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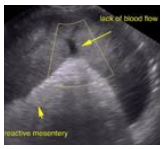

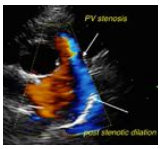

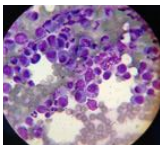
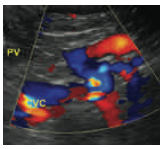

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1-800-838-4268 info@sonopath.com

PATIENT

Monty Holmes

SPECIES

Feline

BREED

Domestic Longhair

SEX

Neutered male

AGE

17 years

WEIGHT

10.1 lbs

INTERPRETED BY

Eric Lindquist, DMV DABVP, Cert. IVUSS

IMAGING PERFORMED BY

Shari Reffi, CVT

HOSPITAL NAME

Long ValleyAH

REFERRING VET

Dr. Earl

INVOICE

91319

DATE

8/18/21

PRESENTING CLINICAL SIGNS

History: Straining to urinate, hematuria, thickened bladder. GB stones, pleural effusion/pulmonary nodule on rads. Current meds: Methimazole 5mg bid, Furosemide 10mg IM, Atopica (discontinuing) Abnormal PE/Chem/CBC/UA Results: u/a pending. USG 1.018

ULTRASONOGRAPHIC EXAMINATION OF THE HEART

The **left atrium** presented moderate enlargement with **mitral** insufficiency velocity of 5 m/sec. 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. Minor **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. Pleural effusion was also noted. A 2.2. cm fatty tissue accumulation was noted in the pleural effusion. Not likely neoplastic and most consistent with floating thoracic fat. Arrhythmogenic activity was noted in the heart.

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		189	0.38	2.17	0.43	28	57
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	1.6	1.6	2.3		1.06	0.77	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

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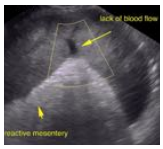

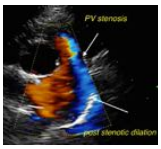

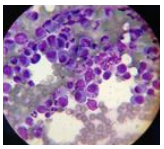
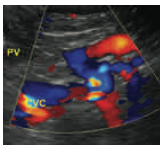

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ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN

Urinary System

The **urinary bladder** presented a relatively uniform thickening of the cranioventral and craniodorsal mucosae with micropolypoid mucosal changes without involvement of the submucosae. Concentric thickening measured up to 0.42 cm. The urine presented some echogenicity consistent with suspended debris. No evidence of urethral pathology was present. This presentation is most consistent with chronic cystitis. Technically transitional cell carcinoma cannot be ruled out without histopathological review but is not overtly suspected based on this pattern. Cystocentesis and urine culture +/- pathological review of urine cytology would be warranted. No overt calculi were present at this time.

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 left kidney measured 3.57 cm. The right kidney measured 3.96 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 left adrenal gland measured 0.38 cm.

Spleen

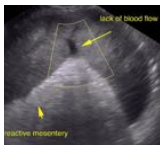
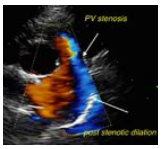
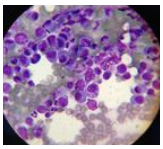
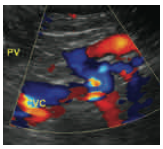
The **spleen** was mildly enlarged with uniform, but subtly micronodular parenchyma, and undulating capsular contour. This is consistent with reactive spleen owing to immune stimulus or early infiltrative disease such as mast cell disease or lymphoma. 25-gauge FNA would be ideal if weight loss is an issue to differentiate early round cell neoplasia versus splenitis or reactive spleen all of which can present in this manner. The spleen measured 1.1 cm.

Liver

Multiple lobar biliary calculi were noted with swollen **hepatic** contour. The gallbladder calculus embedded in the cystic duct measured 0.86 cm. A separate calculus was noted in the common bile duct. The calculus in the distal common bile duct measured 0.2 cm.

Gastrointestinal

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

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malassimilation of nutrients if any weight loss is present. No obvious neoplastic patterns were noted and luminal content as unremarkable.

