



PATIENT PRESENTING CLINICAL SIGNS

Trouble Scarano

Cardiomegaly (had pleural effusion drained at Emergency Clinic). Hepatomegaly. R/o cardiac disease +/- abdominal neoplasia. Current meds: mirtazapine, lasix 12.5mg 1/2 tab BID
Abnormal PE/Chem/CBC/UA Results: CBC: neut 95,000 all else WNL T4 1.1, Chem: CPK 812

SPECIES

Feline

BREED

DSH

SEX

Neutered Male

AGE

11 Years

WEIGHT

11.4 Pounds

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		239	0.60	1.2	0.55	53.5	87.8
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	1.36	1.4	1.35	<2.0	1.1	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. 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). No visible **pericardial** fluid was present with mild to moderate pleural fluid noted. The pleural fluid appeared to be primarily anechoic. The cranial **mediastinum** and **pericardial** regions were free of overt masses in the visible window.

Urinary System

The urinary bladder, trigone, cystourethral junction, and visible pelvic urethra to a depth of 2.0 cm 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.

INVOICE

25720

DATE

9/22/21

INTERPRETED BY

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

IMAGING PERFORMED BY

Jessica Miller

HOSPITAL NAME

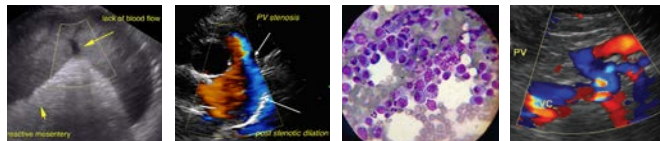
Byram AH

REFERRING VET

Dr. Cruz



PATIENT	be hypertrophied resulting in an altered cortex: medulla ratio. Mild loss of corticomedullary distinction was also present. The renal medullary volume was subjectively reduced. The left kidney measured 4.2 cm. The right kidney measured 3.2 cm.
Trouble Scarano	
SPECIES	The area of the aortic trifurcation was free of pathology.
Feline	Adrenal Glands
BREED	The adrenal glands were uniform in size and contour with a uniformly hypoechoic parenchyma. The left adrenal gland measured 0.46 cm in width. The right adrenal gland measured 0.41 cm in width.
DSH	Spleen
SEX	The spleen was subnormal in size, likely owing to volume contraction. It 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.
Neutered Male	
AGE	Liver
11 Years	The liver exhibited generalized enlargement with normal overall hepatic parenchyma echogenicity with moderate coarse echotexture. Subjective increased prominence of the hepatic vasculature was noted, most notable in the area of the hepatic vein/caudal vena cava junction. The cranial abdominal caudal vena cava at the level of the liver and diaphragm also appear to be mildly prominent. No overt evidence of vena cava thrombosis. The gallbladder was non-distended in size with thin walls and primarily anechoic luminal content. The cystic and common bile ducts were normal.
WEIGHT	
11.4 Pounds	Gastrointestinal
INTERPRETED BY	The stomach presented intact wall layering with a normal wall layer ratio. The lumen of the stomach was empty with no signs of ileus, obstruction or foreign material. Gastric body wall measured 0.26 cm.
R. McKenzie Daniel, DVM, DABVP (Canine and Feline)	The small intestine presented intact wall layering with subjective propensity for segmental mild prominent muscularis layer. The lumen of the small intestine was empty with no signs of ileus, obstruction or foreign material. Jejunum wall measured up to 0.29 cm.
IMAGING PERFORMED BY	Normal visible colon wall layers were present with apparent formed feces in lumen.
Jessica Miller	Pancreas
HOSPITAL NAME	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.
Byram AH	
REFERRING VET	Free Abdomen
Dr. Cruz	Several enlarged mid to cranial mesenteric lymph nodes were present. Example of colic lymph node measured 1.0 cm x 0.78 cm. These lymph nodes were homogenous, mildly hypoechoic and smoothly marginated. A normal width: length ratio was maintained (<0.5). Subtle generalized, primarily uniform reactive mesentery was present. Small pockets of concurrent peritoneal free fluid noted.
INVOICE	
25720	ULTRASONOGRAPHIC FINDINGS
DATE	<ul style="list-style-type: none"> • Normal echocardiogram - non-cardiogenic effusion • Pleural effusion with scant concurrent peritoneal effusion
9/22/21	



PATIENT

Trouble Scarano

- Bilateral interstitial nephrosis renal pattern – chronic renal changes versus potential non-specific nephritis such as interstitial nephritis or other.

SPECIES

Feline

- Hepatomegaly with subjective prominent hepatic vessels – possible congestive hepatopathy.
- Possible mild inflammatory enteropathy
- Intermittent, non-specific yet hypoechoic mesenteric lymph nodes – hyperplasia, reactive lymphadenitis, or early neoplastic lymphadenopathy possible.

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INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

This is an interesting case. The overtly normal cardiac structure and function without evidence of left or right heart chamber enlargement and normal systolic function indicate that the effusion in this patient is non-cardiogenic in origin. However, the subjective mildly prominent hepatic veins in addition to hepatomegaly may suggest congestion potentially owing to a non-obvious cause of decreased venous return. Thromboembolic disease or neoplasia may be possible, while other causes of non-cardiogenic effusion such as infectious inflammatory disease, FIP or other may be possible. Non indication for cardiac medications. Effusion analysis, cytospin cytology +/- culture and sensitivity if evidence of inflammatory cells recommended. Assuming normal clotting status, hepatic +/- lymphatic FNA (if accessible) could be considered for screening cytology. Advanced imaging such as CT (if possible) would be ideal for further assessment.

