


**PATIENT**

Chloe Wheeler

**SPECIES**

Canine

**BREED**

Lab mix

**SEX**

FS

**AGE**

12 years

**WEIGHT**

65 lbs.

**INTERPRETED BY**

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

**IMAGING PERFORMED BY**

Shari Reffi, CVT

**HOSPITAL NAME**

Newton Vet

**REFERRING VET**

Dr. Kim

**INVOICE**

14429

**DATE**

7/28/22

**PRESENTING CLINICAL SIGNS**

Vomited x3, lethargy, abdominal eff.

Abnormal PE/Chem/CBC/UA Results: BUN 37.6, CREA 2, PHOS 8.1, TP 4.81, ALP 222, NA 128, CL 92, WBC 31.48, NEU 29.16

**ULTRASONOGRAPHIC EXAMINATION OF THE HEART & ABDOMEN**

CANINE CARDIAC PARAMETERS	MR VMAX (m/s)	TR VMAX (m/s)	LA/AO (Boon method)	LA/AO (Heart Base; Swe)	FS (%)	EF (%)	EPSS (cm)
NORMAL PARAMETER	4.5-5.5	<2.7	1.3	<1.3	28-40	40-100	<0.6
PATIENT				1.3	43.3	77.9	0.2
CANINE CARDIAC PARAMETERS	HR (BPM)	AV VMAX (m/s)	PV MAX (m/s)	BODY WEIGHT (kg)	LA 2D short axis Base view (cm)	LVIDd Avg; 2D and m- mode short axis (cm)	LVIDs Avg; 2D and m-mode short axis (cm)
NORMAL PARAMETER	50-100	0.7-1.7	0.7-1.6				
PATIENT	NM	NM	NM		3.1	3.1	

**Cardiac Presentation**

Moderate volume pericardial effusion with diastolic collapse of the right atrial free wall, consistent with cardiac tamponade, was present. A nonhomogeneous, mild asymmetrical well-demarcated lesion associated with the right atrium / auricle, measuring approximately 3.0 cm in diameter, was present. LV function appeared adequate. Left atrium is normal in diameter. Potential LV volume contraction with minor pseudohypertrophy is noted. The pulmonic and aortic valves are normal in appearance. No obvious evidence of concurrent pleural effusion was present.

**Urinary System**

The urinary bladder, trigone, cystourethral junction, and visible pelvic urethra to a depth of 3.0 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.

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 to moderate loss of corticomedullary symmetry and definition expected for the age of the patient.



<b>PATIENT</b>	No evidence of pelvic dilation was present. The left kidney measured 6.1 cm in length. The right kidney measured 6.6 cm in length.
Chloe Wheeler	
<b>SPECIES</b>	<b>Adrenal Glands</b>
Canine	No overt pathology was noted in the area of the left or right adrenal glands.
<b>BREED</b>	<b>Spleen</b>
Lab mix	The spleen was overall normal size exhibiting primarily symmetrical contour and a finely textured homogeneous parenchyma. Intermittent variably sized mildly expansive Isoechoic splenic nodules were present with an example of a nodule In the caudolateral spleen measuring 1.4 cm In diameter.
<b>SEX</b>	<b>Liver/ Gallbladder</b>
FS	The liver presented enlarged in size with symmetrical yet swollen contour. The parenchyma exhibited conserved uniform parenchyma with normal echogenicity isoechoic to the spleen and falciform fat. The hepatic vasculature was mildly prominent in appearance, most notable at the level of the hepatic vein / caudal vena cava junction, without evidence of thrombosis. Mildly dilated cranial abdominal caudal vena cava was noted. The gallbladder was non-distended in size with thin walls and primarily anechoic luminal content. The cystic and common bile ducts were normal.
<b>AGE</b>	<b>Gastrointestinal</b>
12 years	The stomach presented wall thickening secondary to echogenic mucosa hypertrophy. Intact wall layering was maintained and distinct. Mild gastric distension with primarily anechoic fluid was present.
<b>WEIGHT</b>	The intestinal walls demonstrated intact wall layering and maintained 1:3 muscularis/ mucosa ratio. The mucosa exhibited mild decreased echogenicity with occasional mucosal speckling. A segmental to diffuse ileus pattern consisting of mild fluid accumulation in the intestinal lumen was present without obstruction or foreign material.
65 lbs.	<b>Pancreas</b>
<b>INTERPRETED BY</b>	The stomach presented wall thickening secondary to echogenic mucosa hypertrophy. Intact wall layering was maintained and distinct. Mild gastric distension with primarily anechoic fluid was present.
R. McKenzie Daniel, DVM, DABVP (Canine and Feline)	The intestinal walls demonstrated intact wall layering and maintained 1:3 muscularis/ mucosa ratio. The mucosa exhibited mild decreased echogenicity with occasional mucosal speckling. A segmental to diffuse ileus pattern consisting of mild fluid accumulation in the intestinal lumen was present without obstruction or foreign material.
<b>IMAGING PERFORMED BY</b>	<b>Free Abdomen</b>
Shari Reffi, CVT	Moderate volume ascites was present with generalized hyperechoic mesentery. No overt lymphadenopathy was noted.
<b>HOSPITAL NAME</b>	<b>ULTRASONOGRAPHIC FINDINGS</b>
Newton Vet	<ul style="list-style-type: none"> <li>• Right atrium / auricle mass</li> <li>• Moderate volume pericardial effusion and secondary cardiac tamponade</li> <li>• Congestive hepatopathy</li> <li>• Intermittent discrete splenic nodules</li> </ul>
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**PATIENT**

