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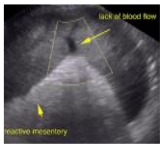
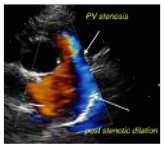
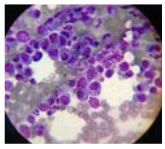
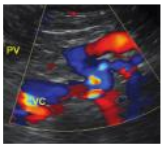

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1-800-838-4268 info@sonopath.com

PATIENT

Fred Young

SPECIES

Feline

BREED

DLH

SEX

MN

AGE

18

WEIGHT

7.3 lbs.

INTERPRETED BY

R. McKenzie Daniel, DVM, DABVP (Canine and Feline)

IMAGING PERFORMED BY

Diane McFadden

HOSPITAL NAME

Budd Lake AH

REFERRING VET

Dr. Horn

INVOICE

16579

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4/12/23

PRESENTING CLINICAL SIGNS

persistent hematuria, Hx of CKD, currently on LRS SQ PRN.

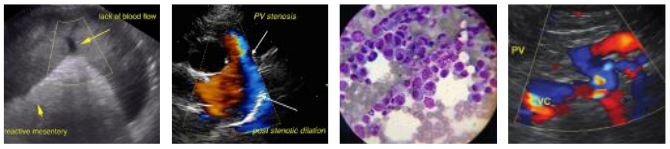
Abnormal PE/Chem/CBC/UA Results: UA culture: salmonella sp., treated with clavamox. BUN 59, creat 3.1, SDMA 15.7, ALT 25, T4 7; UA: blood 3+, wbc 11-20, RBC 21-50, rods 11-25, USPG 1.014

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		193	0.44	1.8	0.5	50	85
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		1.78	2.0		1.0	0.8	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 mildly enlarged **left atrial** size based on 2 separate LA measurements. The cranial and caudal **mitral** valve leaflets presented normal linear structure and kinetics. Mild eccentric to centralized MR was present measuring 4.4 m/s. The **left ventricular** septum and free wall revealed normal thicknesses, adequate contractility and normal left ventricular volume, yet some echogenic remodeling of the septum and free wall were noted consistent with some level of **myocardial fibrosis**. The **left ventricular outflow** tract demonstrated normal laminar flow and subjective structural integrity. The **right atrium** and auricle revealed mildly enlarged size and normal content. No evidence of masses was noted or chamber overload. **Tricuspid** valvular assessment demonstrated adequate linear morphology and kinetics. Mild TR was present on Doppler measuring 3.6 m/s. The **right ventricle** was enlarged in size with normal chordae structure, myocardial echogenicity and thickness. Minor aortic insufficiency was present on Doppler. **Pulmonic** tract assessment revealed normal valve structure, laminar flow, and diameter (approx.1:1 pa/ao ratio). No visible **pericardial** free fluid was noted. Mild to possible moderate pleural effusion was present. No overt extracardiac pathology or cardiac tumors were noted in the visible window.



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Urinary System

The urinary bladder, trigone, cystourethral junction, and visible pelvic urethra to a depth of 2.0 cm exhibited normal thickness and tone. Primarily anechoic urine was present in the lumen. Mild nondependent particulate sediment, which may indicate cellular debris / protein, crystalline debris, lipid, or mucus, was present without evidence of calculus formation. The ureteral papillae were normal. The ureters were not visible which is normal. No evidence of inflammatory or neoplastic mural changes were noted.

The area of the aortic trifurcation was free of pathology.

Normal renal size with asymmetrical margination were present in both kidneys. The renal cortex presented uniformly increased in echogenicity with uniform echotexture. The renal cortex appeared to be hypertrophied resulting in an altered cortex: medulla ratio. Significant loss of corticomedullary distinction was also present with nonuniform increased medullary echogenicity and mild pyelectasia. The renal medullary volume was subjectively reduced. The left kidney measured 3.6 cm in length. The right kidney measured 3.9 cm in length. No overt evidence of neoplastic criteria was noted.

