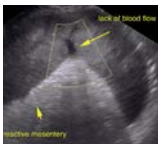
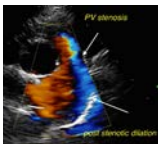
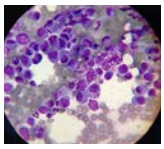
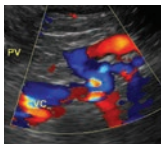
SonoPath
Clinical Sonography & Telecytology
EDUCATIONAL TELECONSULTATION SERVICES™

SonoPath.com
1-800-838-4268 info@sonopath.com

PATIENT

Robin Dunlop

SPECIES

Canine

BREED

Pit Bull

SEX

Spayed Female

AGE

7 Years

WEIGHT

68.5 Pounds

INTERPRETED BY

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

IMAGING PERFORMED BY

Diane McFadden

HOSPITAL NAME

Newton Vet Hospital

REFERRING VET

Dr. Chabora

INVOICE

25305

DATE

9/10/21

PRESENTING CLINICAL SIGNS

sudden collapse

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			1.36	1.35	30.2	61.3	0.35
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	90	1.6	1.1		4.1	4.0	

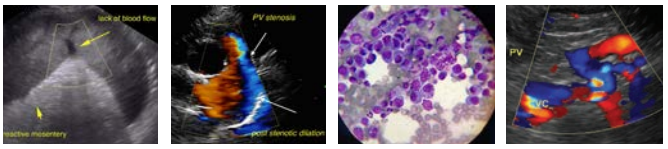
Cardiac Presentation

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. Minor centralized mitral valve insufficiency was present. 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 mildly subnormal 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. Minor tricuspid insufficiency was present on doppler assessment. 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. No overt evidence of arrhythmogenic disease.

Urinary System

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

Normal size and margination were present in the kidneys. A normal 1:3 cortex / medulla ratio and normal corticomedullary definition were maintained. The echogenicity of the cortex was similar to or



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slightly less than normal liver parenchyma while the medulla echogenicity was hypoechoic to the cortex with no evidence of pelvic dilation. The left kidney measured 6.7 cm. The right kidney measured 7.3 cm.

Adrenal Glands

The adrenal glands were uniform in size and contour with a uniformly hypoechoic parenchyma. The left adrenal gland measured 2.8 cm length x 0.60 cm at the caudal pole. The right adrenal gland measured 2.2 cm length x 0.67 cm at the caudal pole.

Spleen

The spleen exhibited a finely textured and homogenous parenchyma which was hyperechoic to the liver and renal cortical parenchyma. A solitary, non-homogeneous, non-expansive nodule was noted in the subjective mid to craniolateral spleen, measuring 2.2 cm in diameter. 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.

Liver

The liver was subjectively normal in size, structure, and contour. The liver parenchyma was uniform and hypoechoic to the spleen with a mild coarse echotexture. The hepatic and portal vasculature were normal in appearance without signs of congestion. The gallbladder was non-distended in size with thin walls and primarily anechoic luminal content. The cystic and common bile ducts were normal.

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.

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.

Pancreas

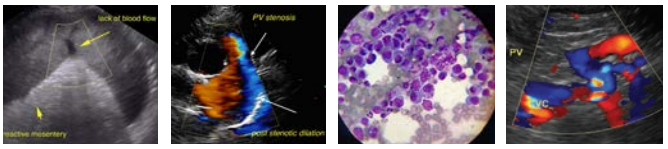
The parenchyma of the left limb, body and right limb of the pancreas presented isoechoic to the adjacent omental fat. A normal curvilinear capsule contour of the pancreas was present. The visible pancreatic duct was normal. No signs of active inflammation or neoplastic disease was evident.

ULTRASONOGRAPHIC FINDINGS

- Overtly normal cardiac structure with mild subjective subnormal myocardial contractility
- Mild mitral valve and tricuspid valve insufficiency
- Non-specific, non-expansive splenic nodule

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

No evidence of structural cardiomyopathy or arrhythmogenic disease. Potential for intermittent or paroxysmal arrhythmia may be possible. ECG assessment or potential holter monitor may be indicated. The mild subjective subnormal contractility is non-specific and may be a normal patient or age related variant. The potential for emerging cardiomyopathy however cannot be definitively excluded. At this time, the lack of left atrial enlargement, left or right heart volume overload or evidence of clinical pulmonary hypertension indicates that the risk for future complication is low. Correlation with CBC/Chem panel, T4 levels and urinalysis recommended to assess for underlying metabolic disease.



