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Clinical Sonography & Telecytology
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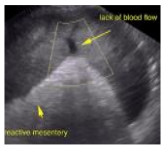
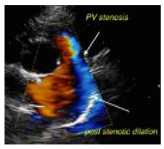
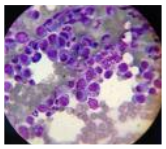
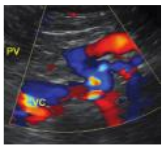

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1-800-838-4268 info@sonopath.com

PATIENT

Dufu Zi

SPECIES

Feline

BREED

DSH

SEX

MN

AGE

4

WEIGHT

8.4

INTERPRETED BY

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

IMAGING PERFORMED BY

Dr. Sharkaway

HOSPITAL NAME

Kew Gardens Animal Hospital

REFERRING VET

Dr. Sharkaway

INVOICE

12928ag

DATE

02/07/2023

PRESENTING CLINICAL SIGNS

History of collapse, PANTING Meowing IN pain sometimes No vomiting, no diarrhea

Abnormal PE/Chem/CBC/UA Results: proBNP–positive No heart murmur

ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN AND 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		NM	0.44	1.70	0.4	35.3	70
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		1.66	1.8		NM	0.84	

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 left ventricular wall exhibited mild myocardial remodeling with regions of subtle asymmetry. Normal septal and free wall thickness. Subtle non-uniform hyperechoic endocardium was present which may suggest fibrosis. Concurrent mildly prominent to remodeled papillary muscles were noted. LV systolic function is adequate yet subjectively decreased, LV/RV were both borderline dilated. The LA was mildly dilated and slightly bulbous in appearance. No overt evidence of spontaneous contrast or smoke. The RA exhibited concurrent mild dilation. No evidence of RA spontaneous contrast or smoke. The mitral valve was normal without overt SAM. Trace centralized MR present on Doppler with no obvious TR. Blood flow through both the LVOT and RVOT was laminar on color flow assessment. Normal measured RVOT velocity. No evidence of pericardial or pleural effusion. No obvious cardiac tumors. No overt arrythmia, possible bradycardia.

Urinary System

The urinary bladder, trigone, cystourethral junction, and visible pelvic urethra exhibited normal thickness and tone. Anechoic urine was present in the lumen with no uroliths or sediment. The ureteral papillae were normal. The ureters were not visible which is normal. No evidence of inflammatory or neoplastic changes were noted.

Normal size and margination were present in the kidneys. A normal 1:3 cortex / medulla ratio and normal corticomedullary definition were maintained. The echogenicity of the cortex was similar to or slightly less than normal liver parenchyma while the medulla echogenicity was hypoechoic to the cortex with no evidence of pelvic dilation. The left kidney measured 3.5 cm in length. The right kidney measured 3.7 cm in length.

The area of the aortic trifurcation was free of pathology.

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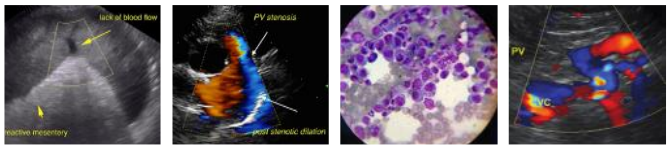

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Adrenal Glands

The left and right adrenal glands were not definitively visualized. No obvious pathology was present in the area of the bilateral adrenal glands.

Spleen

The spleen exhibited a finely textured and homogenous parenchyma which was hyperechoic to the liver and renal cortical parenchyma. 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. Acute to chronic inflammatory, neoplastic, or benign parenchyma changes were not noted. The spleen measured 0.75 cm in width at the level of the hilus.

Liver/Gallbladder

The liver was subjectively normal in size, structure, and contour. The liver parenchyma was uniform and hypoechoic to the spleen with a mild coarse echotexture. The hepatic and portal vasculature were normal in appearance without signs of congestion. Normal hepatic vascular volume was present. Overtly normal cranial abdominal caudal vena cava without evidence of distension.

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 non-shadowing ingesta likely indicating recent meal ingestion with no signs of ileus, obstruction or foreign material.

The small intestine presented intact wall layering with segmental mildly prominent jejunal muscularis layer. The lumen of the small intestine was empty with no signs of ileus, obstruction or foreign material. The jejunum wall measured 0.29-0.30 cm width.

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

Pancreas

The parenchyma of the left limb, body and right limb of the pancreas presented isoechoic to the adjacent omental fat. A normal curvilinear capsule contour of the pancreas was present. The visible pancreatic duct was normal. No signs of active inflammation or neoplastic disease was evident.