Pancreas

The **pancreas** revealed a dilated with heterogenous, hypoechoic parenchyma. The pancreatic duct is likely obstructed owing to common bile duct obstruction given the unification of the two ducts prior to the duodenal papilla. .

ULTRASONOGRAPHIC FINDINGS

Mitral and tricuspid insufficiency.

Bilateral atrial enlargement.

Trace pericardial and pleural effusion.

Arrhythmogenic activity.

Chronic interstitial nephrosis pattern with gallbladder and common bile duct calculus.

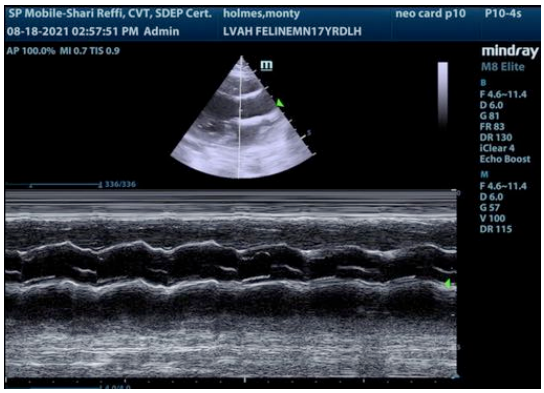
Swollen liver.

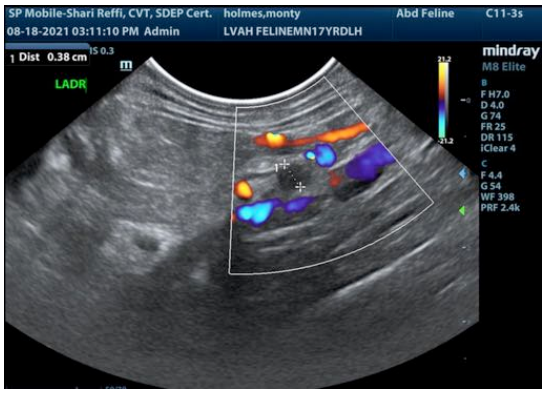
Likely obstructed pancreatic duct.

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

Regarding the heart I recommend Lasix at 12.5 mg b.i.d. reducing to 6.25 mg b.i.d. as resting heart rate reaches 20/minute or less. Ace inhibitor is warranted at 0.5 mg/kg s.i.d. and Pimobendan off label at 0.3 mg/kg b.i.d. Recheck echocardiogram is one week if the patient is able to be stabilized. Plavix therapy would be appropriate.

I recommend stabilizing the cardiac/thoracic presentation first. Eventual biliary surgery is likely going to be necessary to remove gallbladder, cystic duct and common bile duct calculi. There was no overt evidence of neoplasia. Guarded long term prognosis.





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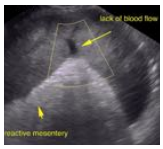
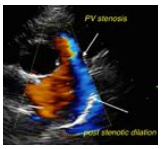
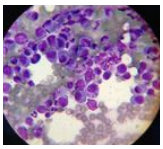
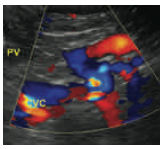

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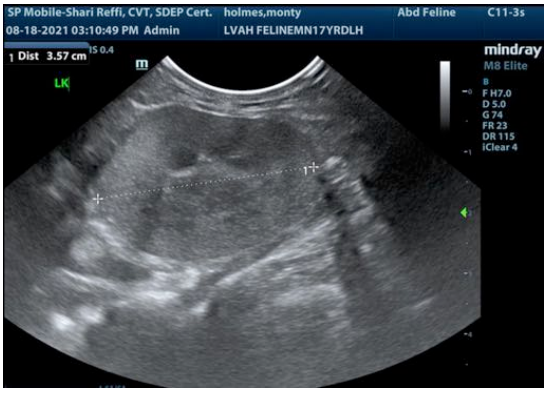

