



PATIENT

Kiba Zimmerman

SPECIES

Feline

BREED

DSH

SEX

Neutered Male

AGE

11 Years

WEIGHT

10.8 Pounds

PRESENTING CLINICAL SIGNS

Non-regenerative anemia with inflammation. Abnormal thickening or mass like effect noted. V+ (eats fast). Very increased respiratory effort. Hx of severe asthma and cystitis. Current meds: Pred 5mg sid, Terbutaline 0.625mg bid.

Abnormal PE/Chem/CBC/UA Results: RBC 5.34, Hct 19.3, Hgb 6.8, Neuts 14.47 w/suspected bands, Mono 0.84, SDMA 20. USG 1.038, Cocci

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		168	0.57	1.47	0.53	40	75
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			1.05	0.79	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

INTERPRETED BY

Eric Lindquist, DMV
DABVP, Cert. IVUSS

IMAGING PERFORMED BY

Shari Reffi, CVT

HOSPITAL NAME

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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). Trace pericardial effusion noted, non-cardiogenic in this patient and not to the level of tamponade. The extracardiac space revealed a mild amount of fat. No evident masses.

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 were noted. Ureteral papillae were normal.



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The **kidneys** 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 right kidney measured 3.34 cm. The left kidney measured 4.06 cm.

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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. The right adrenal gland measured 0.35 cm.

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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 submitted revealed subjectively normal liver size, contour, and structure. Parenchymal echogenicity was naturally coarse and hypoechoic to the spleen. Vascular and biliary tracts were of normal volume with no evidence of congestion. 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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Transdiaphragmatic view revealed comet tail lung pattern.

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Gastrointestinal

The upper **gastrointestinal tract** was unremarkable. The ileocecal junction revealed a concentric thickening. The thickening extended for approximately 2.0 cm x 1.3 cm. Lymph nodes in the region appeared reactive, up to 1.5 cm x 0.5 cm. The colon presented hard stool, which may be owing to dehydration.

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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

- Ileocecal junction thickening – strong potential for an emerging neoplastic process such as lymphoma or carcinoma. Inflammatory bowel with lymphadenitis possible.
- Trace pericardial effusion, normal echocardiogram otherwise.
- Comet tail lung pattern/B-lines – suspect alveolar disease. Assessment should be based on radiographic findings.



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INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

The pericardial effusion is likely a focal manifestation of a multicentric or systemic process. Given the anemia in this patient, CBC path review and bone marrow aspirate warranted. FNA of the ileocecal junction could be considered, however may not exfoliate adequately. Surgical removal of the ileocecal junction could be considered with appropriate biopsies. Prognosis is guarded.

