



## PATIENT

Jetsam Gaffney

## SPECIES

Feline

## BREED

DSH

## SEX

MN

## AGE

15 years

## WEIGHT

9.6 lbs

## INTERPRETED BY

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

## IMAGING PERFORMED BY

Kelly Vazquez

## HOSPITAL NAME

Animal General on  
Hudson

## REFERRING VET

Dr. Karen Zelinski

## INVOICE

12908

## DATE

12/29/21

## PRESENTING CLINICAL SIGNS

Weight loss, loss of appetite, pleural effusion. Administered 1 dose of Lasix following chest tap performed on 12/27/21.

## 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		NM	0.53	1.61	0.50	41.6	75.9
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	--	2.0	2.0	1.0	0.8	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 left ventricular wall was remodeled with regions of asymmetry, as well as increased endocardium echogenicity suggestive of remodeling and potential fibrosis. Prominent papillary muscles noted in the LV lumen were present. LV systolic function was adequate yet subjectively decreased as evidenced by the fractional shortening measurement above. The left atrium indicated moderate dilation without evidence of spontaneous contrast. Concurrent right atrium enlargement without evidence of spontaneous contrast was also present. The RV free wall appeared to also be involved with evidence of increased myocardial echogenicity and remodeling. The mitral valve was normal. The tricuspid valve was normal with evidence of minor TR. Blood flow through the LV and RV outflow tracts was subjectively normal and laminar. Moderate volume pleural effusion was present without overt evidence of concurrent pericardial effusion. No obvious cardiac or pericardial tumors were noted 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.



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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. Minor pyelectasia was present. The left kidney measured 4.0 cm in length. The right kidney measured 4.1 cm in length.

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**Adrenal Glands**

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The left adrenal gland appeared to be mildly prominent in size yet with normal symmetry and parenchyma echogenicity. This is nonspecific with potential for patient variant. No overt evidence of adrenal tumors was noted. The left adrenal gland measured 0.63 cm.

**SEX**

The right adrenal gland was uniform in size and contour with a uniformly hypochoic parenchyma. The right adrenal gland measured 0.50 cm.

MN

**Spleen**

**AGE**

15 years

The spleen exhibited generalized enlargement with asymmetrical lateral medial lateral capsule contour. Generalized nonuniform to heterogeneous parenchyma exhibiting variably echogenic nodular changes was present. Normal splenic vascularity was noted. The spleen measured 1.5 cm in width.

**Liver/ Gallbladder**

**WEIGHT**

9.6 lbs

The liver was subjectively normal in size, structure, and contour. The liver parenchyma was mildly nonuniform and hypochoic to the spleen with a moderate coarse echotexture and subjective mild to benign parenchymal remodeling. Intermittent subtle uniform echogenic intraparenchymal nodules, as well as intermittent intraparenchymal cysts were present. 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 proximal common bile duct was dilated and tortuous without overt post hepatic obstruction. The common bile duct measured 0.27 cm diameter.

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**Gastrointestinal**

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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.

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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.

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**Pancreas**

The pancreas was normal in size and contour with isochoic to heterogeneous parenchyma compared to adjacent omentum. No signs of active inflammation or neoplasia.

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**Free Abdomen**

Small pockets of scant peritoneal free fluid were present. Unspecified hypochoic to mildly nonhomogeneous nodular lesion was present in the mid-abdomen, measuring 2.2 cm x 1.6 cm.

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**ULTRASONOGRAPHIC FINDINGS**

- Unclassified cardiomyopathy with myocardial remodeling and potential for fibrosis
- Infiltrative neoplasia splenic pattern
- Nonspecific hepatic intraparenchymal nodules with concurrent intermittent intraparenchymal cysts - lipogranulomas, nodular hyperplasia, potential neoplastic nodules possible
- Nonobstructive proximal common bile duct dilation - patient or age-related variant, potential for low-grade cholangitis if previous or current hepatic enzyme elevations
- Bilateral chronic renal changes with minor pyelectasia - pelvic scarring, pyelectasia owing to chronic renal changes, or secondary to IV fluid therapy if applicable
- Nonspecific mid-abdomen nodular lesion - pancreatic, omental, lymphatic origin possible
- Pleural effusion with scant peritoneal effusion

**INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS**

The finding of biatrial enlargement with normal LV wall thickness is most consistent with unclassified cardiomyopathy. However, restrictive cardiomyopathy or burn-out hypertrophy cardiomyopathy can also have this appearance. In the face of biatrial dilation, the pleural and peritoneal effusion may potentially be multifactorial in origin or owing to cardiac disease, while possible noncardiac origin, given the presence of the spleen i.e., neoplasia is of concern. Going forward, this patient will be at continued risk for potential CHF development of blood clots in the future.

Effusion analysis cytology +/- C/S if clinically indicated would be warranted for further assessment. Cardiac medical therapy may be considered with assessment of clinical response. Lasix 1.0-2.0 mg/kg PO BID, Clopidogrel 75 mg (1/4 tab) PO SID and off label Pimobendan 1.25 mg PO BID would be appropriate. Ideally, assuming normal clotting status and using a 25-gauge needle, ultrasound-guided FNA of the spleen +/- unspecified mid-abdominal nodule for cytology is recommended if possible.

Regardless, a very guarded to potentially unfavorable prognosis is indicated, given the cardiac presentation, potential for CHF going forward, and concern for splenic of multicentric neoplasia.