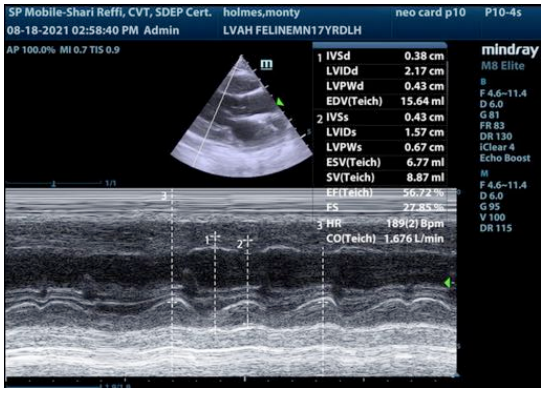

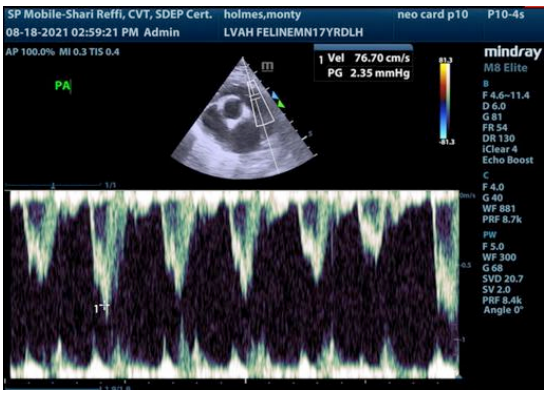

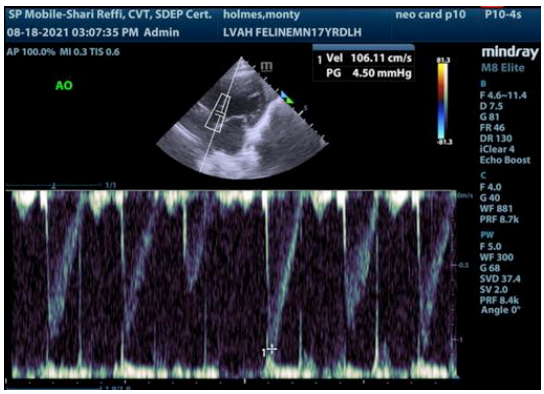

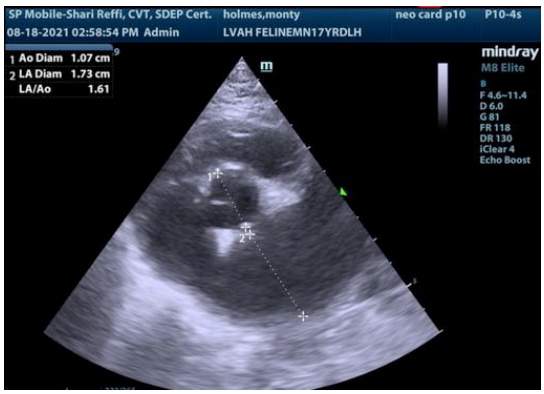

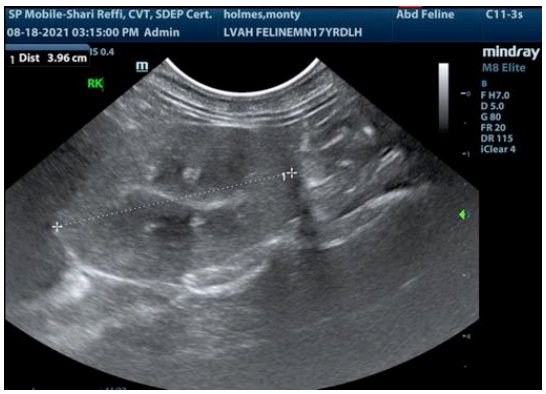

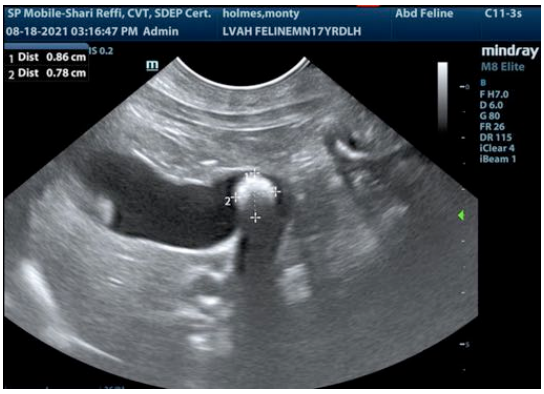

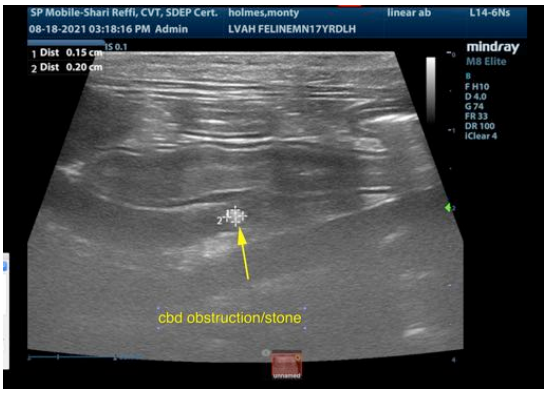

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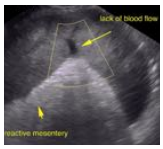
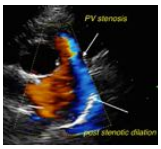
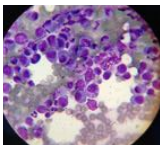
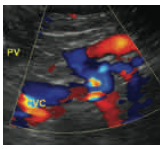

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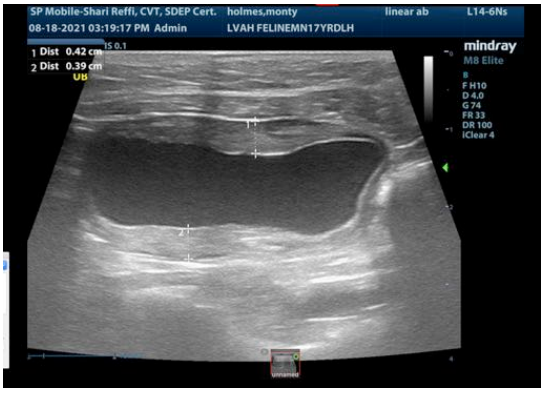

