



## PATIENT

Cookie DeAraujo

## SPECIES

Feline

## BREED

DSH

## SEX

Neutered Male

## AGE

13 Years

## WEIGHT

14.3 Pounds

## INTERPRETED BY

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

## IMAGING PERFORMED BY

Kelly Vazquez

## HOSPITAL NAME

Livingston AH

## REFERRING VET

Dr. Marcy Messina

## INVOICE

11052

## DATE

6.9.22

## PRESENTING CLINICAL SIGNS

History: Patient presents for coughing - retracted lung lobes, difficult to visualize heart silhouette. Suspicious for pleural effusion and possible enlarged lymph nodes in hilus area vs. mass. Current med: Erythromycin ophthalmic ointment - dispensed 6/8/22.

Abnormal PE/Chem/CBC/UA Results: Blood work on 5/11/22: mild decreased RBC, mild MCH elevation, BUN 15, creatine kinase 931 - historically elevated, T4 2.5. U/A: Protein 1+, benign sediment. USG 1.048.

## 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	--	188	0.48	1.5	0.48	60	94
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	1.14	1.31	1.1	1.0	0.75	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 normal free wall and septal thicknesses with linear contour. The **myocardium** presented some echogenic remodeling consistent with expected age-related change. **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 evidence of right heart chamber enlargement as with cor pulmonale, stenotic disease or evidence of clinical pulmonary hypertension. No evidence of **pericardial** free fluid. Moderate volume free pleural fluid was present. Suspected areas of pulmonary atelectasis adjacent to the heart were present. The **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



<b>PATIENT</b>	sediment. The ureteral papillae were normal. The ureters were not visible which is normal. No evidence of inflammatory or neoplastic changes were noted. Aortic trifurcation was normal.
Cookie DeAraujo	
<b>SPECIES</b>	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. No evidence of pelvic dilation was present. The left kidney measured 4.9 cm in length. The right kidney measured 4.6 cm in length.
Feline	
<b>BREED</b>	<b>Adrenal Glands</b>
DSH	No overt pathology in the area of the left or right adrenal glands.
<b>SEX</b>	<b>Spleen</b>
Neutered Male	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 or benign parenchyma changes were not noted. The spleen measured 0.72 cm in width at the level of the hilus. No evidence of splenic neoplastic criteria.
<b>AGE</b>	<b>Liver</b>
13 Years	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.
<b>WEIGHT</b>	The gallbladder was non distended in size with mild gallbladder debris, likely owing to anorexia/fasting. The cystic duct and common bile ducts were normal without evidence of dilation.
14.3 Pounds	
<b>INTERPRETED BY</b>	<b>Gastrointestinal</b>
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.
<b>IMAGING PERFORMED BY</b>	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.
Kelly Vazquez	
<b>HOSPITAL NAME</b>	Normal visible colon wall layers were present with apparent formed feces in lumen.
Livingston AH	<b>Pancreas</b>
<b>REFERRING VET</b>	The pancreas was normal in size and contour with isoechoic to heterogeneous parenchyma compared to adjacent omentum. This is likely consistent with age-related changes. No evidence of active inflammation or pancreatic neoplastic criteria.
Dr. Marcy Messina	<b>Free Abdomen</b>
<b>INVOICE</b>	No omental masses, lymphadenopathy or evidence of concurrent peritoneal free fluid was present.
11052	<b>ULTRASONOGRAPHIC FINDINGS</b>
<b>DATE</b>	<ul style="list-style-type: none"> <li>• Overtly normal cardiac structure and function for age</li> <li>• Suspect atelectasis, potential for unspecified neoplastic criteria</li> <li>• Noncardiogenic pleural free fluid</li> </ul>
6.9.22	



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- Mild chronic renal changes
- Mild gallbladder debris

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**INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS**

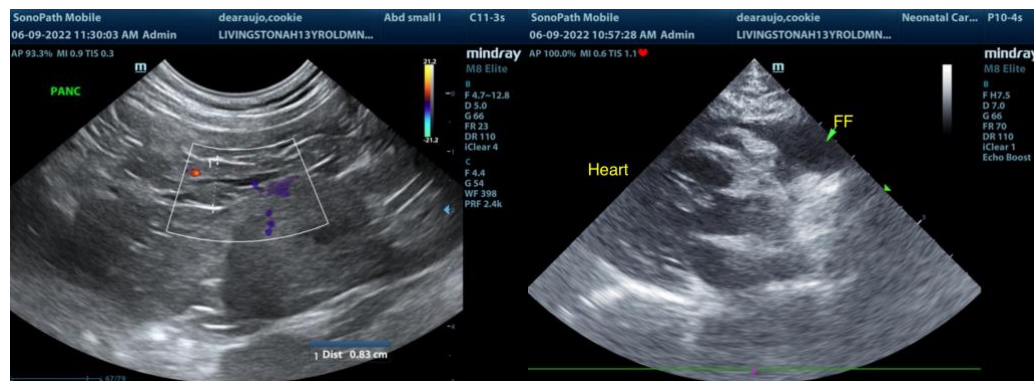
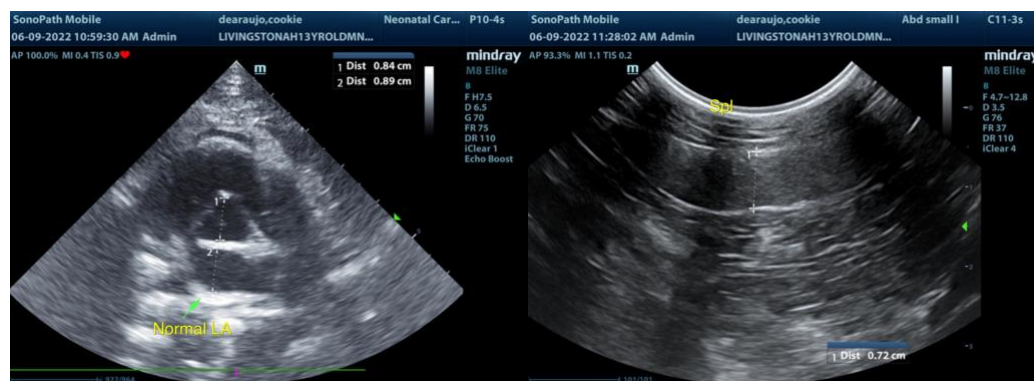
Submission of pleural free fluid for analysis, cytospin, cytology +/- culture and sensitivity is recommended. Given the lack of cardiomyopathy, noncardiogenic pleural free fluid, which may potentially be secondary to primary pulmonary disease, neoplasia, unspecified inflammatory or infectious disease, could be possible. Technically, FIP is a potential in this case yet considered unlikely given the age of the patient.