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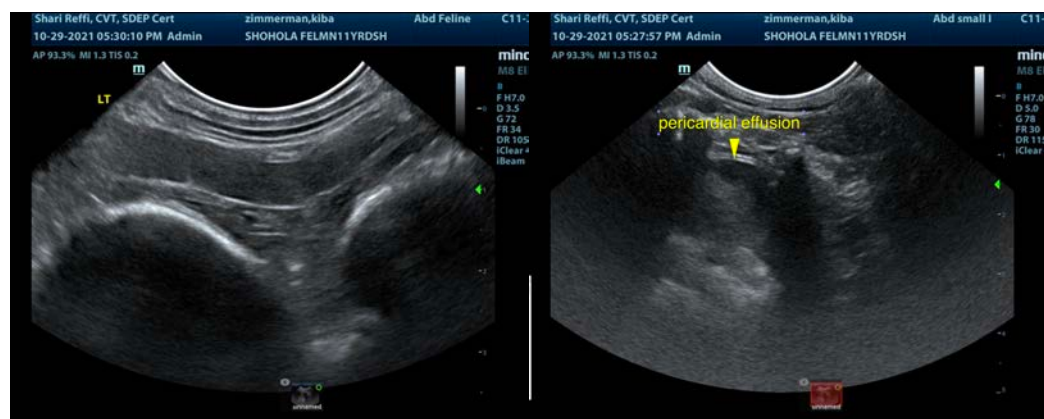
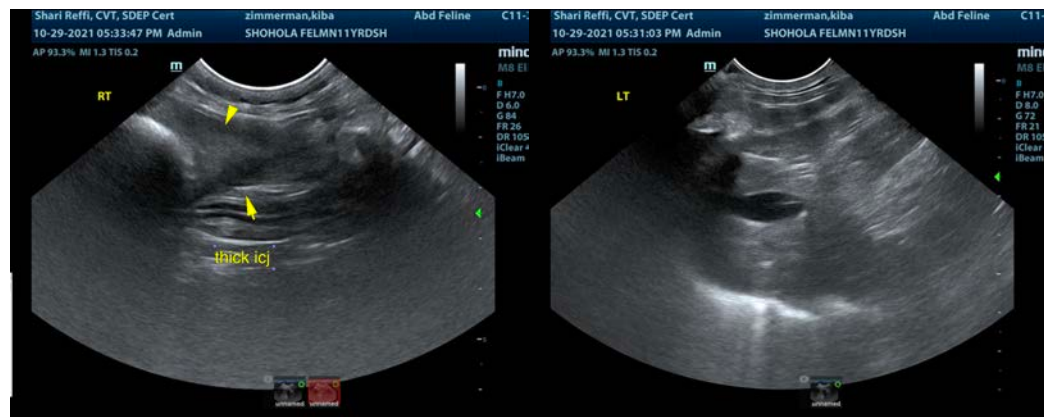
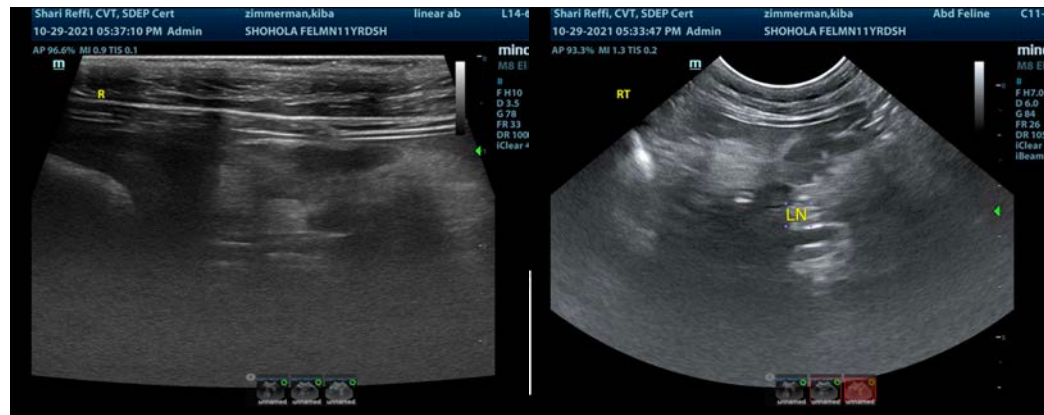
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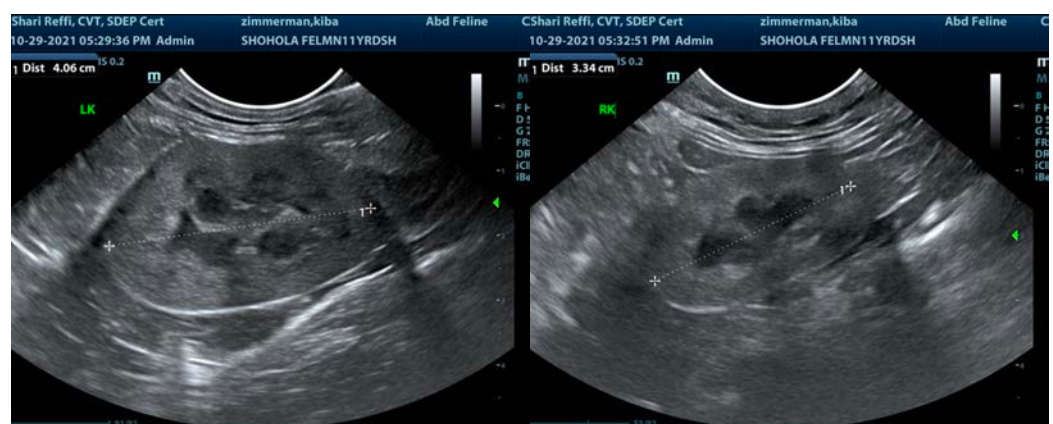
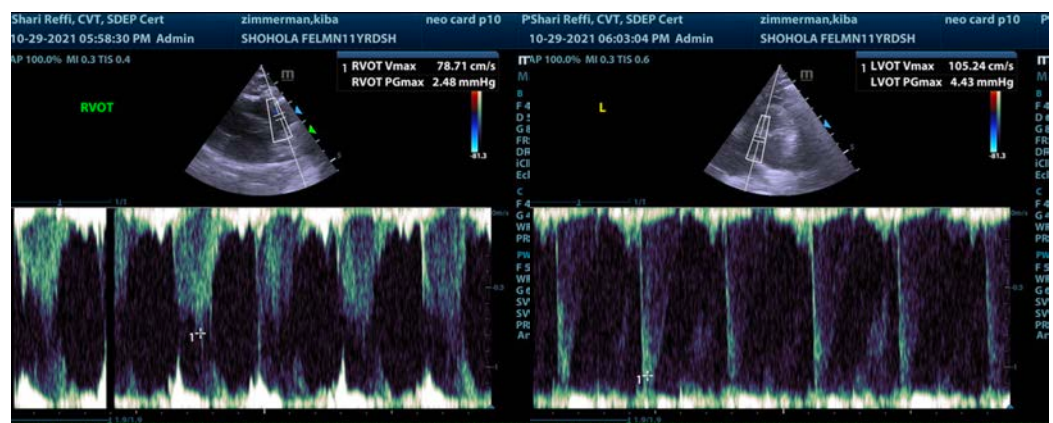
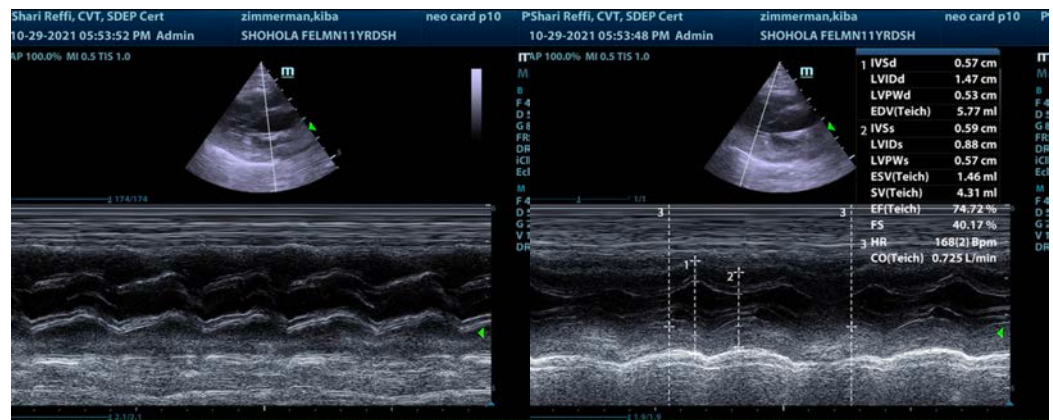
