
PATIENT PRESENTING CLINICAL SIGNS

Patient: Ralphie Haworth History: New heart murmur, frequent vomiting

Species: Feline Abnormal PE/Chem/CBC/UA Results: T4 in grey range Heart Rate and Respiratory Rates n/a Blood Pressure Measurements n/a Current Medications omeprazole daily

ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN AND HEART

BREED	FELINE CARDIAC PARAMETERS	BODY WEIGHT (kg)	HR (BPM)	IVSd (cm)	LVIDd (cm)	LVWd (cm)	FS (%)	EF (%)
Persian	NORMAL PARAMETER	-----	150-240	0.3-0.6	1.0-2.1	0.25-0.6	35-67	80-100
SEX	PATIENT		232	0.53	1.78	0.45	57.3	91.8
MN	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/)
AGE								
9 yr	NORMAL PARAMETER	<1.5	0.88-1.79	0.7-1.7		<1.6	<1.3	40-60
WEIGHT	PATIENT	1.55	1.5	1.45		1.1	1.6	
9.5 lb	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)

Cardiac Presentation

The echocardiogram in this patient demonstrated normal left atrial size and structure. Chamber volume and blood echogenicity were normal. The cranial and caudal mitral valve leaflets presented mild irregular age-related changes with suspect systolic anterior motion (SAM) of the mitral valve and with minor MR on Doppler. The left ventricle presented normal free wall and septal thicknesses with mild a linear contour. The myocardium presented some echogenic remodeling which may indicate mild LV myocardial fibrosis. Mildly prominent to remodeled papillary muscles were present. Contractility of the ventricular walls was adequate and in normal range for this breed and patient size. The left ventricular outflow tract demonstrated mildly dynamic to turbulent systolic flow with normal structure. normal laminar flow with subjectively unremarkable structure. Subjective assessment of the right atrium and auricle revealed normal size, structure and content. No evidence of masses was noted. Tricuspid valvular assessment demonstrated expected findings for this age patient. The right ventricle was of normal size (1/3 diameter of LV), 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 pleural fluid was noted. The mediastinum was free of masses in the visible window.

Urinary System

The urinary bladder, trigone, cystourethral junction, and visible pelvic urethra to a depth of 2 cm exhibited normal thickness and tone. Anechoic urine was present in the lumen with mild

IMAGING PERFORMED BY

Sara Hansen

HOSPITAL NAME

Willakenzie Animal Clinic

REFERRING VET

Dr. DeWall

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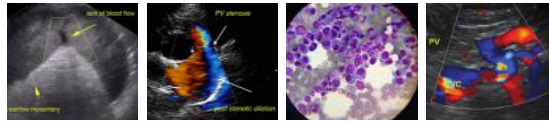
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DATE

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PATIENT	nondependent mildly hyperechoic sediment. The ureteral papillae were normal. The ureters were not visible which is normal. No evidence of inflammatory or neoplastic changes were noted.
Ralphie Haworth	
SPECIES	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 minor loss of corticomedullary symmetry and definition expected for the age of the patient. No evidence of pelvic dilation was present. The left kidney measured 3.6 cm in length. The right kidney measured 3.6 cm in length.
Feline	
BREED	The area of the aortic trifurcation was free of pathology.
Persian	
SEX	Adrenal Glands
MN	The left adrenal gland was uniform in size and contour with a uniformly hypoechoic parenchyma. The left adrenal gland measured 0.57 cm width. No overt pathology in the area of the right adrenal gland.
AGE	Spleen
9 yr	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.
WEIGHT	Liver
9.5 lb	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. The gallbladder was non-distended in size with thin walls and primarily anechoic luminal content. The cystic and common bile ducts were normal.
INTERPRETED BY	Gastrointestinal
R. McKenzie Daniel, DVM, DABVP (Canine and Feline)	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.
IMAGING PERFORMED BY	The small intestine presented intact wall layering with subjective propensity for mildly prominent muscularis layer. The lumen of the small intestine was empty with no signs of ileus, obstruction or foreign material. The jejunum wall measured 0.25 cm in width.
Sara Hansen	Normal visible colon wall layers were present with apparent formed feces in lumen.
HOSPITAL NAME	Pancreas
Willakenzie Animal Clinic	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.
REFERRING VET	Free Abdomen
Dr. DeWall	No omental masses, overt lymphadenopathy or peritoneal effusion was present.
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PATIENT

