


PATIENT PRESENTING CLINICAL SIGNS

Eliza Witt History: Patient presents for pre-anesthetic echo, wide QRS complexes and right axis deviation were noted on ECG. During echo liver pathology was observed and an abdominal ultrasound was recommended. Current meds: Doxycycline.

SPECIES

Canine

Abnormal PE/Chem/CBC/UA Results: T4 0.7, Free T4 14.2. U/A: WBC 2-3, USG: 1.041.

BREED

English Springer Spaniel

SEX

FS

AGE

11 yr

WEIGHT

37.1 lb

ULTRASONOGRAPHIC EXAMINATION OF THE HEART AND 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	5.2	<2.0	1.21	1.1	41.7	76	0.3
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	110	1.2	1.0		3.7	3.6	

INTERPRETED BY

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

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Kelly Vazquez

HOSPITAL NAME

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Cardiac Presentation

The echocardiogram in this patient demonstrated normal left atrial size based on 3 different LA measurement methods. Chamber volumes and echogenicity were normal. The cranial and caudal mitral valve leaflets presented mild vegetative thickening consistent with endocardiosis. Doppler indicated measurable mild eccentric insufficiency. 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 or chamber overload. Tricuspid valvular assessment demonstrated potential for mild concurrent thickening with mild TR on Doppler. The right ventricle was of normal size (1/3 diameter of LV), chordae structure, myocardial echogenicity and thickness. Pulmonic 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. No echographically detectable evidence of infiltrative disease was visible. The cranial mediastinum and pericardial regions were free of masses in the visible window.

Urinary System



PATIENT
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The urinary bladder, trigone, cystourethral junction, and visible pelvic urethra to a depth of 2 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 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 5.4 cm in length. The right kidney measured 5.7 cm in length.

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The area of the aortic trifurcation was free of pathology.

Adrenal Glands

SEX
FS

The left adrenal gland was uniform in size and contour with a uniformly hypoechoic parenchyma. The left adrenal gland measured 0.54 cm width at the caudal pole and 2.2 cm length. The right adrenal gland was uniform in size and contour with a uniformly hypoechoic parenchyma. The right adrenal gland measured 0.53 cm width at the caudal pole and 2.2 cm length.

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Spleen

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, neoplastic, or benign parenchyma changes were not noted.

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Liver

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The liver was subjectively normal in size, structure, and contour. Nonuniform variably echogenic parenchyma exhibiting moderate coarse echotexture was present with evidence of parenchymal remodeling. Intermittent variably sized nondisruptive hypoechoic nodules were present, an example measuring 1.7 cm and 2.6 cm in diameter. 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.

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 was evident.

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Free Abdomen

No overt lymphadenopathy or peritoneal effusion was present.

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ULTRASONOGRAPHIC FINDINGS

- Normal cardiac structure and function
- Mild MR/TR
- Nonuniform to mixed echogenic intermittently nodular liver
- Mild chronic renal changes

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

Overtly normal cardiac structure and function without clinical issues such as LV systolic dysfunction, left or right heart chamber enlargement or evidence of clinical pulmonary hypertension. The hemodynamic effects of the mild MR/TR appear to be minimal given lack of left or right heart chamber enlargement. No overt evidence of arrhythmogenic disease. No indication for cardiac medications. No anesthetic contraindications. Suggested anesthetic protocol may include opioid or Benzodiazepine pre-med, induction with Propofol or Alfaxalone, and appropriate gas anesthesia with avoidance of alpha 2 agonists.

Given lack of reported hepatic enzyme elevations the hepatic presentation is nonspecific with considerations including vacuolar hepatic changes, chronic inflammatory disease, parenchymal remodeling, nodular hyperplasia, hematopoiesis, fibrosis or other hepatopathy. Infiltrative neoplasia cannot be definitively excluded. Assuming normal clotting status, ultrasound guided hepatic parenchymal and hepatic nodule FNA using 25g needle is warranted for screening cytology. Monitoring of hepatic enzyme levels is suggested. Sonographic monitoring of the liver for evidence of progressive parenchymal changes would be a more conservative approach.