Adrenal Glands

No overt pathology was noted in the area of the left adrenal gland.

The right adrenal gland was normal in size and contour. Pinpoint areas of mineralization were present which is incidental, without capsular distortion or overt tumors. This is a normal age-related finding and not pathological. The right adrenal gland measured 0.38 cm width.

Spleen

The spleen exhibited primarily finely textured parenchyma which was hyperechoic to the liver and renal cortical parenchyma. Mild generalized parenchyma heterogeneity was present without evidence of nodular changes. The capsule was smooth and regular without apparent expansion. The splenic vasculature at the hilus was normal in volume with no evidence of congestion or thrombosis. The parenchymal heterogeneity is likely consistent with benign changes such as extramedullary hematopoiesis or age-related remodeling with minor potential for inflammatory or neoplastic disease.

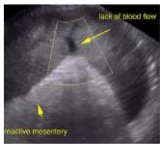
Liver/ Gallbladder

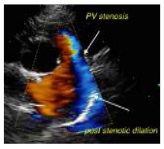
The liver was mildly enlarged with symmetrical capsule contour and minor parenchymal remodeling. Subjective normal vascular volume was noted. A solitary, nondisruptive, cystic-appearing mass was noted in the deep mid parenchyma measuring 3.1 cm in diameter. The gallbladder was non-distended in size with thin walls and primarily anechoic luminal content. The cystic and common bile ducts were normal.

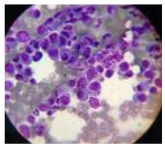
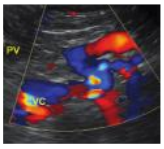
Gastrointestinal

The stomach presented intact wall layering with a normal wall layer ratio. The lumen of the stomach contained mild echogenic, nonshadowing ingesta, sonographically consistent with food, without signs of obstruction or foreign material.

The small intestine presented intact wall layering with 1:3 muscularis/mucosa ratio. Minor segmental similar-appearing ingesta / chyme was noted with no evidence of an obstructive pattern.





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Normal visible colon wall layers were present with apparent formed feces in lumen.

Pancreas

The pancreas was mildly prominent in size with minor capsule asymmetry exhibiting heterogeneous mildly hypoechoic parenchyma compared to adjacent omentum. Pancreatic duct dilation was noted.

Free Abdomen

Intermittent mesenteric lymph nodes were present. The lymph nodes were essentially isoechoic to adjacent omentum without evidence of peripheral inflammation and maintaining a normal width: length ratio (<0.5). No omental masses or peritoneal effusion were noted.

ULTRASONOGRAPHIC FINDINGS

- Mild LA/RA enlargement
- Normal LV function with myocardial remodeling / fibrosis
- MR / TR with mild aortic insufficiency
- Pleural effusion
- Urinary bladder sediment
- Bilateral marked chronic degenerative kidneys with mild pyelectasia
- Mild hepatomegaly with cystic-appearing intraparenchymal mass - subjectively benign, cystic mass suggestive of benign cystic biliary adenoma
- Mild chronic pancreatitis pattern

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

The cardiac presentation exhibited evidence of some degree of cardiomyopathy as indicated by mild biatrial enlargement, yet normal LV function. The cardiac presentation was not overtly consistent with definitive cardiogenic pleural effusion, which may be multifactorial potentially secondary to some degree of cardiomyopathy combined with decreased renal function and current IV fluid therapy.

Pimobendan 0.3 mg/kg PO BID is suggested. Diuretic therapy may be precluded, given the degree of azotemia and renal presentation. If possible, correlation with pleural effusion analysis, cytology +/- C/S, if clinically indicated, is recommended. Continued empirical CKD therapy with UTI protocol and monitoring of systemic BP would be reasonable. A very guarded prognosis, given evidence of significant renal disease combined with possible emerging cardiomyopathy.