SonoPath CT Services are offered at the [Blairstown Animal Hospital](https://www.blairstownanimalhospital.com/). Blairstown animal hospital is just a 30-minute drive west on route 80 from the route 80/287 interchange/Parsippany, New Jersey. More information can be found at:

<https://sonopath.com/resources/sonopaths-teleconsultation-services-and-sdep-certification/sonopath-ct-services>

INTERPRETED BY

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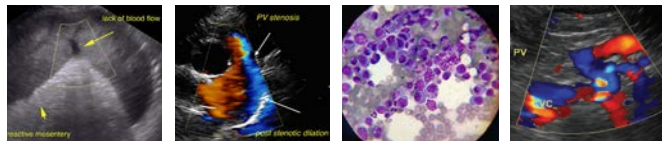
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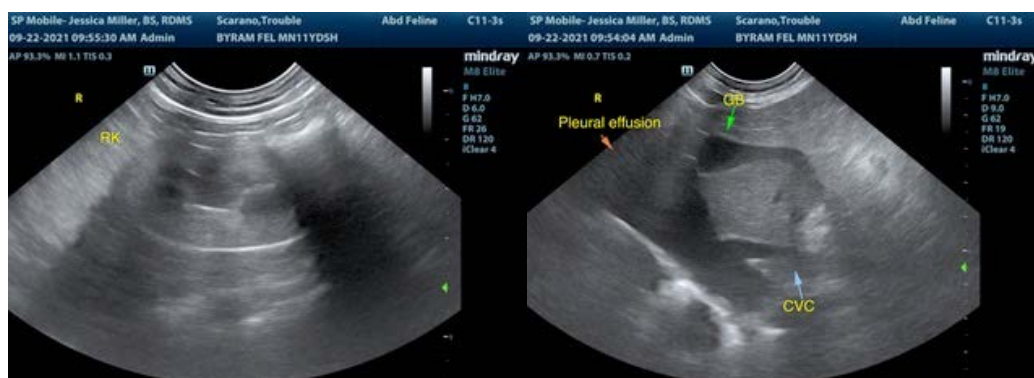
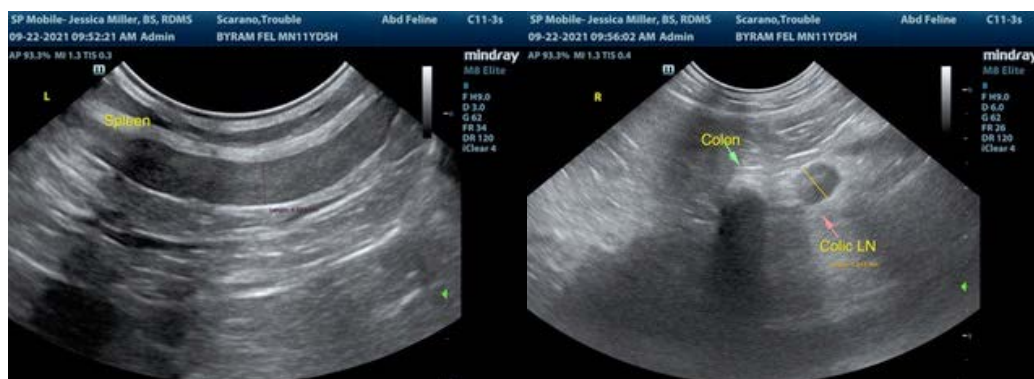
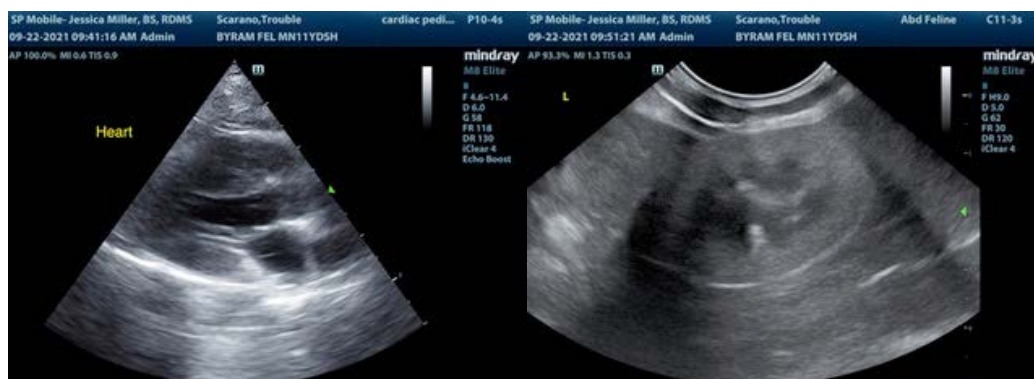
Dr. Cruz

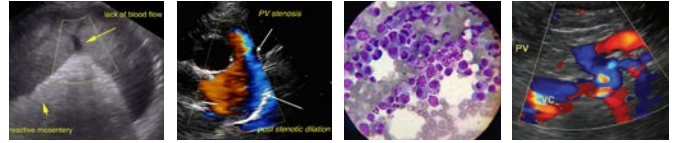
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The information and recommendations provided are based on the images presented by the referring veterinarian. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

SPECIES

Feline

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)
info@SonoPath.com

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