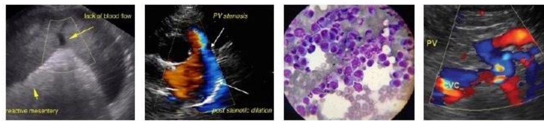

PATIENT

Tiger Lily Fife

SPECIES

Feline

BREED

DSH

SEX

FS

AGE

16 years

WEIGHT

4.45 kg

INTERPRETED BY

R. McKenzie Daniel, DVM, DABVP

IMAGING PERFORMED BY

Crystal Hill

HOSPITAL NAME

Haldimand AH

REFERRING VET

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INVOICE

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PRESENTING CLINICAL SIGNS

Dermal lesions around neck and rostral nose/muzzle Abdomen : doughy, fluidy feel, mild distention Bilat grade 5/6 heart murmur Lungs clear

Abnormal PE/Chem/CBC/UA Results: Glucose 14.2 Urea 17.6 Calcium 3.0 Chloride 112 ALP 145 Rads: R lat chest/ab - increased pulmonary opacity cr lung field and perihylar area SI incr liver size from prev rad (Mar 2022). R? kidney small and nodular appearance

ULTRASONOGRAPHIC EXAMINATION OF THE HEART & ABDOMEN

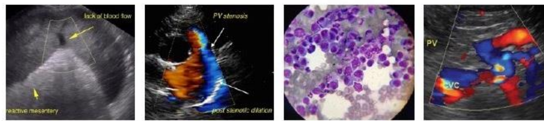
FELINE CARDIAC PARAMETERS	BODY WEIGHT (kg)	HR (BPM)	IVSd (cm)	LVIDd (cm)	LVWd (cm)	FS (%)	EF (%)
NORMAL PARAMETER	------	150-240	0.3-0.6	1.0-2.1	0.25-0.6	35-67	80-100
PATIENT		193	0.58	1.37	0.6	49.6	84.6

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		1.4	1.4	1.0	0.5	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 and structure with no evidence of "smoke" or thrombi. The cranial and caudal **mitral** valve leaflets appeared mildly thickened with some insufficiency noted on Doppler. The **left ventricle** presented borderline increased free wall and septal thicknesses with subjective borderline hypertrophic tendency compared to normal LV myocardial thickness for this species. The **myocardium** presented essentially normal echogenicity without immediate signs of fibrotic or ischemic disease. **Contractility** of the ventricular walls was considered excessive for this patient evidenced by the elevated fractional shortening measurement. The **left ventricular outflow** tract demonstrated subjective laminar systolic flow. Subjective assessment of the **right atrium** and auricle revealed normal size, structure and content. No evidence of masses was noted. **Tricuspid** valvular assessment demonstrated linear morphology. The **right ventricle** was of normal size with normal chordae structure, myocardial echogenicity and



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thickness. **Pulmonic** tract assessment revealed normal valve structure, laminar flow, and diameter. No visible **pericardial** or free pleura fluid was noted. No echographically detectable evidence of infiltrative disease was visible. 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 was noted.

The area of the aortic trifurcation was free of pathology.

A normal 1:3 cortex / medulla ratio was maintained in the bilateral kidneys. The medulla and cortices were uniform in texture with some increased echogenicity and moderate loss of corticomedullary symmetry and definition expected for the age of the patient. Both kidneys exhibited minor areas of medullary mineral. No evidence of pyelectasia was present. The left kidney was mildly subnormal in size compared to the right with probable cortical infarcts measuring 3.2 cm in length. The right kidney measured 4.3 cm in length.

Adrenal Glands

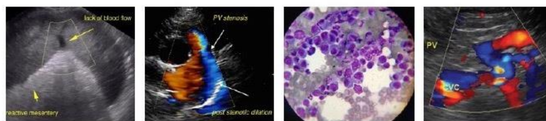
A spherical primarily homogeneous mildly hypoechoic mass was present in the area of the left adrenal gland measuring 2.6 cm x 1.7 cm. No evidence of parenchymal mineralization was noted. No overt pathology was noted in the area of the right adrenal gland. The right adrenal gland subjectively measured 0.54 cm width.

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 0.78 cm width at the level of the hilus.

Liver/ Gallbladder

The liver exhibited subjective mild enlargement. The parenchyma of the liver was subjectively 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. Intermittent nondisruptive isoechoic nonhomogeneous to mildly cystic intraparenchymal nodules were present with an example measuring 1.8 cm in diameter. The gallbladder was non-distended in size containing mild, nonorganized gallbladder debris. No evidence of gallbladder or peripheral gallbladder inflammatory criteria was noted. The cystic and common bile ducts were normal.



