



PATIENT

Norman Sheehan

SPECIES

Canine

BREED

Labradoodle

SEX

MN

AGE

12yr

WEIGHT

23lb

PRESENTING CLINICAL SIGNS

Seen @ emergency a week ago for coughing. Tx w/doxycycline. Coughing improved but appetite is poor today. Radiographs -pleural & pericardial effusion, no murmur

Abnormal PE/Chem/CBC/UA Results: Pending

ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN AND HEART

CANINE CARDIAC PARAMETERS	MR VMAX (m/s)	TR VMAX (m/s)	LA/AO M-mode	LA/AO (Heart Base; Swe)	FS (%)	EF (%)	EPSS (cm)
NORMAL PARAMETER	4.5-5.5	<2.7	1.3	Up to 1.6	28-40	40-100	<0.6
PATIENT	--	--	--	1.4	36	68	0.3
CANINE CARDIAC PARAMETERS	HR (BPM)	AV VMAX (m/s)	PV MAX (m/s)	BODY WEIGHT (kg)	LAD LA MAX 4 Chamber	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	--	--	--	--	2.7	2.6	--

INTERPRETED BY

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

IMAGING PERFORMED BY

Shari Reffi CVT

HOSPITAL NAME

Marsh Animal Hospital

REFERRING VET

Dr Armani

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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 mildly thickened consistent with mild degenerative change. No evidence of valvular prolapse. No overt MR on Doppler. 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 with evidence of cardiac tamponade. Tricuspid valvular assessment demonstrated adequate linear morphology and kinesis. No overt TR 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). Moderate volume pericardial and concurrent pleural effusion was present. The cranial mediastinum and pericardial and extra-cardiac regions were free of masses in the visible window.

Urinary System



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The urinary bladder, trigone, cystourethral junction, and visible pelvic urethra to a depth of 3 cm exhibited normal thickness and tone. Anechoic urine was present in the lumen with no evidence of urine/lumen sediment, mineral, or calculi. 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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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 moderate loss of corticomedullary symmetry and definition expected for the age of the patient. No evidence of pelvic dilation was present. The left kidney measured 4.8 cm in length. The right kidney measured 4.0 cm in length.

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The area of the aortic trifurcation was free of pathology. No evidence of distal aortic thrombus.

The residual prostate appeared normal and free of pathology

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Adrenal Glands

The left adrenal gland was indistinctly visualized with no obvious pathology subjectively measuring 0.51 cm width at the caudal pole. The right adrenal gland was uniform in size and contour with a uniformly hypoechoic parenchyma. The right adrenal gland measured 0.47 cm width at the caudal pole.

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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/Gallbladder

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 dilated in appearance, most notable at the level of the hepatic vein / caudal vena cava junction, without evidence of thrombosis. The gallbladder was non-distended in size with thin walls and mild non-organized congealed debris. 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.

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 mechanical/metabolic 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 area of the pancreas was sonographically normal.

Free Abdomen

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No overt lymphadenopathy was present.

Moderate to significant volume ascites was present.

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Primary

- Moderate volume pericardial effusion with cardiac tamponade
- Mild pleural effusion
- Congestive hepatomegaly
- Non-organized gallbladder debris (non-mucocele)
- Sonographically normal spleen
- Moderate to significant volume ascites

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Secondary

- Bilateral chronic renal changes

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INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

A definitive cardiac or intra-abdominal mass as a cause of the pericardial effusion was not obvious. A small cardiac or right atrium / auricle tumor, however, may be difficult to visualize sonographically and is not entirely ruled out. Other potential causes of pericardial effusion may include hematologic, infectious or inflammatory etiologies. Ultrasound guided pericardiocentesis to alleviate cardiac tamponade as well as pericardial effusion analysis cytology +/- C/S in correlation with ascites analysis in search of more definitive diagnosis is recommended. Advanced imaging, if possible, would be ideal for further assessment.

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SonoPath CT Services are offered at the SonoPath Imaging and Veterinary Education Center, 141 Main St (rt 206), Andover, New Jersey, a 20-minute drive west on route 80/206 North from the route 80/287 interchange/Parsippany, New Jersey. More information can be found at <https://sonopath.com/services/vetimaging/>