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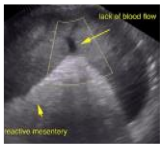

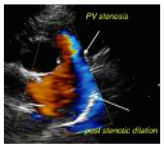

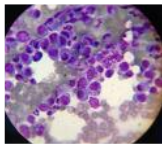
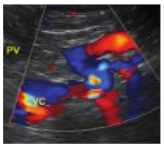

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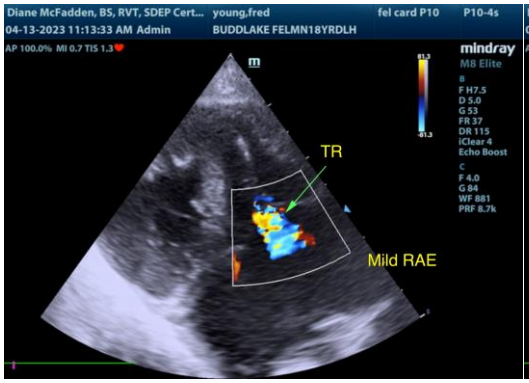

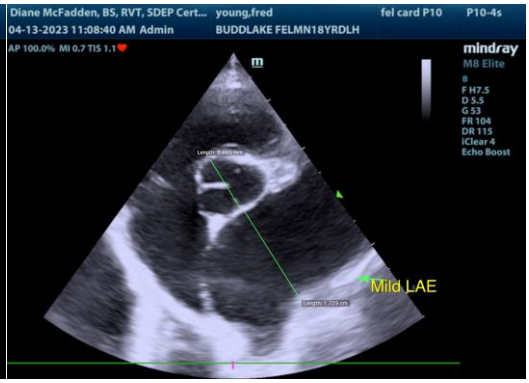

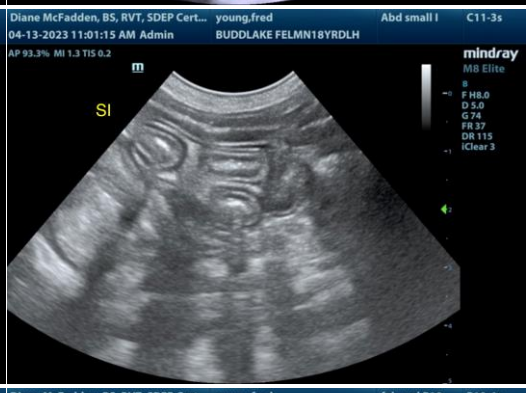

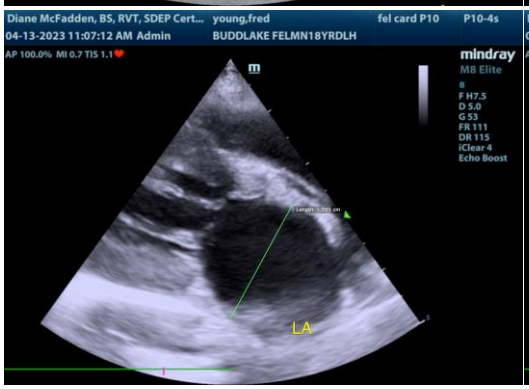