Overall, largely mild geriatric abdomen without evidence of intraabdominal visceral pathology as a potential primary contributing factor to the pleural effusion or source of thoracic metastasis.

Pending thoracic effusion analysis, thoracic CT may be ideal for further clarification, if possible.

**SonoPath CT Services** are offered at the [Blainstown Animal Hospital](https://www.blainstownanimalhospital.com/). Blainstown animal hospital is just a 30-minute drive west on route 80 from the route 80/287 interchange/Parsippany, New Jersey. More information can be found at:

<https://sonopath.com/resources/sonopaths-teleconsultation-services-and-sdep-certification/sonopath-ct-services>





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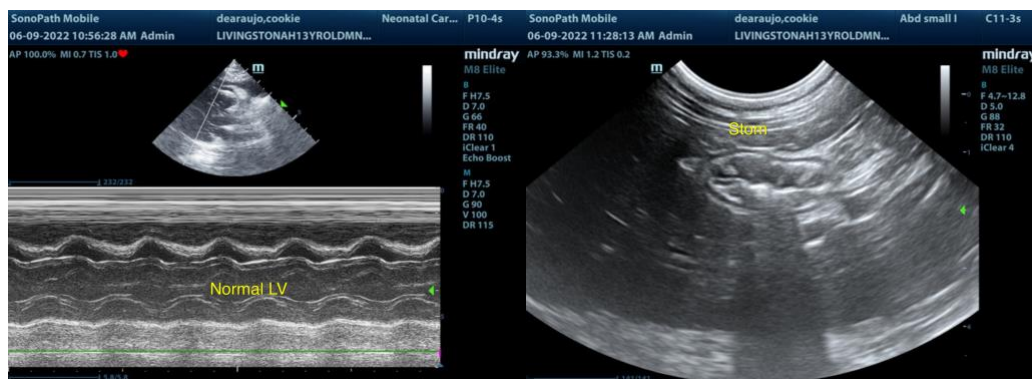
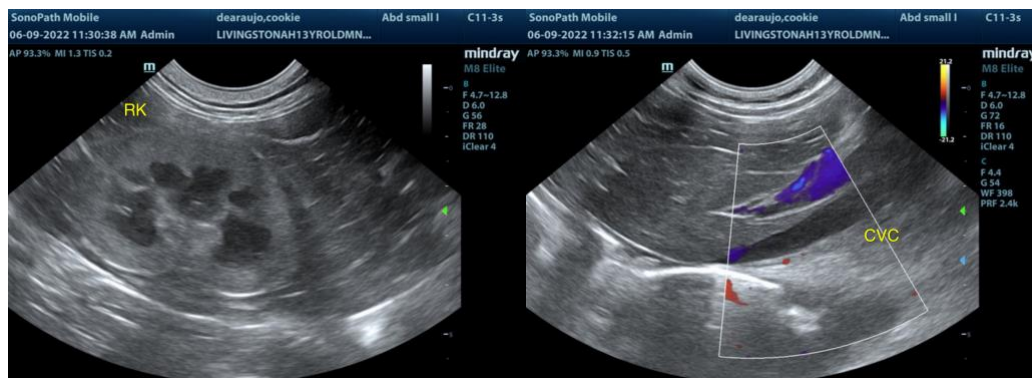
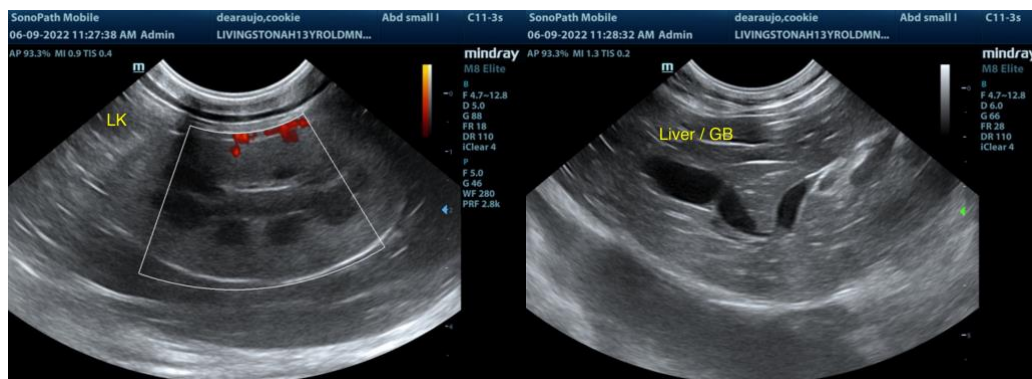
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The information and recommendations provided are based on the images presented by the referring veterinarian. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.



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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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info@SonoPath.com

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