
PATIENT

Shadow Tanner

SPECIES

Canine

BREED

Goldendoodle

SEX

MN

AGE

9 years

WEIGHT

37.6 kg

INTERPRETED BY

 R. McKenzie Daniel,
 DVM, DABVP

**IMAGING
 PERFORMED BY**

Crystal Hill

HOSPITAL NAME

 Beatties PH Stoney
 Creek

REFERRING VET

Dr. Wittenrich

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DATE

11/26/21

PRESENTING CLINICAL SIGNS

Presented 11/15/21 not eating much, weight loss, one episode of vomiting, drinking more. PE: mild hepatomegaly with rounded margin. BW run, Tx for gastroenteritis. was taking tramadol and Metronidazole PO after 11/15 appt for 10 days, given Cerenia injection 11/25
 Abnormal PE/Chem/CBC/UA Results: SDMA 15, ALT 399, ALKP 379

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	<1.6	28-40	40-100	<0.6
PATIENT			--	1.2	38	71.6	0.28
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	BELOW	BELOW	BELOW	BELOW
PATIENT	NM	1.5	1.3		3.5	3.5	

Cardiac Presentation

The echocardiogram in this patient demonstrated normal **left atrial** size based on 3 separate methods of LA evaluation. The cranial and caudal **mitral** valve leaflets presented normal linear structure, extension in systole, and union in diastole with normal kinesis. The **left ventricle** presented thicknesses with linear contour and was not dilated nor restricted. The **myocardium** presented normal echogenicity without subjective evidence of significant fibrotic or ischemic disease.

Contractility of the ventricular walls was adequate and in normal range for this patient evidenced by the fractional shortening measurement and subjective evaluation of the different regions of the myocardium. The **left ventricular outflow** tract demonstrated normal laminar flow and subjective structural integrity. The **right atrium** and auricle revealed normal size, structure and content. No evidence of masses was noted. **Tricuspid** valvular assessment demonstrated adequate linear morphology and kinesis. The **right ventricle** was of normal size (1/3 diameter of LV), chordae structure, myocardial echogenicity and thickness. **Pulmonary outflow** tract assessment revealed normal valve structure, laminar flow, and diameter (approx. 1:1 pa/ao ratio). No visible **pericardial** or free pleura fluid was noted. The cranial **mediastinum and pericardial and extra-cardiac regions** were free of masses in the visible window.



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Urinary System

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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.

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The residual prostate was symmetrically normal in size with uniform parenchyma and slight coarse echotexture measuring 0.98 cm in diameter.

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The area of the aortic trifurcation was free of pathology.

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Normal size and margination were present in the left kidney. 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. Mildly expansive, nonhomogeneous, solid mass occupying the mid to cranial left kidney with mild symmetrical renal capsule distortion was present, measuring approximately 5.0 cm in diameter. No evidence of pyelectasia was present. The left kidney measured 8.5 cm in length.

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Normal size and margination were present in the right kidney. 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 pyelectasia was present. The right kidney measured 8.0 cm in length.

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Adrenal Glands

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The left adrenal gland was uniform in size and contour with a uniformly hypoechoic parenchyma. The left adrenal gland measured 2.9 cm length x 0.82 cm width at the caudal pole. The right adrenal gland was indistinctly visualized owing to patient size and regional periadrenal artifact. No overt right adrenal pathology was noted. The right adrenal gland subjectively measured 1.1 cm width at the caudal pole.

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Spleen

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The spleen exhibited primarily finely textured parenchyma which was hyperechoic to the liver and renal cortical parenchyma. Mild generalized parenchyma heterogeneity was present without evidence of nodular changes. 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. The parenchymal heterogeneity is likely consistent with benign changes such as extramedullary hematopoiesis or age-related remodeling with minor potential for inflammatory or neoplastic disease.

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Liver/ Gallbladder

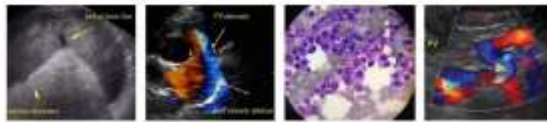
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The liver exhibited generalized enlargement primarily owing to multiple, variably sized to expansive, left, mid, and right intraparenchymal mass lesions. An example of left liver Intraparenchymal mass lesion measured 6.0 cm. An example of a right liver intraparenchymal mass measured 6.4 cm. 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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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 parenchyma of the left limb, body, and right limb of the pancreas presented isoechoic to the adjacent omental fat. A normal curvilinear capsule contour of the pancreas was present. The visible pancreatic duct was normal. No signs of active inflammation or neoplastic disease were evident.

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Free Abdomen

No overt lymphadenopathy or peritoneal effusion was present.