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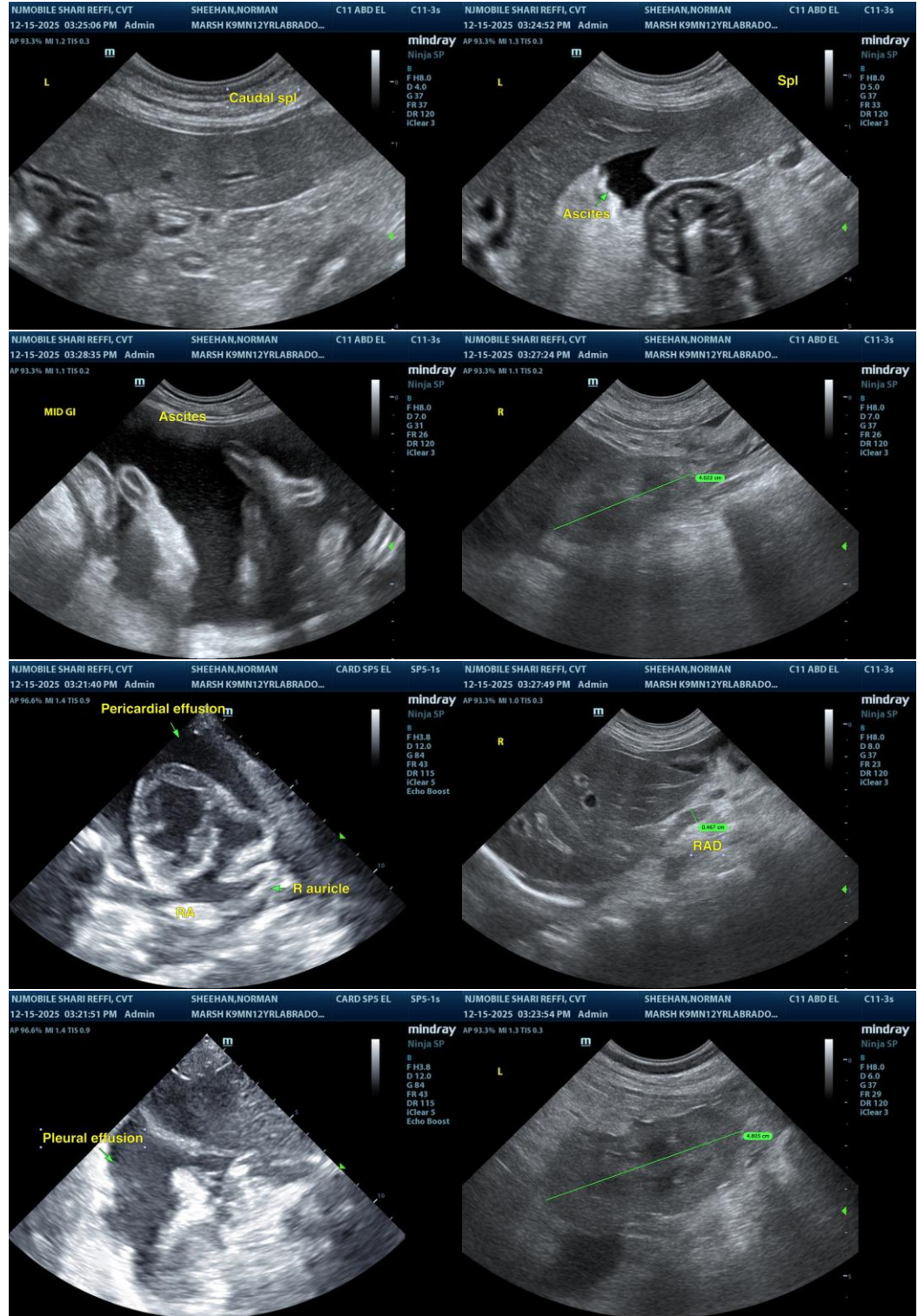
Dr Armani

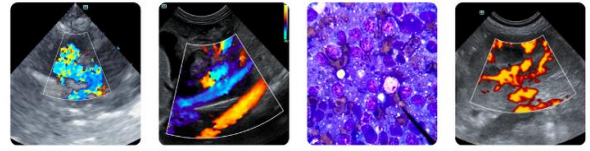
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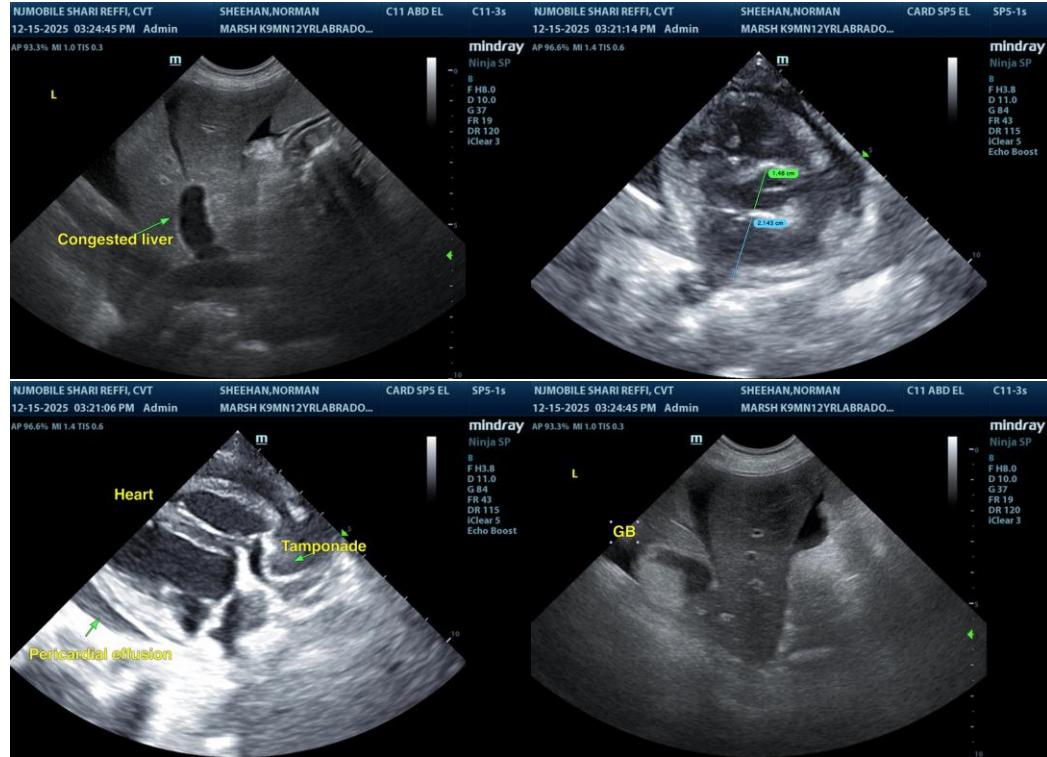
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The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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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