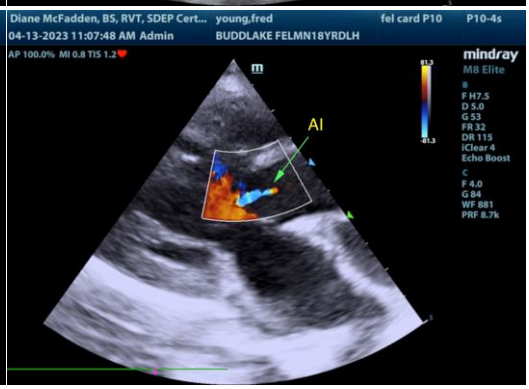

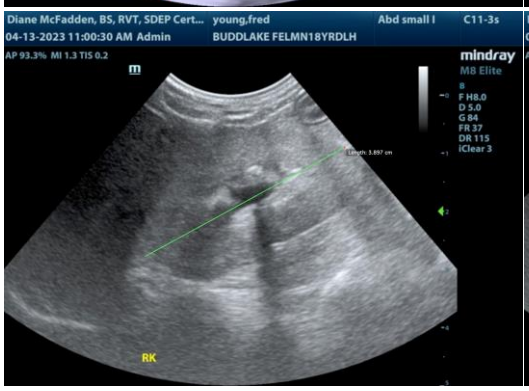

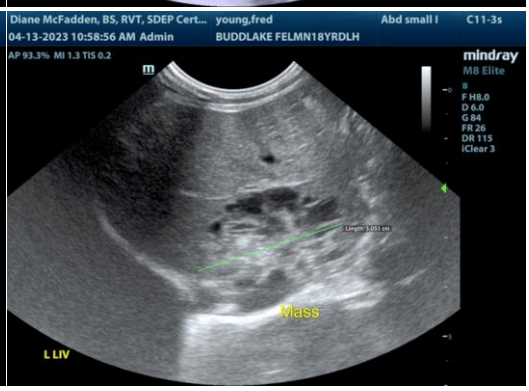

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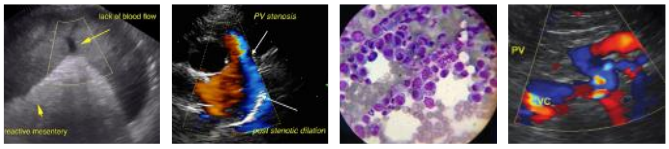

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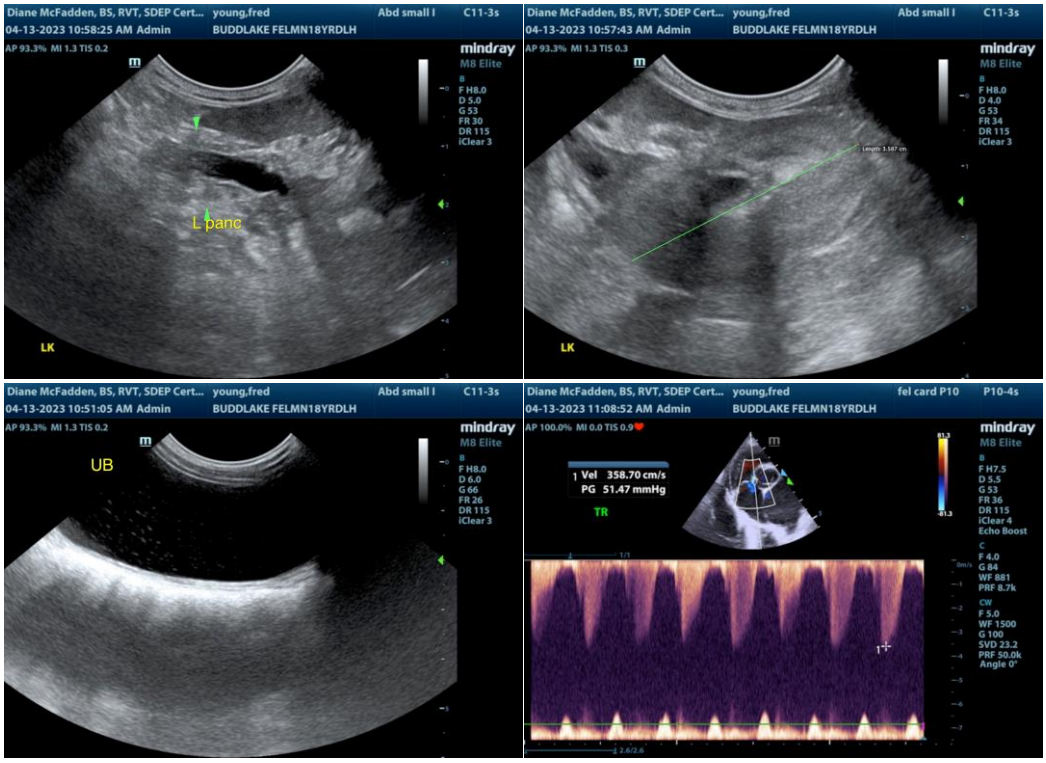

The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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.

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