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ULTRASONOGRAPHIC FINDINGS
Primary Findings
WEIGHT

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- Normal echocardiogram
- Multiple variably sized to expansive, hepatic intraparenchymal masses
- Left kidney mass

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INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

Although sampling is required for further clarification and potential definitive diagnosis, the multiple variably sized to expansive liver masses in conjunction with left kidney mass are most consistent with multicentric, likely round cell neoplasia.

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Assuming normal clotting status, hepatic mass +/- left kidney mass FNA for screening cytology, further staging, and potential oncology consultation may be considered. No overt evidence of splenic involvement, although cannot be definitively excluded. Three view chest radiographs are recommended. A very guarded to unfavorable prognosis is unfortunately indicated.

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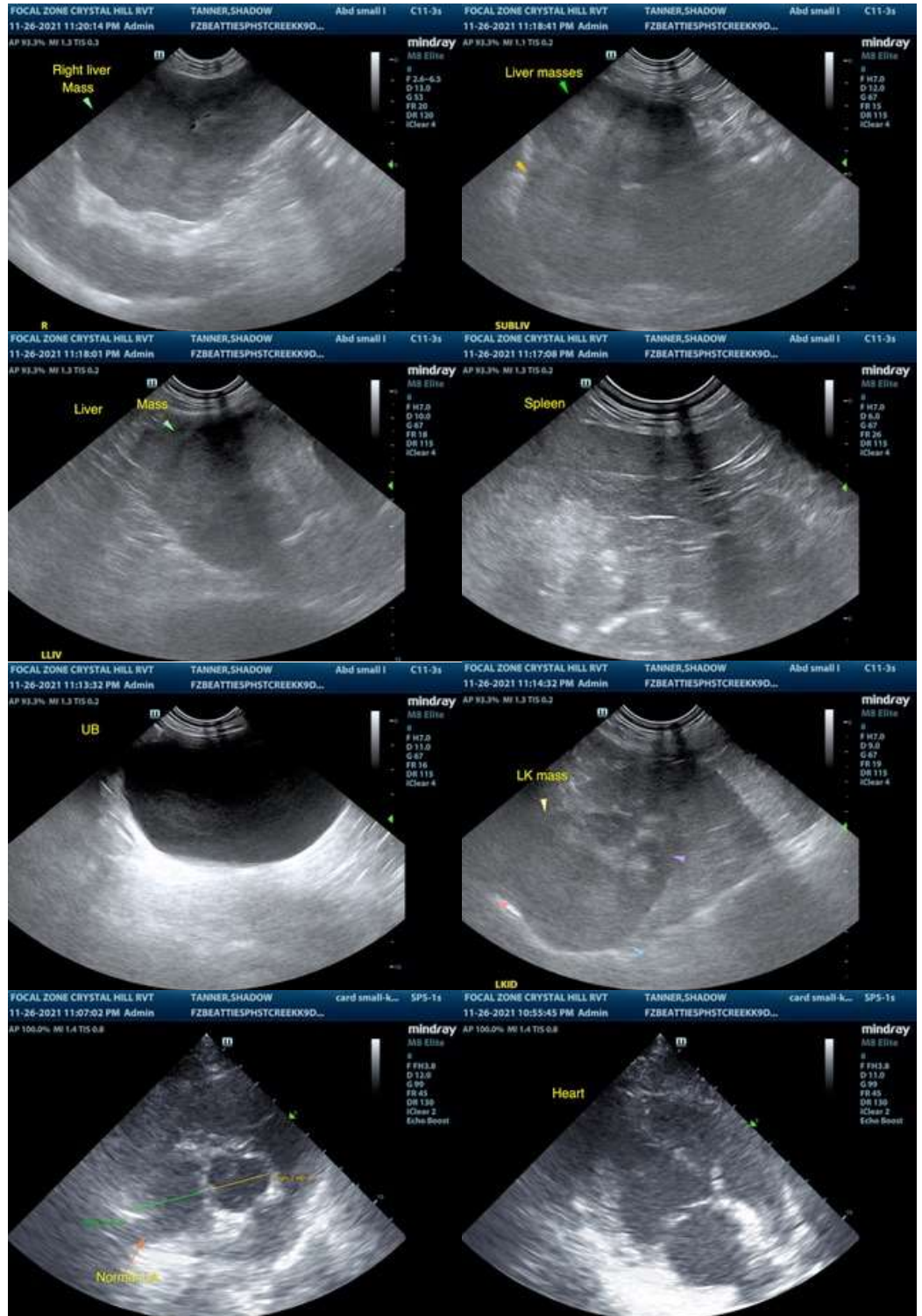
Dr. Wittenrich

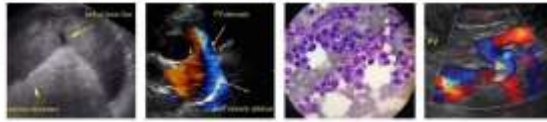
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The information and recommendations provided are based on the images presented by the referring veterinarian. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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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