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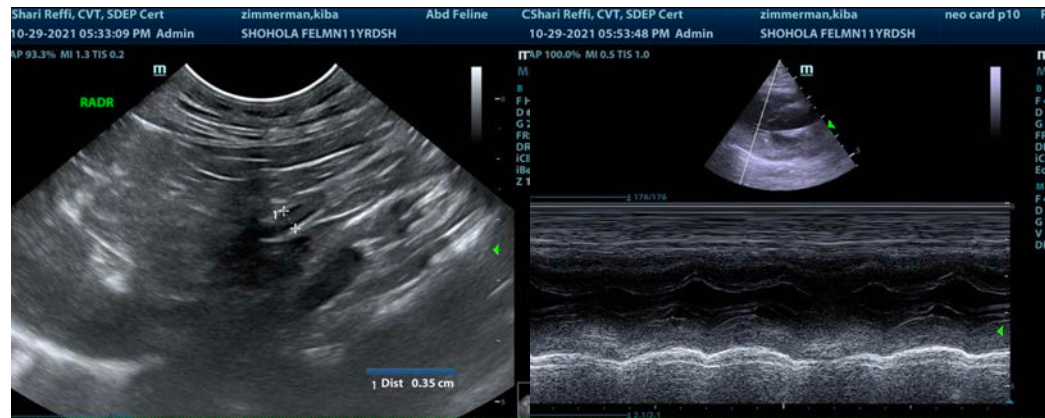
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The information and recommendations provided are based on the images presented by the referring veterinarian. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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.

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