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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 small intestine presented intact wall layering with 1:3 muscularis/mucosa ratio. The lumen of the small intestine was empty with no signs of ileus, obstruction, or foreign material.

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

Pancreas

The pancreas exhibited normal size with areas of mild capsule asymmetry. Mildly echogenic to nonhomogeneous parenchyma was noted with mild pancreatic duct dilation.

Free Abdomen

No omental masses or evidence of peritoneal free fluid were noted.

ULTRASONOGRAPHIC FINDINGS

- Borderline thickened LV
- Normal left atrium
- Minor MR
- Mass in area of left adrenal gland
- Bilateral chronic renal changes exhibiting minor medullary mineralization
- Mild hepatomegaly with several to multiple cystic intraparenchymal nodules - nonspecific, likely consistent with benign cystic biliary adenomas

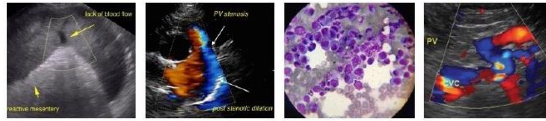
INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

Potential for emerging yet compensated HCM criteria, which would be a rule-out diagnosis if the patient is deemed normotensive.

Assessment of systemic blood pressure, given the presence of the mass in the area of the left adrenal gland, is recommended. If evidence of hypertension, aldosterone levels may be considered although no current evidence of hypokalemia. Continued monitoring of potassium levels going forward is advised.

No overt indication for cardiac medications, given normal left atrium size and overall adequate cardiac functionality.

Surgical consultation may be considered given the mass in the area of the left adrenal gland, or if strong clinical suspicion for hyperaldosteronism.



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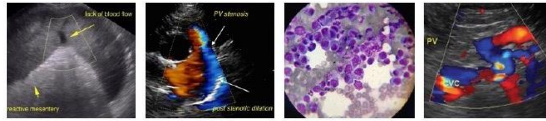

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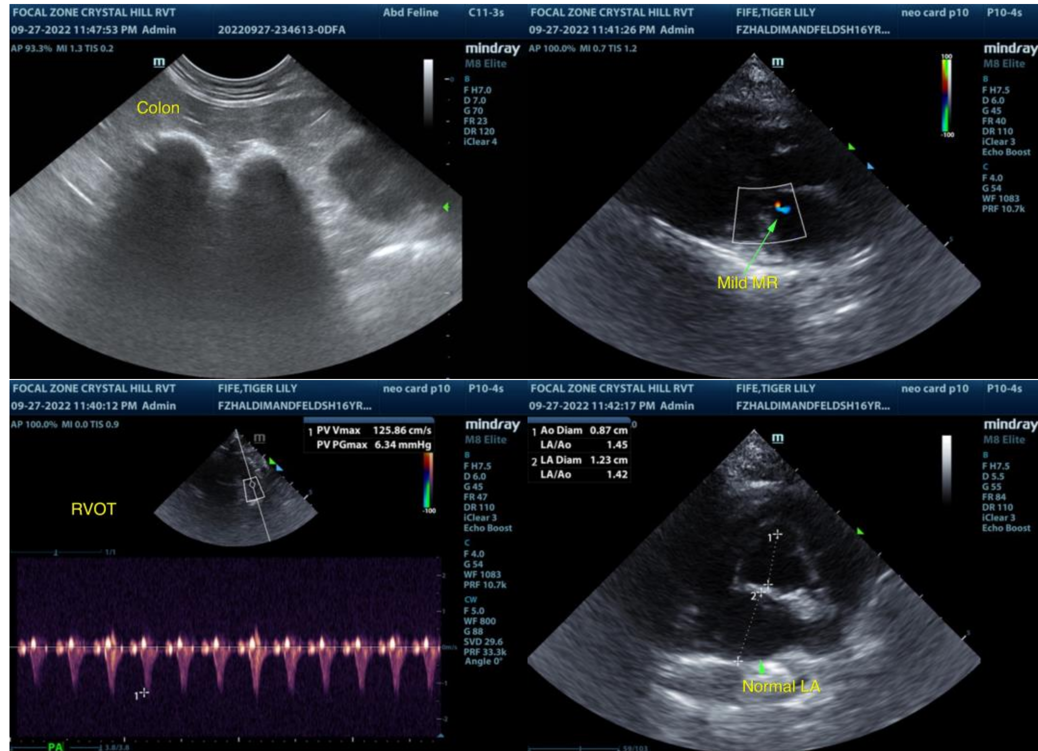

The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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