



PATIENT PRESENTING CLINICAL SIGNS

PATIENT Abby Best
SPECIES Canine
BREED Golden Retriever

History: Acute onset weakness and pale mucous membranes noted this AM, Reluctant to get up. Previous history of SAS low velocity 2.43 m/s. SAS has not been an issue AUS and quick Echo
 Abnormal PE/Chem/CBC/UA Results: Hemoabdomen, HCT 23.3 % (N 37.3-61.7), Increased WBC numbes. SDMA 18 (N 0-14) , Liver numbers ok, TT4 8 (N 13-510 Xrays; Large ventral abdominal soft tissue mass, likely arising from the spleen, though a pedunculated liver mass is not ruled out. Peritoneal effusion. Right-sided hepatomegaly is concerning for infiltrative neoplasia, with a benign etiology less likely but not ruled out. Subtle soft tissue pulmonary nodules, likely due to metastatic pulmonary neoplasia.

ULTRASONOGRAPHIC EXAMINATION OF THE HEART & ABDOMEN

SEX

Spayed Female

AGE

8 Years

WEIGHT

35.1 kg

INTERPRETED BY

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

IMAGING PERFORMED BY

Dr. Brian Barnes

HOSPITAL NAME

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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	--	--	NM	1.1	41.5	74.2	0.22
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	1.7	2.8	--	--	2.8	--

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 borderline to mild increased thicknesses with linear contour and was not dilated nor restricted. This may indicate pseudohypertrophy secondary to decreased cardiovascular volume with contributing factors owing to historic mild subaortic stenosis. 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 mild dynamic to turbulent systolic flow with normal 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. Mild TR was present on doppler. 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). Trace PI was present on doppler. No visible **pericardial** or free pleura fluid was noted.



PATIENT

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The cranial **mediastinum and pericardial and extra-cardiac regions** were free of masses in the visible window.

Urinary System

SPECIES

Canine

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.

BREED

Golden Retriever

Normal size and margination was 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 6.8 cm in length. The right kidney measured 7.7 cm in length.

SEX

Spayed Female

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 0.70 cm width at the caudal pole and 0.68 cm width at the cranial pole.

The right adrenal gland was uniform in size and contour with a uniformly hypoechoic parenchyma. The right adrenal gland measured 0.79 cm width at the caudal pole and 0.77 cm width at the cranial pole.

WEIGHT

35.1 kg

Spleen

The spleen revealed a moderately sized nonhomogeneous to expansive mass, measuring approximately 6-7 cm in diameter. Regional perisplenic hyperechoic mesentery was present. Concurrent separate hypoechoic splenic nodules were present in the spleen, not involved with the splenic mass.

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Liver

Multiple variably sized nonhomogeneous to expansive intraparenchymal masses with associated hepatic capsule distortion were present. An example measured 7.0 cm in diameter, while a separate mass measured 5.3 cm in diameter. Generalized nonuniform hepatic parenchyma was present.

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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

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.

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

Pancreas

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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 was evident.



PATIENT *Free Abdomen*

Abby Best Moderate volume peritoneal free fluid was present. No overt lymphadenopathy noted.

SPECIES **ULTRASONOGRAPHIC FINDINGS**

Canine

- Overtly normal cardiac structure and function, potential mild LV pseudohypertrophy

BREED

- Mildly dynamic LVOT outflow, normal LVOT velocity

Golden Retriever

- Mild TR- no overt pulmonary hypertension

SEX

- Trace PI

Spayed Female

- Splenic mass with concurrent separate hypoechoic splenic nodules

- Multiple variably sized to expansive nonhomogeneous liver masses

AGE

- Perisplenic hyperechoic mesentery and moderate volume peritoneal free fluid- consistent with probable hemoabdomen

8 Years

Secondary Findings

- Bilateral mild chronic renal changes

WEIGHT

35.1 kg

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

Unfortunately, the hepatosplenic presentation is consistent with multicentric neoplasia, likely indicative of multicentric sarcoma with primary splenic mass and hepatic metastasis. Alternative neoplastic etiologies possible yet thought less likely. Unfortunately, given this presentation, surgical options are precluded, and an unfavorable prognosis is indicated.