Free Abdomen

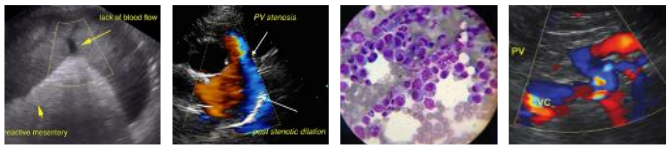
No omental masses, overt lymphadenopathy or peritoneal effusion was present.

ULTRASONOGRAPHIC FINDINGS

- Mild LA/RA enlargement, no evidence of spontaneous contrast/smoke
- Normal LV wall thickness with minor LV myocardial remodeling
- Adequate yet subjective mild subnormal LV contractility
- Segmental intact mildly prominent jejunal walls

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

The finding of mild biatrial enlargement with normal LV wall thickness may suggest unclassified cardiomyopathy. No overt evidence of HCM criteria. The lack of significant left/right heart chamber enlargement was not overtly consistent with cardiogenic pulmonary edema and without evidence of



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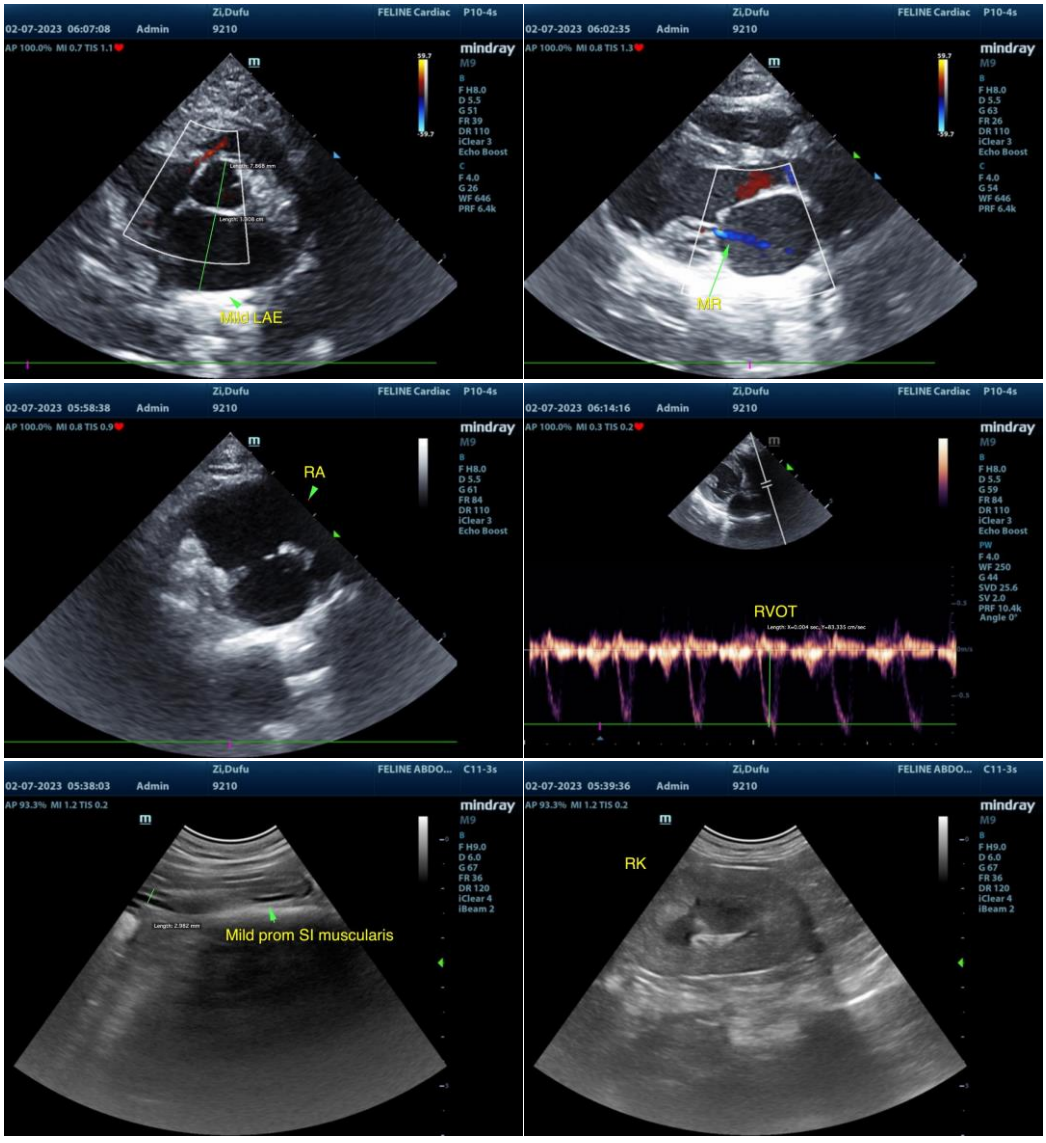
pleural or pericardial effusion. Underlying primary cardiac disease as a contributing factor to the reported episodes of collapse and panting is suspected. Lowest effective dose diuretic therapy i.e., Lasix 1-2 mg/kg PO BID +/- off label Pimobendan 0.3 mg/kg PO BID and assessment of clinical response with echocardiographic monitoring is warranted. ECG assessment, assessment of systemic BP to rule out hypertension as a contributing factor and monitoring of renal parameters if diuretic therapy is instituted is recommended. Recheck echocardiogram recommended in 4-6 months, sooner if episodes of CHF, progressive collapsing episodes or panting are noted. A likely guarded log term prognosis is indicated.