Ralphie Haworth

SPECIES

Feline

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Persian

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ULTRASONOGRAPHIC FINDINGS

- LV myocardial remodeling
- Possible mild SAM
- Normal left atrium
- Minor MR
- Intact yet segmentally prominent small bowel walls
- Sonographically unremarkable stomach
- Minor age related kidney changes

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

Overall normal cardiac function was observed. The cause of the murmur was not overtly evident and may be a physiologic benign or flow murmur potentially associated with mild SAM and secondary turbulent to dynamic LV outflow. The lack of left or right heart chamber enlargement and normal overall LV function indicate that the hemodynamic effects of the murmur are low. No indication for cardiac medications. Conservative monitoring of the murmur at this stage would be reasonable. Recheck echocardiogram recommended in 6 months, sooner if clinical signs arise or if murmur intensity increases.

Continued monitoring of T4 levels is suggested.

The small intestine exhibited mild mural changes which are suggestive for inflammatory enteropathy and potential for IBD. No other evidence of gastric mural abnormalities or active pancreatitis were noted. Potential for low grade to chronic pancreatitis could be present yet be sonographically normal. A GI panel to include PLI/TLI/Cobalamin/Folate is recommended for further assessment. In addition to gastric protectants, a hydrolyzed diet trial +/- prophylactic deworming if the patient is indoor/outdoor and assessment of clinical response would be reasonable.



