


PATIENT

Sienna Dreyer

PRESENTING CLINICAL SIGNS

heart murmur 2/3 (has had for years); elevated BP, elevated liver enzymes, vomiting. on amlodipine.

SPECIES

Feline

Abnormal PE/Chem/CBC/UA Results: AST 147, ALT 424, bilirubin 0.6, PSL 41; UA: protein +1, bilirubin; USPG 1.041

ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN AND HEART
BREED

DSH

SEX

FS

AGE

17yr

WEIGHT

7.7lb

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		205	0.33	1.3	0.31	44.6	79.3
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	1.0	1.1	1.1		0.8		
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

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

IMAGING PERFORMED BY

Diana McFadden

HOSPITAL NAME

 Animal Hospital of
 Roxbury

REFERRING VET

Dr. Hickenbottom

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 with evidence of minor age-related myocardial remodeling. 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 or free pleura fluid was noted or extra cardiac pathology in the visible planes. The cranial mediastinum and pericardial regions were free of masses in the visible window.

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. A small to discrete homogeneous lesion at the level of the cystic urethral junction was present measuring ~ 0.22 cm in diameter. This lesion did not appear to be obstructive. The ureteral papillae were normal. The ureters were not visible which is normal. No evidence of inflammatory or neoplastic changes were noted.

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PATIENT	Normal size and margination was present in the kidneys. A normal 1:3 cortex / medulla ratio was maintained. The medulla and cortices were uniform in texture with some increased echogenicity and mild loss of corticomedullary symmetry and definition expected for the age of the patient. No evidence of pelvic dilation was present. The left kidney measured 3.8 cm in length. The right kidney measured 3.5 cm in length.
Sienna Dreyer	
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Feline	The area of the aortic trifurcation was free of pathology.
	Adrenal Glands
BREED	
DSH	The left adrenal gland was uniform in size and contour with a uniformly hypoechoic parenchyma. The left adrenal gland measured 0.33 cm width. The right adrenal gland was uniform in size and contour with a uniformly hypoechoic parenchyma. The right adrenal gland measured 0.33 cm width.
SEX	
FS	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.
AGE	
17yr	Liver
	The liver presented mildly increased in size. The parenchyma of the liver was subjectively mildly increased in echogenicity compared to the spleen and renal cortices. The echotexture of the liver parenchyma was uniform with a mild coarse echotexture. The capsule of the liver was symmetrical in margination. The hepatic and portal vasculature were normal in appearance without signs of congestion.
WEIGHT	
7.7lb	The gallbladder was non-distended in size with primarily anechoic luminal content. The proximal common bile duct was dilated and tortuous without overt post hepatic obstruction measuring 0.34 cm.
INTERPRETED BY	
R. McKenzie Daniel, DVM, DABVP (Canine and Feline)	Gastrointestinal
	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. The gastric body wall measured 0.26 cm in width.
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Diana McFadden	The intestinal walls demonstrated intact wall layers with diffusely thickened walls and altered 1:3 muscularis / mucosa ratio primarily consisting of muscularis hypertrophy. The small intestinal wall measured 0.34 cm width.
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	The pancreas exhibited generalized prominent size, areas of capsule asymmetry, non-homogeneous to focally hypoechoic parenchyma and intermittent small cysts and pancreatic duct dilation.
	Free Abdomen
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	Intermittent to multiple, mildly prominent to enlarged mesenteric nodes were present. The lymph nodes were essentially isoechoic to adjacent omentum with minor evidence of peri-intestinal hyperechoic mesentery.
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ULTRASONOGRAPHIC FINDINGS

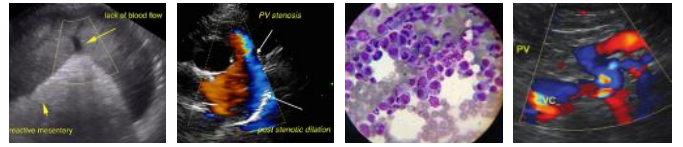
- Normal echocardiogram
- Small lesion at the level of the cystourethral junction
- Mild chronic renal changes
- IBD small bowel pattern with mild benign/reactive mesenteric lymphadenopathy
- Chronic pancreatitis
- Cholangitis/cholangiohepatitis liver pattern

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

No structural or functional cardiomyopathy was present in this scan. A definitive cause of the patient's murmur was not evident without clinical issues such as left or right chamber enlargement, LV systolic dysfunction or overt valvular insufficiencies. If no volume changes such as dehydration or anemia, a benign physiologic flow murmur or small flow abnormality is suspected. No indication for cardiac medications. Continued monitoring of the murmur is recommended.