The intact mildly prominent jejunal walls are non-specific with potential for patient variant given lack or reported GI signs or weight loss. The possibility of emerging intestinal inflammatory process or less likely infiltrative neoplasia cannot be definitively excluded. Monitoring for GI signs or weight loss and potential recheck sonogram is suggested.



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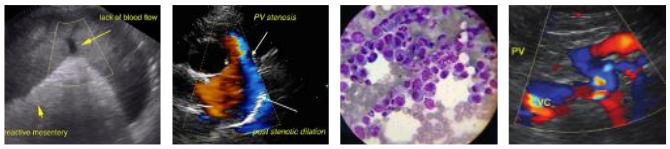

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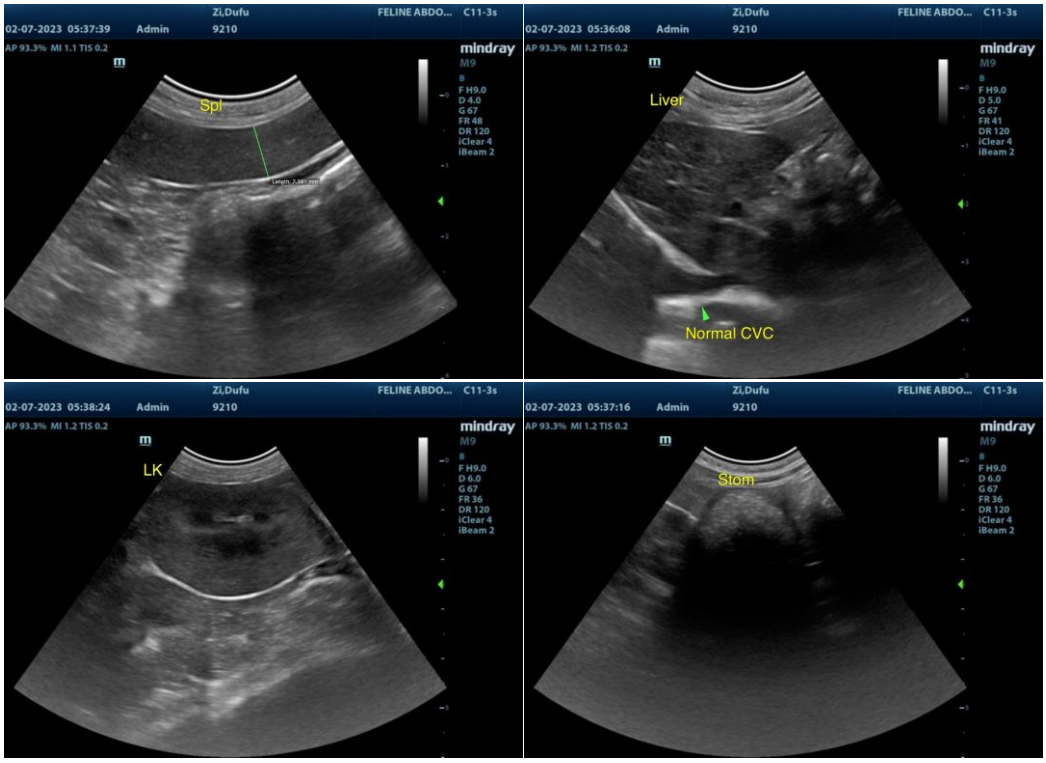

The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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.

R. McKenzie Daniel, DVM, DABVP (Canine/Feline Practice)
mac.daniel@sonopath.com