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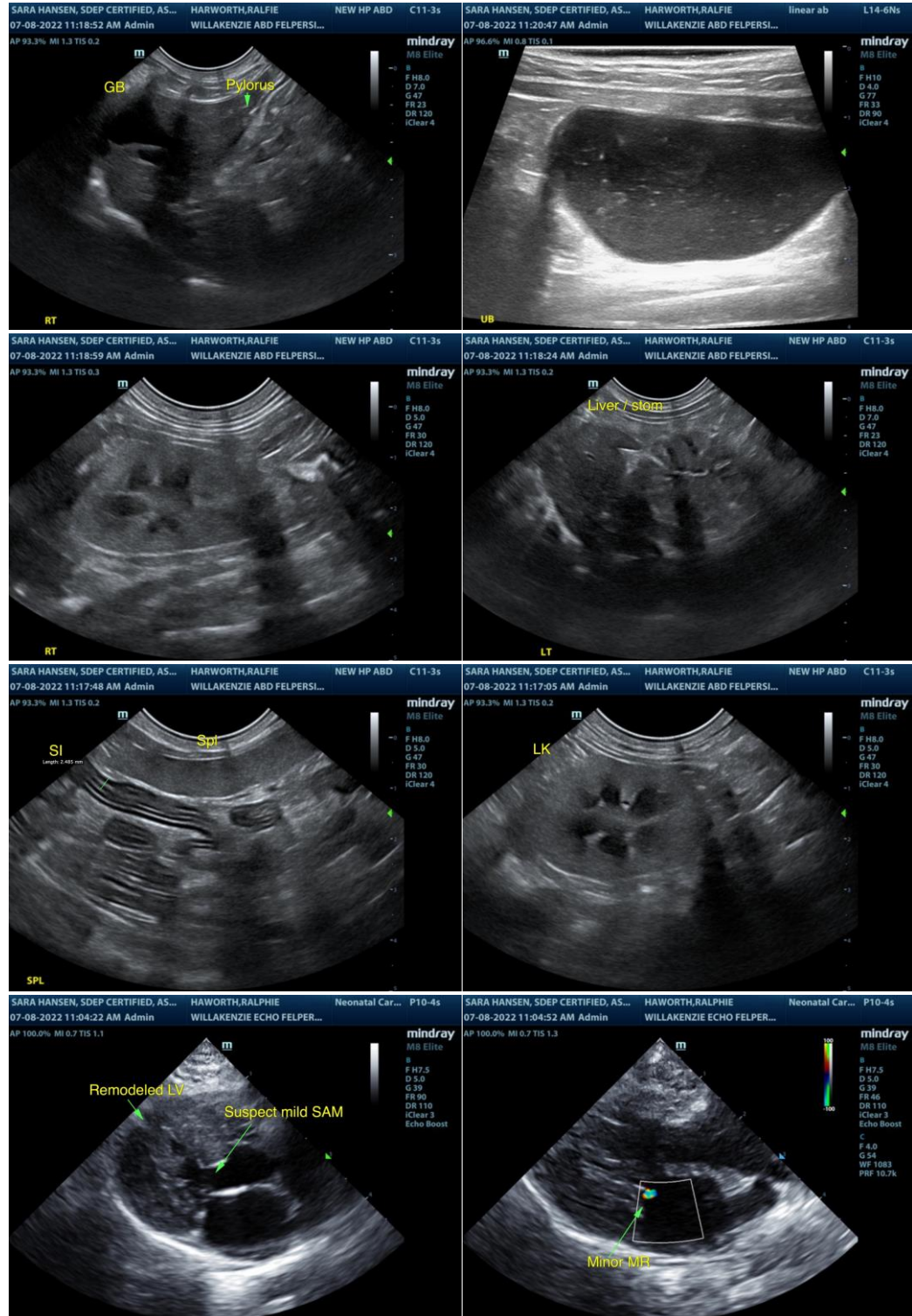
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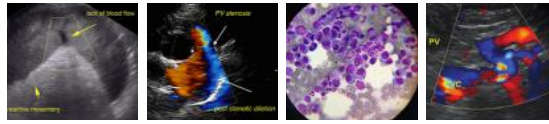
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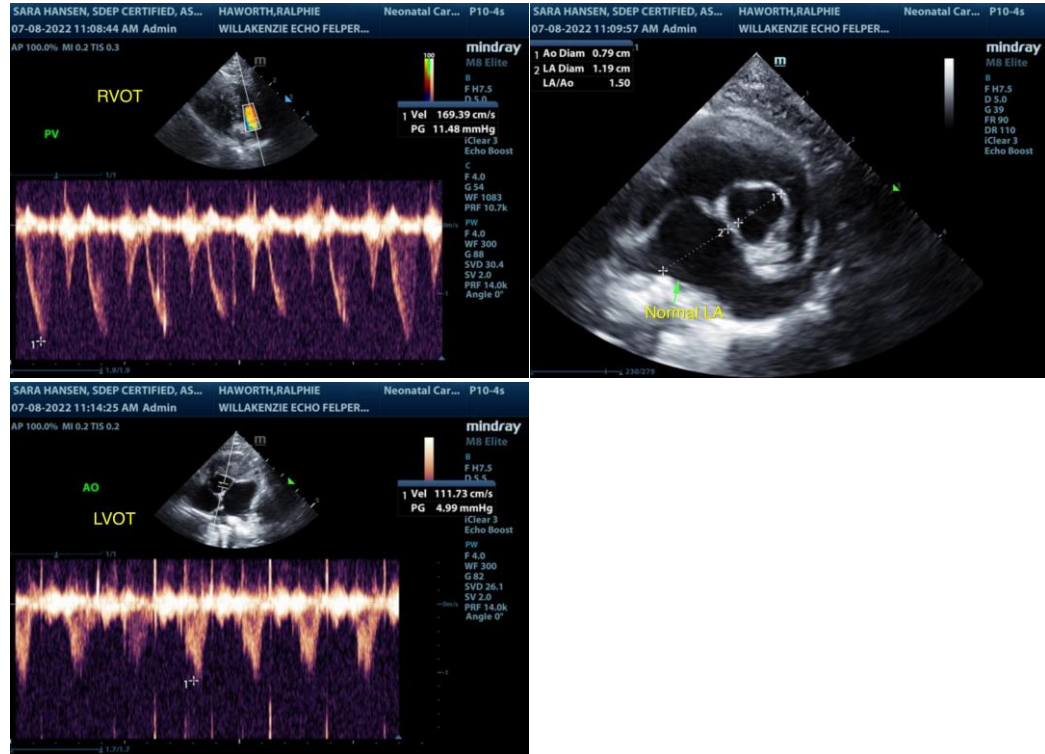
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The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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.

R. McKenzie Daniel, DVM, DABVP (Canine / Feline Practice)

info@SonoPath.com