The lesion at the level of the cystourethral junction is non-specific, emerging tumor cannot be excluded. Sonographic monitoring of the lesion with initial recheck in 4-6 weeks with monitoring for evidence of stranguria is recommended.

Triad disease may be considered a top differential in this patient. Minor potential for hepatopancreatic and small bowel neoplastic disease. Full thickness intestinal and hepatopancreatic biopsies required for definitive diagnosis. Assuming normal clotting status and using a 25g needle a hepatic FNA is recommended for screening cytology. A GI panel to include PLI/TLI/Cobalamin/Folate is recommended.



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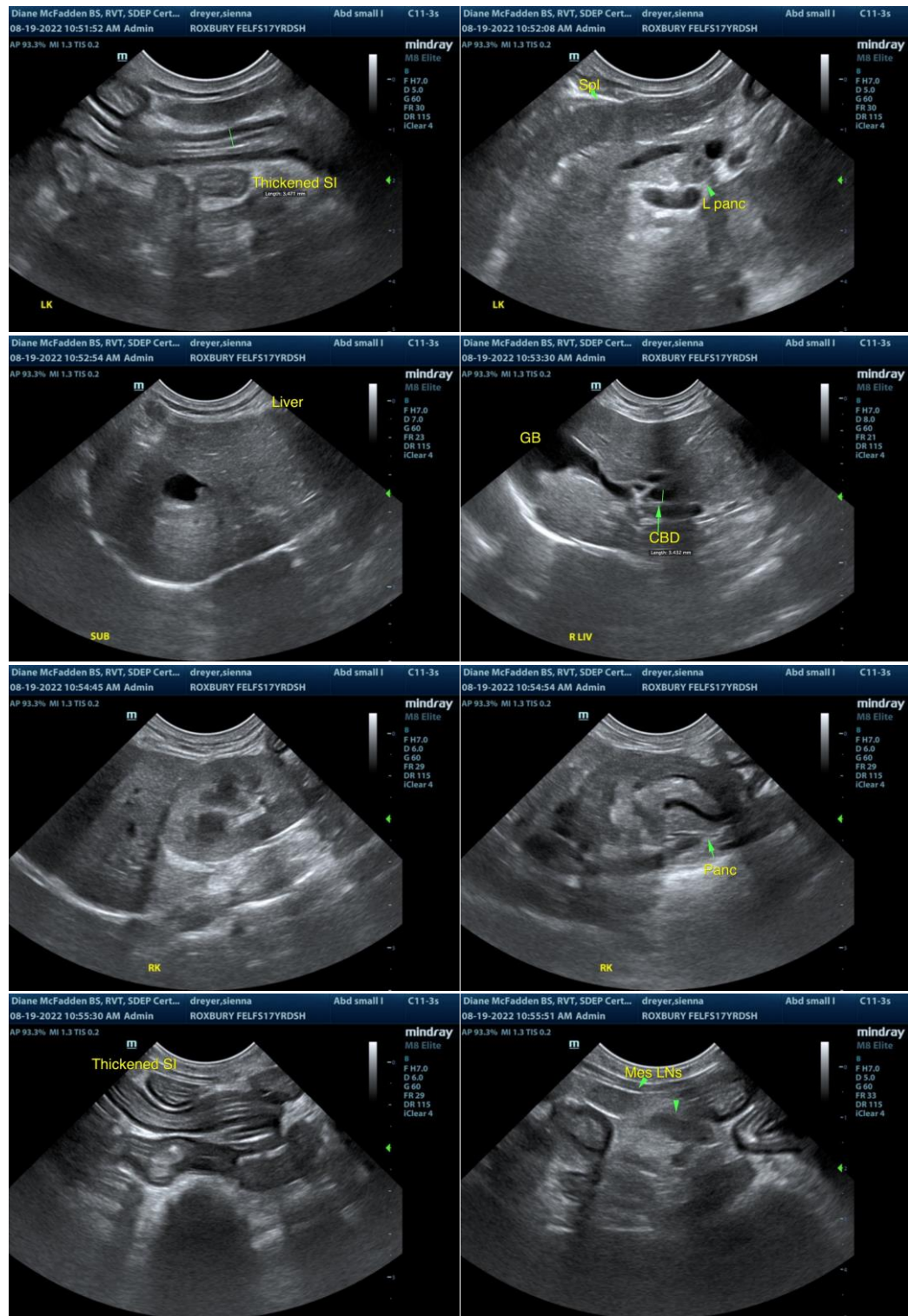
Dr. Hickenbottom