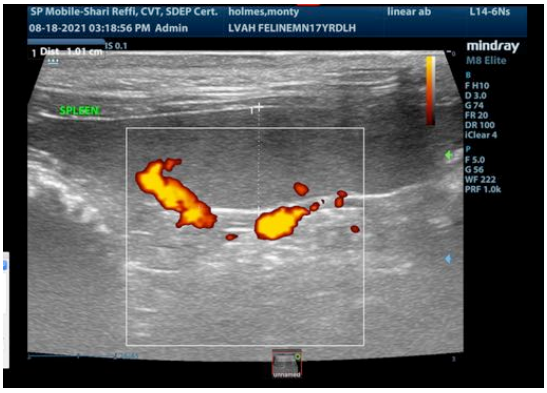

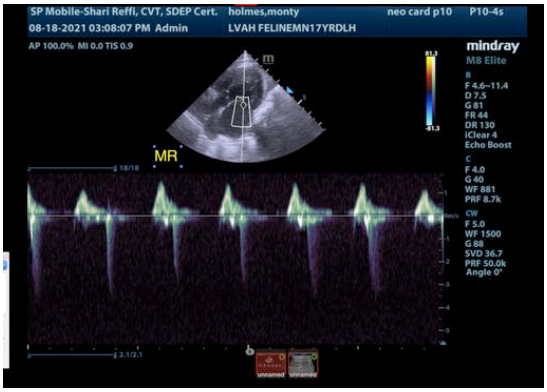

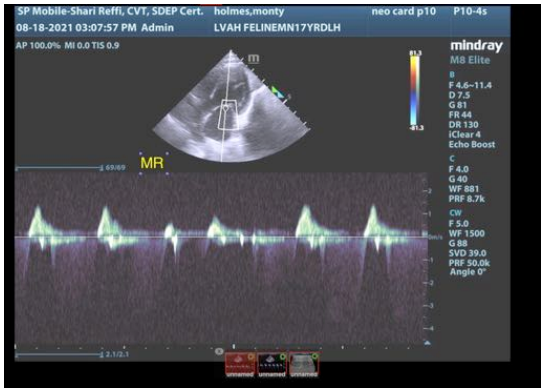

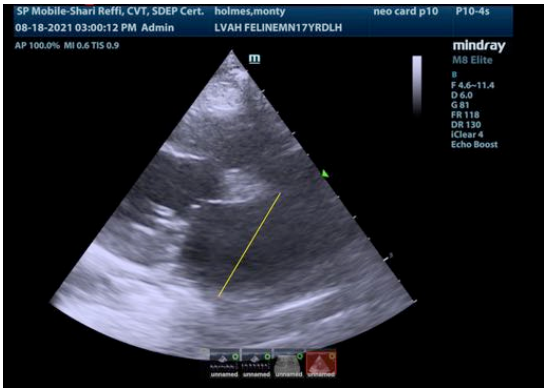

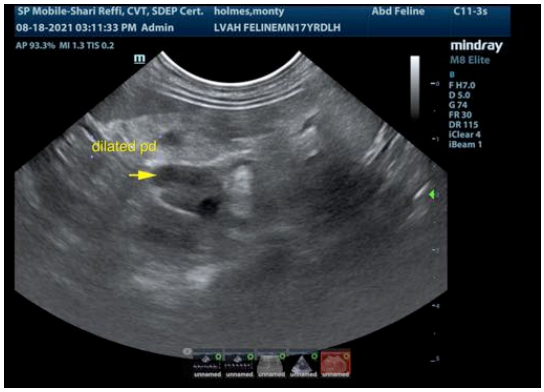

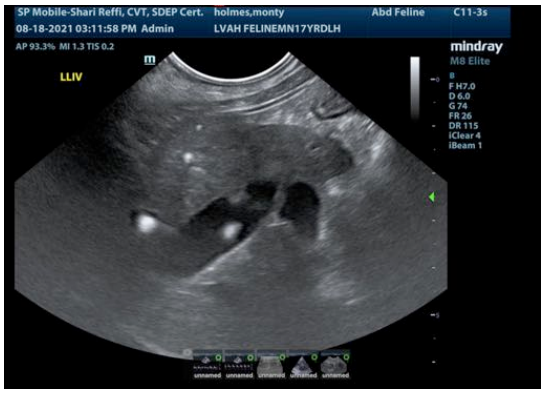

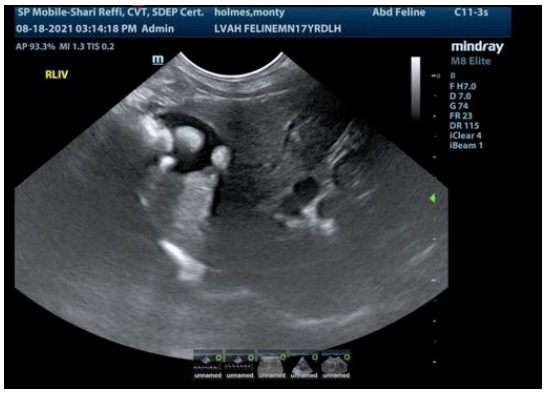

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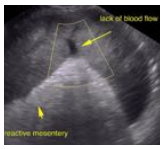

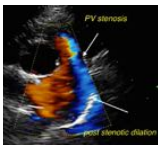

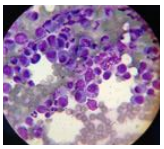
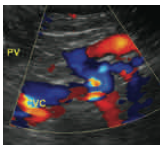

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17 years

WEIGHT

10.1 lbs

INTERPRETED BY

Eric Lindquist, DMV
DABVP, Cert. IVUSS

IMAGING PERFORMED BY

Shari Reffi, CVT

HOSPITAL NAME

Long ValleyAH

REFERRING VET

Dr. Earl

INVOICE

91319

DATE

8/18/21

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.

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