- Moderate volume ascites and generalized reactive mesentery

Chloe Wheeler

**INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS**

**SPECIES**

The most likely tumor type, given the tumor location, is hemangiosarcoma. Other tumor types are less likely, including chemodectoma or other. Potentially, this tumor may be secondary to neoplastic splenic nodules or vice versa. The splenic nodules may indicate metastatic disease, although potential separate benign splenic nodules i.e., hyperplasia, hematopoiesis, etc., are possible.

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Regardless, the patient is in cardiac tamponade secondary to likely pericardial hemorrhage from the tumor resulting in cardiac volume depletion and hepatic congestion. Pericardiocentesis with cytopsin cytology of the pericardial fluid +/- oncology consult to assess potential chemotherapy and/or radiation options. However, unfortunately, the prognosis with cardiac hemangiosarcoma is poor. A common limiting factor is often recurrent pericardial hemorrhage with recurrence of cardiac tamponade, hepatic congestion, and persistent ascites.

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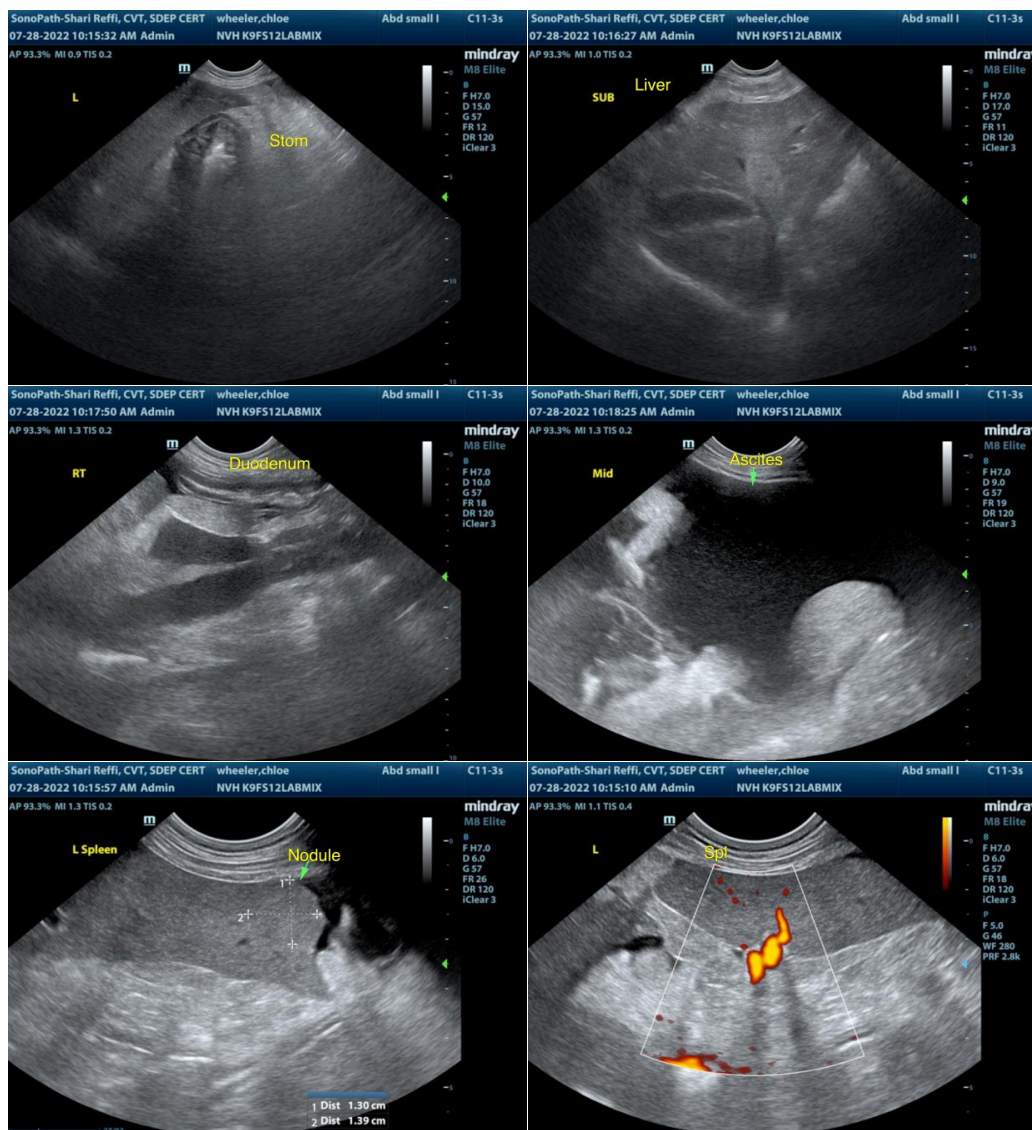
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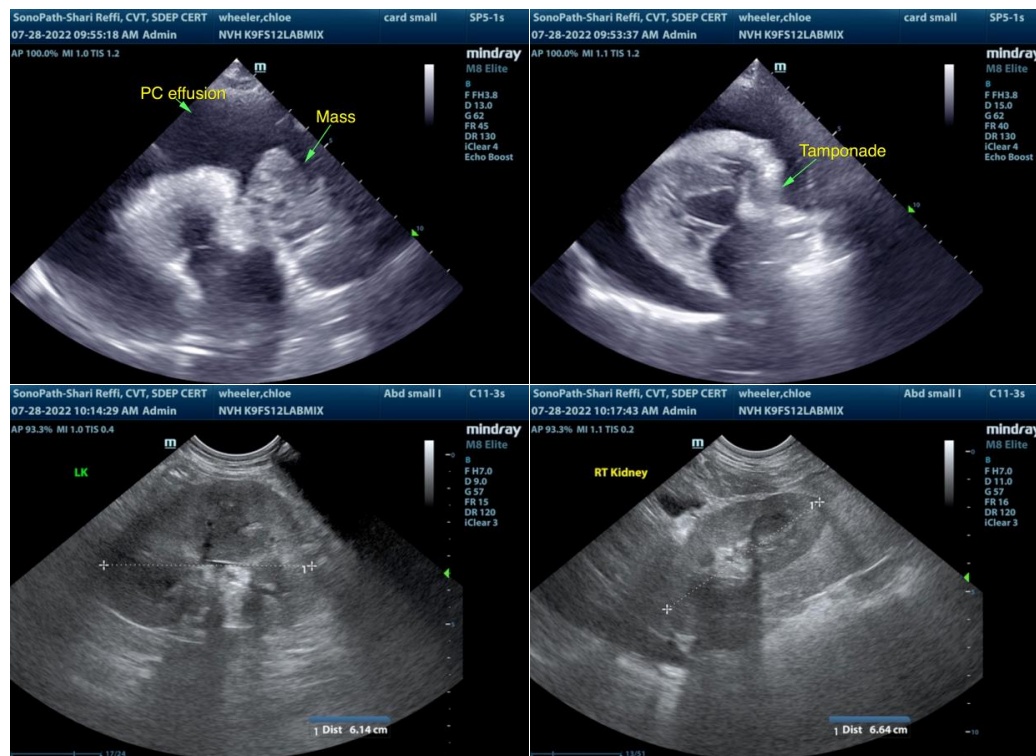
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The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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