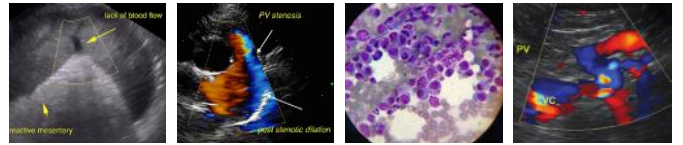
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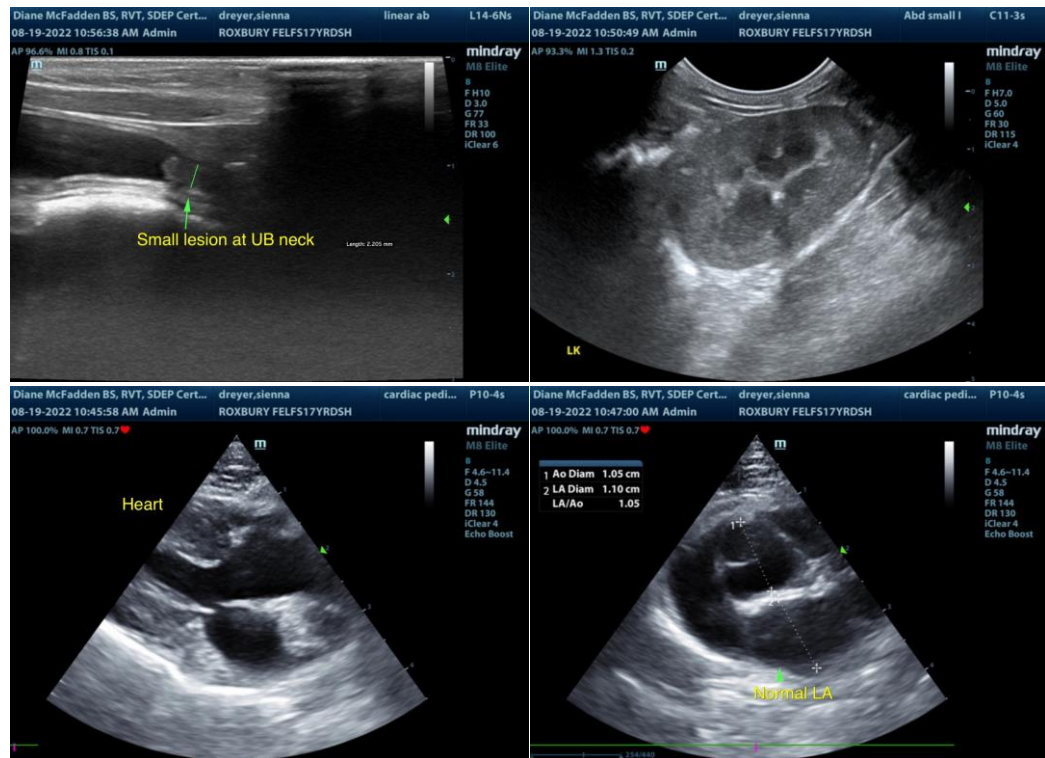
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The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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)

info@SonoPath.com