



**PATIENT PRESENTING CLINICAL SIGNS**

Twitch Saullo History: ADR, ataxic for at least a year, bloody/yellow nasal discharge  
Medication: Convenia, SQF, Dextrose

**SPECIES**  
Feline WBC 37.7 with marked neutrophilia, mild monocytosis  
Glucose 58, BUN 54, Creatinine 2.2

**BREED ULTRASONOGRAPHIC EXAMINATION OF THE HEART & ABDOMEN**

Domestic Shorthair

**SEX**  
F

**AGE**  
12 years

**WEIGHT**  
6 Pounds

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

**IMAGING PERFORMED BY**

Rebekah Jakum, CVT  
ARDMS/RVT

**HOSPITAL NAME**  
White Haven VH

**REFERRING VET**  
Dr. Dengler

**INVOICE**  
13261

**DATE**  
2.8.2022

FELINE CARDIAC PARAMETERS	BODY WEIGHT (kg)	HR (BPM)	IVSd (cm)	LVIDd (cm)	LVWd (cm)	FS (%)	EF (%)
<b>NORMAL PARAMETER</b>	-----	150-240	0.3-0.6	1.0-2.1	0.25-0.6	35-67	80-100
<b>PATIENT</b>		NM	0.55	1.1	0.57	54.5	89.3
FELINE CARDIAC PARAMETERS	LA/AO (Boon)	LA/AO HEART BASE (Sisson)	LA (cm)	LVOT VEL. (m/s)	RVOT VEL. (m/s)	IVRT (m)	
<b>NORMAL PARAMETER</b>	<1.5	0.88-1.79	0.7-1.7	<1.6	<1.3	40-60	
<b>PATIENT</b>		1.34	1.1	NM	NM	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. Chamber volume and blood echogenicity were normal. The cranial and caudal **mitral** valve leaflets presented minor irregular age-related changes that are not clinically significant at this time with adequate extension in systole and union in diastole. The **left ventricle** presented borderline increased septum and free wall thicknesses with mild alinear contour. The myocardium presented some echogenic remodeling consistent with age-related change. 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 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 dilation due to heartworm disease, cuor pulmonale, stenosis, or pulmonic hypertension was noted. Mild volume pericardial free fluid was



**PATIENT**

present without evidence of concurrent free pleural fluid. No overt cardiac, pericardial, or cranial mediastinal masses were noted in the visible window.

Twitch Saullo

**Urinary System**

**SPECIES**

The urinary bladder, trigone, cystourethral junction, and visible pelvic urethra to a depth of 2.0 cm exhibited normal thickness and tone. Primarily anechoic urine was present in the lumen. Mild, nondependent, particulate sediment was present without evidence of calculus formation. The ureteral papillae were normal. The ureters were not visible which is normal. No evidence of inflammatory or neoplastic mural changes were noted.

Feline

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The uterus exhibited segmental mild luminal fluid which is primarily anechoic in appearance without overt evidence of cellular component. The uterine horn measured 1.1 cm in width.

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Normal size and margination were 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. Small cortical to corticomedullary cyst was present in the left kidney. No evidence of pelvic dilation was present. The left kidney measured 3.2 cm in length. The right kidney measured 3.5 cm in length.

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12 years

**Adrenal Glands**

**WEIGHT**

No overt pathology was noted in the area of the left adrenal gland.

6 Pounds

The right adrenal gland was uniform in size and contour with a uniformly hypoechoic parenchyma. The right adrenal gland measured 0.27 cm width.

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**Spleen**

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 (Canine and Feline)

The spleen exhibited potential mild subnormal size possibly owing to mild volume contraction with 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 0.45 cm width.

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**Liver/ Gallbladder**

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The liver was subjectively normal in size, structure, and contour. The liver parenchyma was mildly nonuniform and hypoechoic to the spleen with a moderate coarse echotexture and subjective mild to benign parenchymal remodeling. 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.

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**Gastrointestinal**

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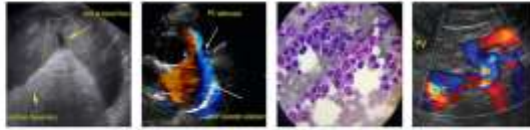
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The stomach presented intact wall layering with a normal wall layer ratio. The lumen of the stomach contained Moderate, ingesta exhibiting progressive distal acoustic shadowing. The gastric body wall width measured 0.24 cm.

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The small intestine presented intact wall layering with 1:3 muscularis/mucosa ratio. The lumen of the small intestine contained segmental, nonshadowing to progressively shadowing ingesta with no



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evidence of mechanical gastrointestinal ileus. The duodenum wall with measured 0.30 cm. The jejunum wall width measured 0.23 cm.

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

**SPECIES**

Feline

***Pancreas***

The pancreas was mildly prominent in size with heterogeneous to mildly hypoechoic parenchyma and mild pancreatic duct dilation. No overt evidence of pancreatic nodules or masses.

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***Free Abdomen***

Very scant pockets of peritoneal free fluid were present. No overt lymphadenopathy was noted. The omentum exhibited uniform echogenicity.