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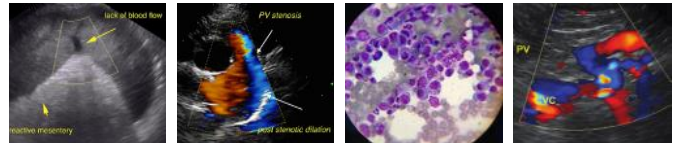
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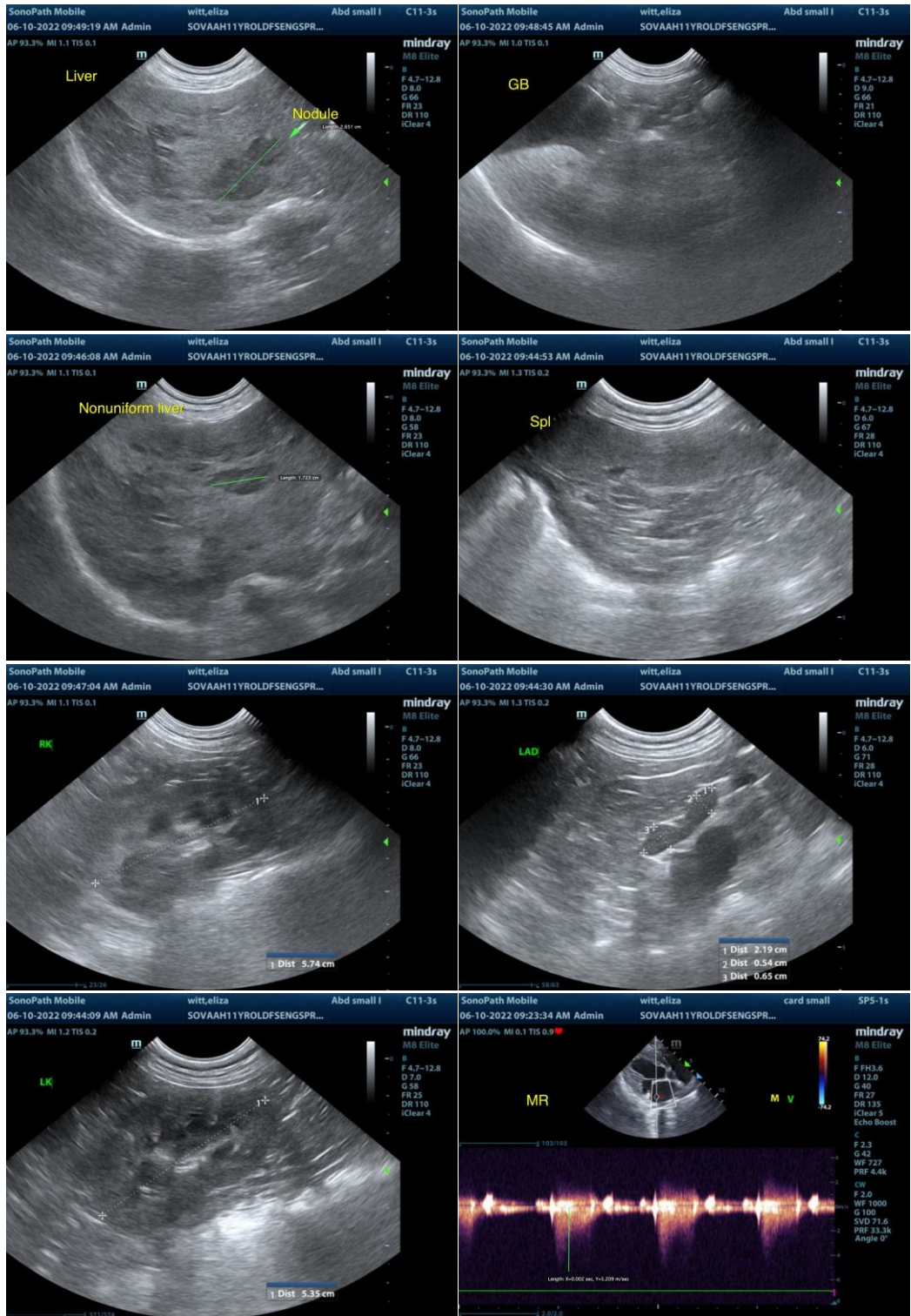
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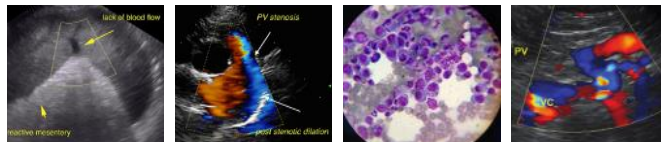
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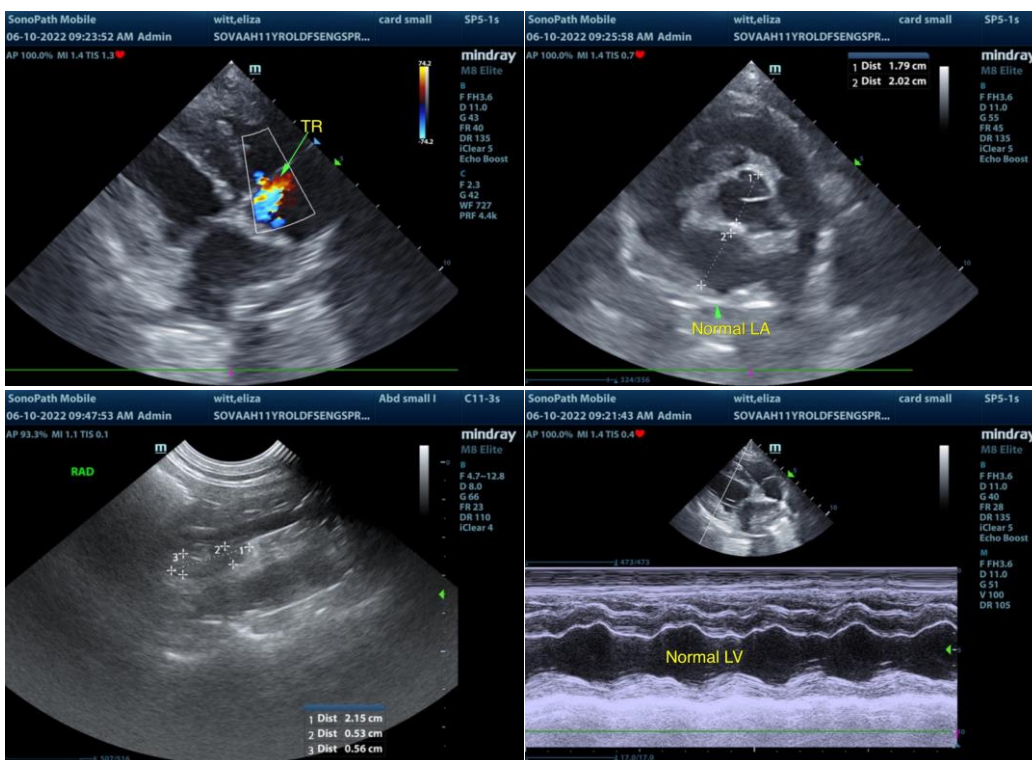
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The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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.

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