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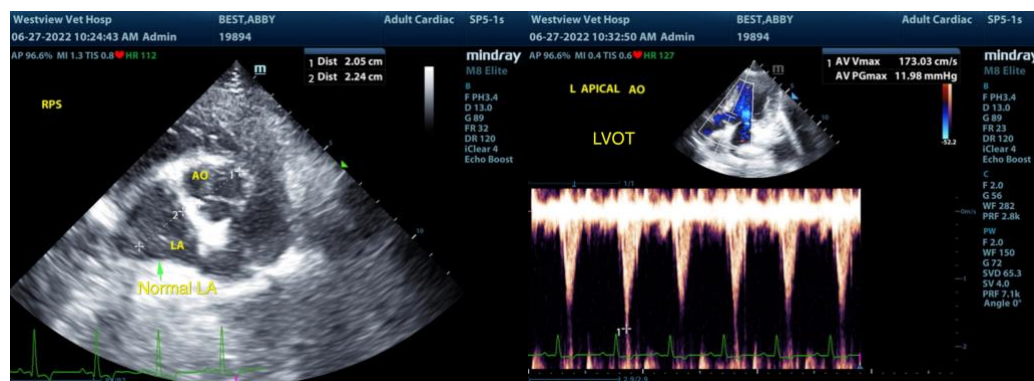
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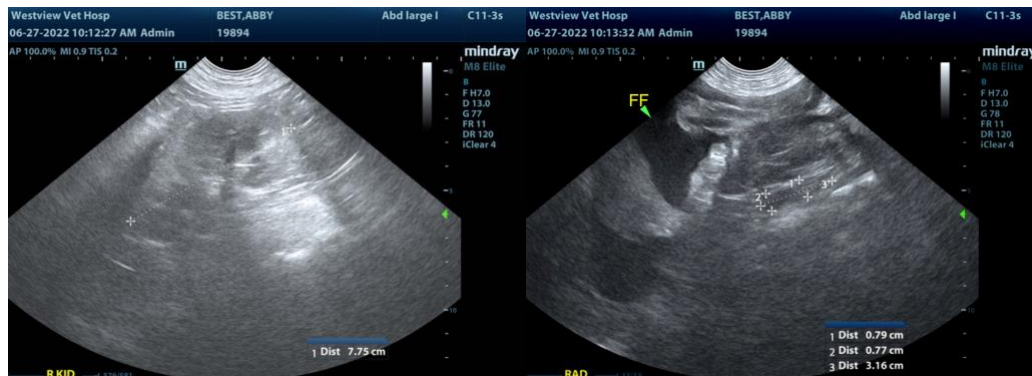
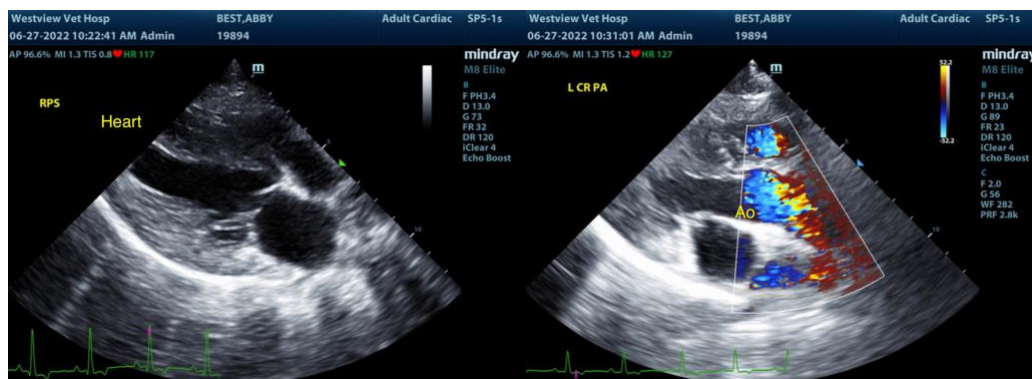
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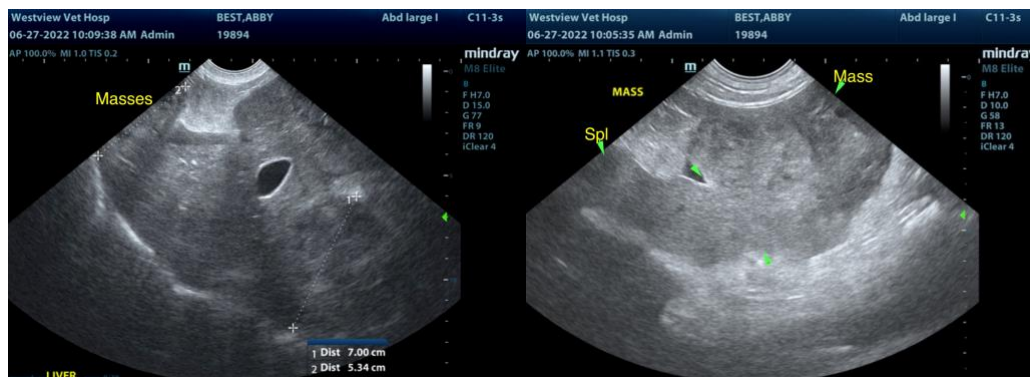
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The information and recommendations provided are based on the images presented by the referring veterinarian. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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.

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