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**ULTRASONOGRAPHIC FINDINGS**

***Primary Findings***

**AGE**

12 years

- Bilateral chronic renal changes with small left kidney cyst
- Heterogeneous to hypoechoic pancreas - age-related variant, potential for low-grade chronic to chronic active pancreatitis

**WEIGHT**

6 Pounds

- Mild anechoic uterine fluid - possible minor to low-grade hydrometra, mucometra, or potential pyometra possible
- Overtly normal gastrointestinal tract with generalized gastrointestinal ingesta

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- Borderline hypertrophied LV
- Normal LA
- Mild volume pericardial free fluid

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**INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS**

The mild volume pericardial free fluid is of unknown etiology, yet likely noncardiogenic in origin given lack of left or right heart chamber enlargement or systolic dysfunction. Considerations may include idiopathic, inflammatory, infectious, or neoplastic effusion even without definitive evidence of a cardiac or pericardial mass. No overt indication for cardiac medications. Sonographic monitoring of the pericardial effusion for evidence of progression is recommended.

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Potential for low-grade chronic to chronic active pancreatitis would be suspected if evidence of cranial abdominal or subxiphoid discomfort on palpation. Correlation with a Spec fPL or a GI panel to assess concurrent cobalamin and folate levels could be considered.

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If persistent hypoglycemia, insulin, and glucose measurement on same serum sample to assess for nonobvious insulinoma, given the patient's neurological signs, may be considered.

Intracranial and thoracic CT is likely ideal in this patient.

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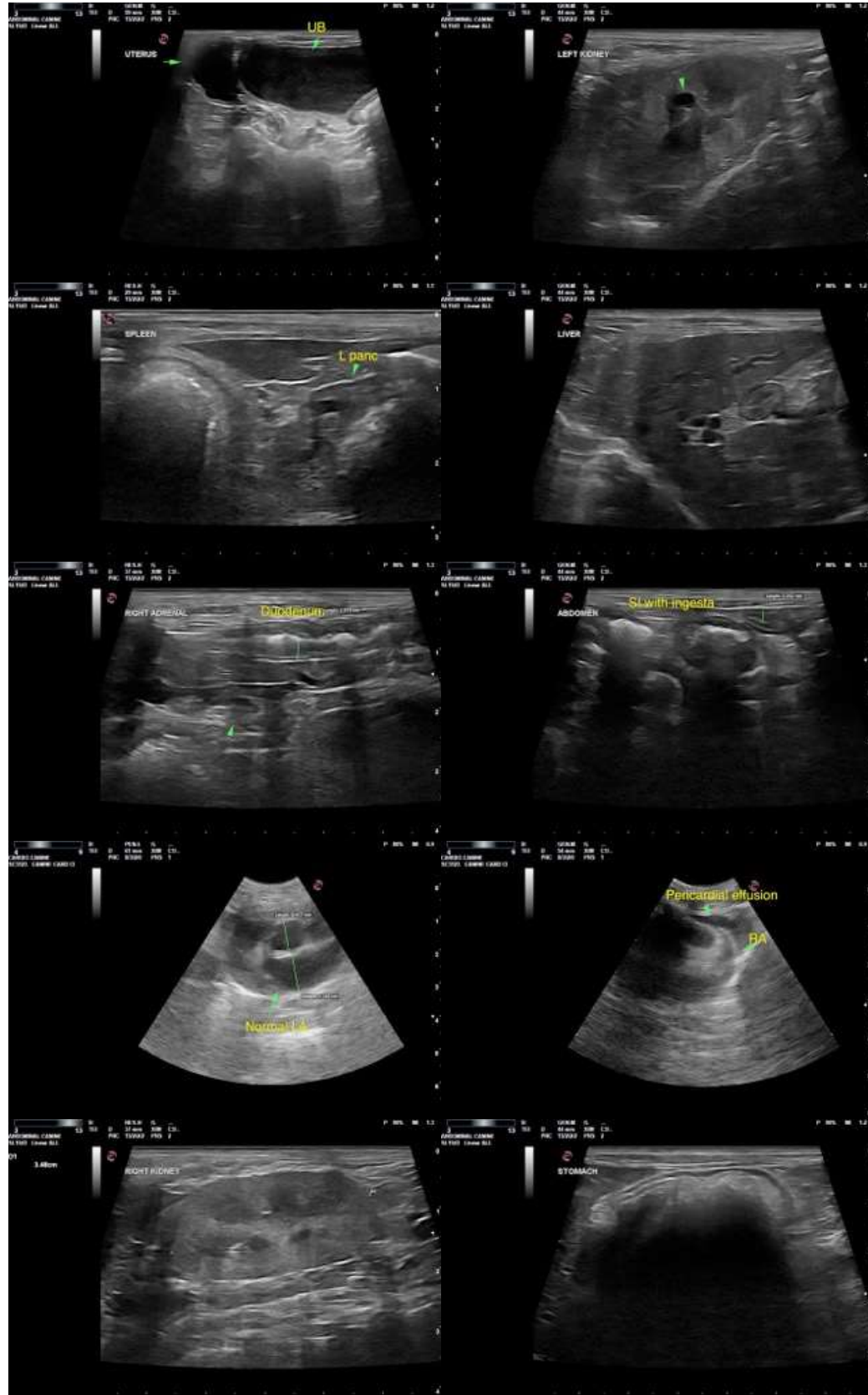
Dr. Dengler

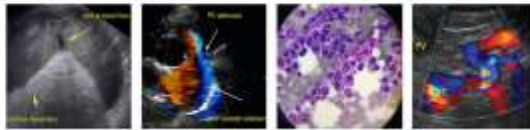
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**The information and recommendations provided are based on the images presented by the referring veterinarian. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.**

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.

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