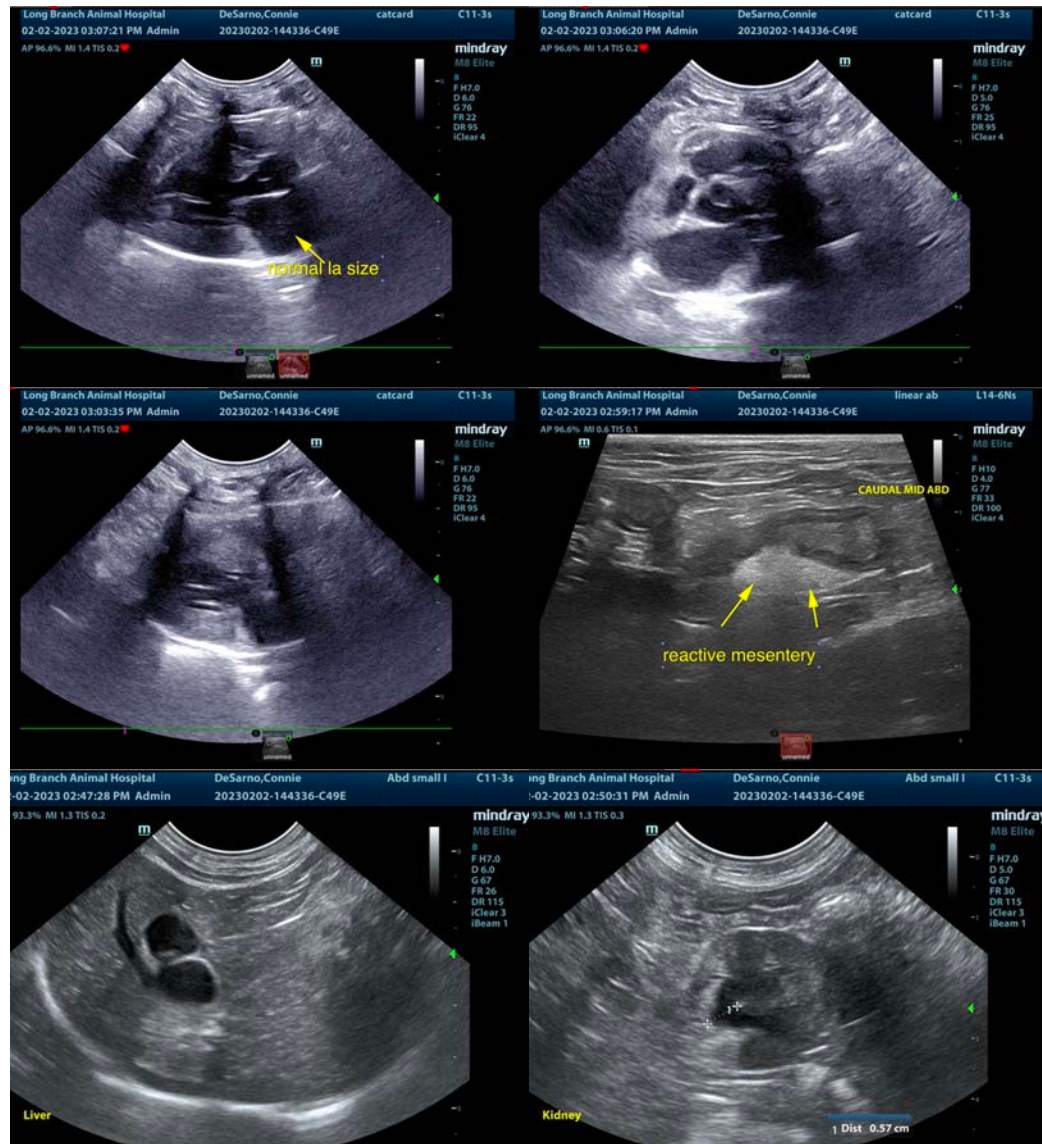
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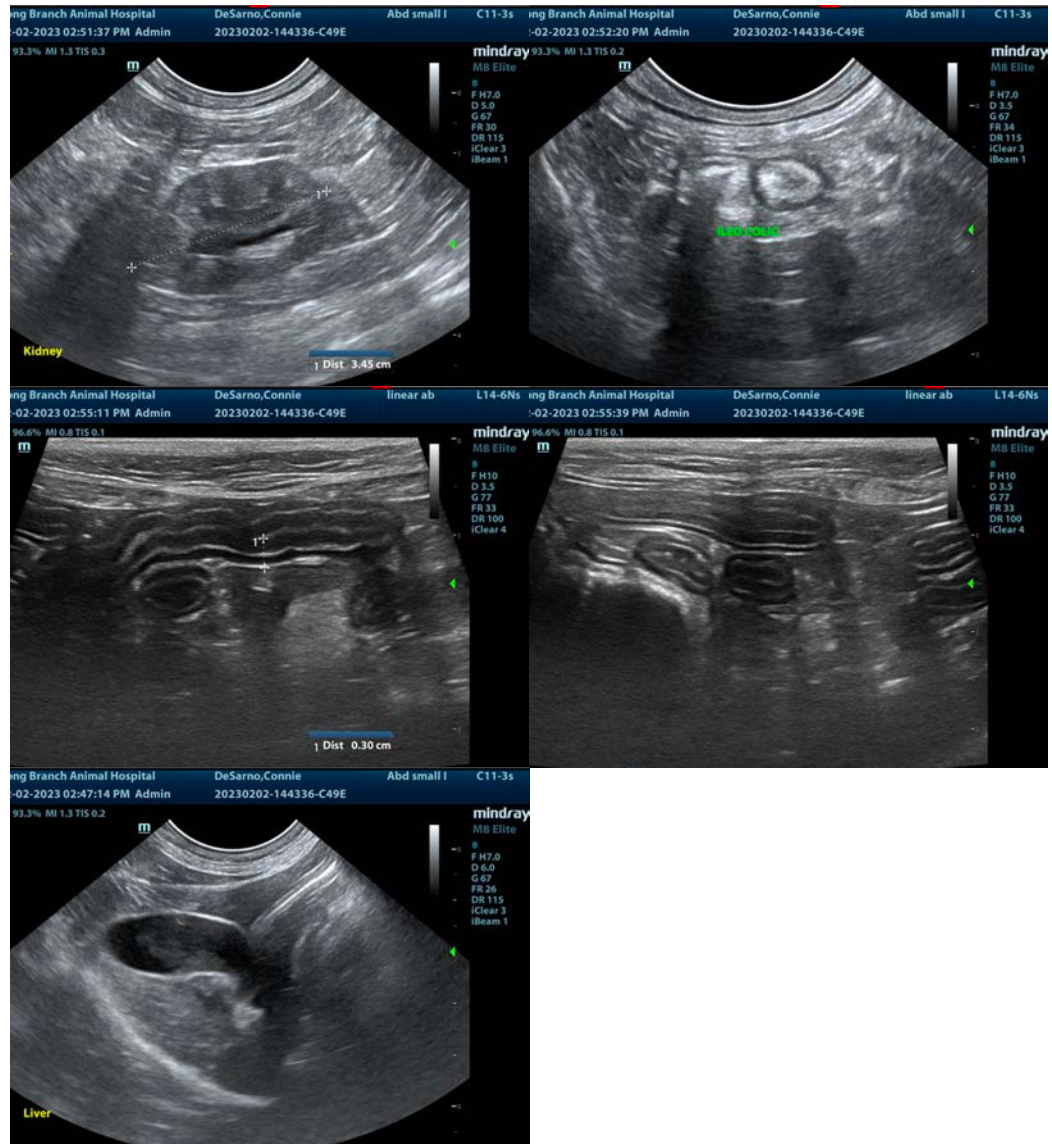
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The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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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