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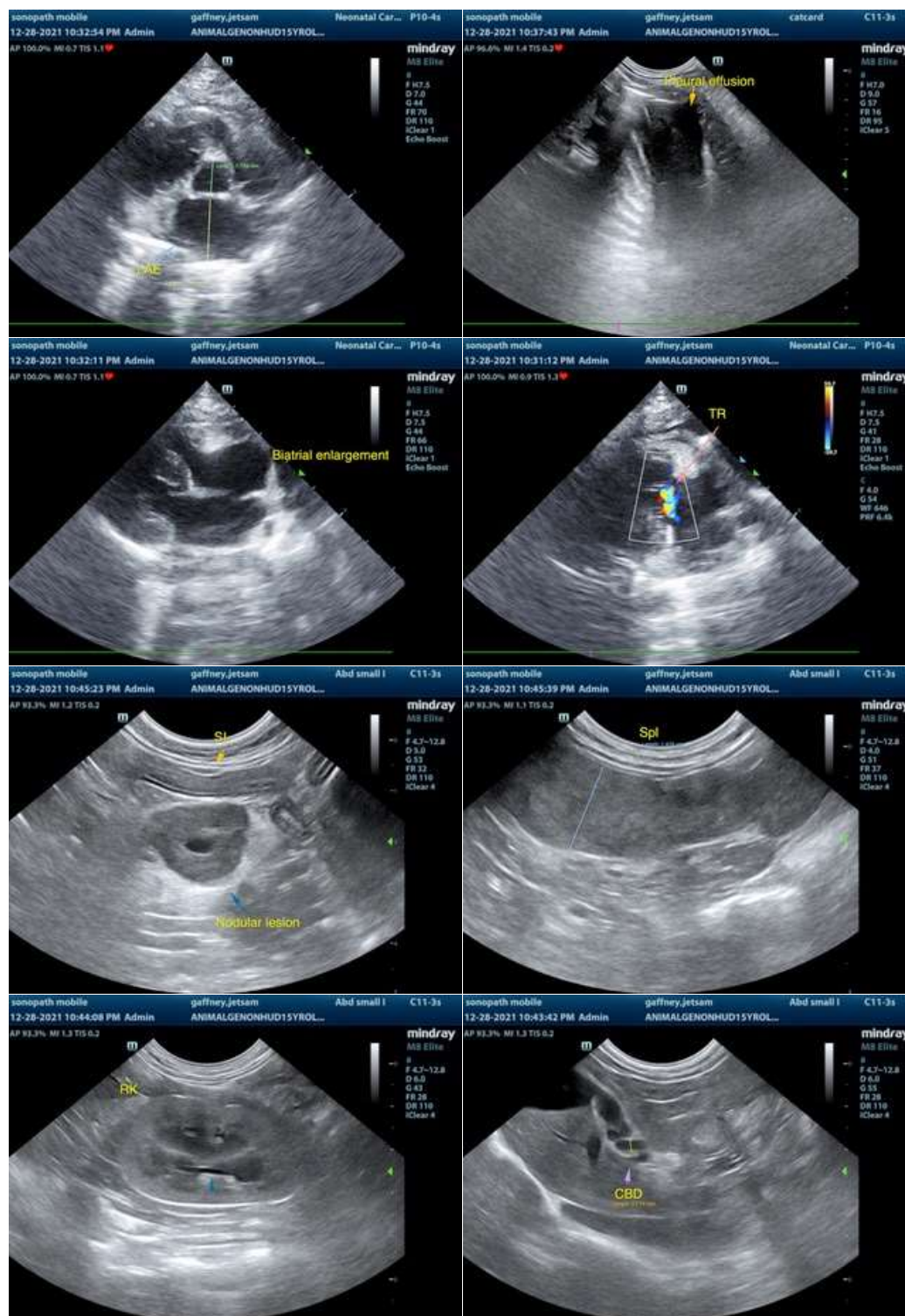
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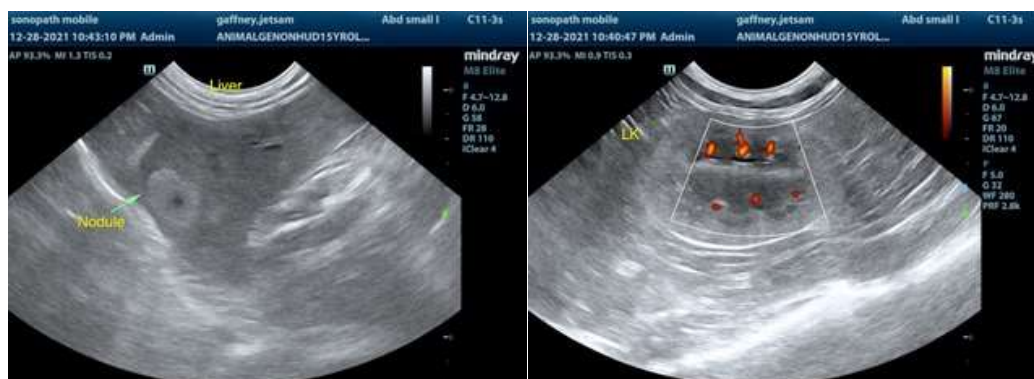
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The information and recommendations provided are based on the images presented by the referring veterinarian. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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)**  
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