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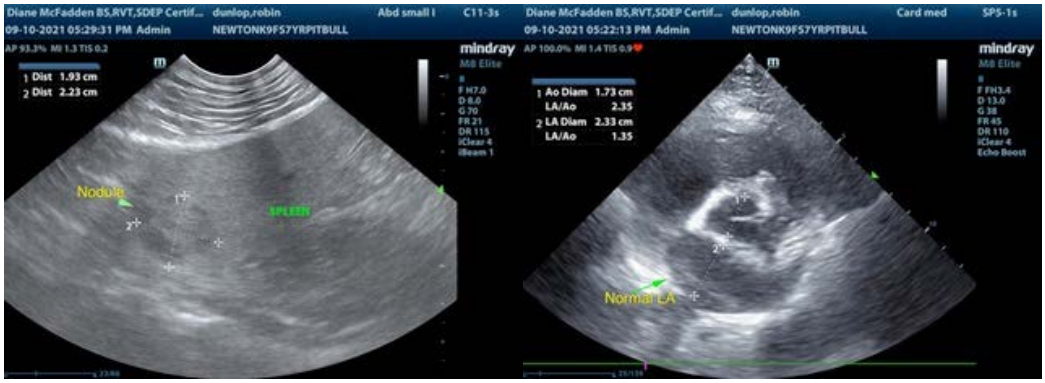
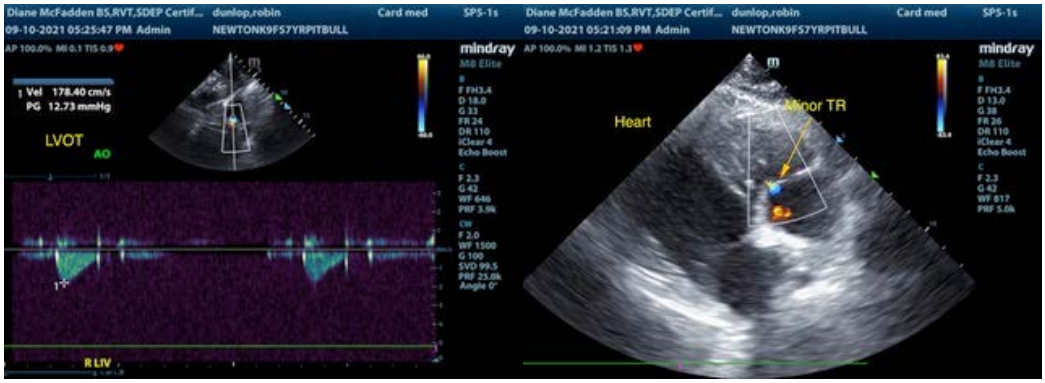
Diet history could be considered if clinically indicated. At this time, no specific cardiac medications recommended. However, continued monitoring is suggested with recheck echocardiogram recommended in 6 months, sooner if continued collapsing episodes or clinical signs consistent with heart disease develop.

Potential etiologies for the splenic nodule may include benign process such as nodular hyperplasia, extramedullary hematopoiesis, hematoma, infection, infarction, or neoplasia. Neoplasia is considered a less likely differential diagnosis, given the non-expansive nature of the nodule, yet cannot be definitively excluded. Ultrasound guided FNA of the nodule using 25-gauge needle and assuming normal coagulation parameters may be considered. Otherwise, sonographic monitoring of the splenic nodules for any changes in size or appearance with initial recheck in 3-4 weeks would be a more conservative approach.





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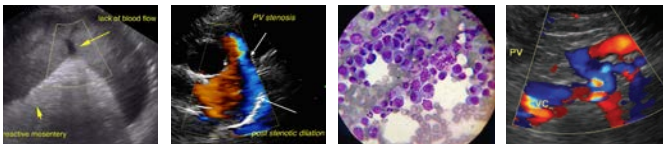

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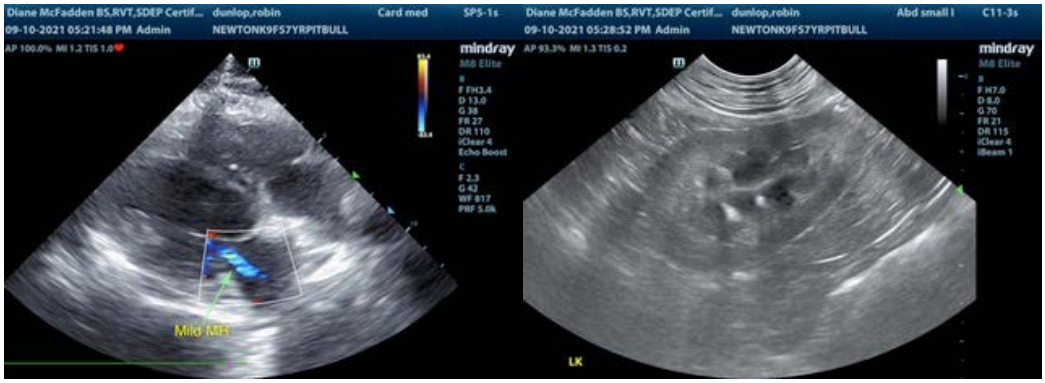

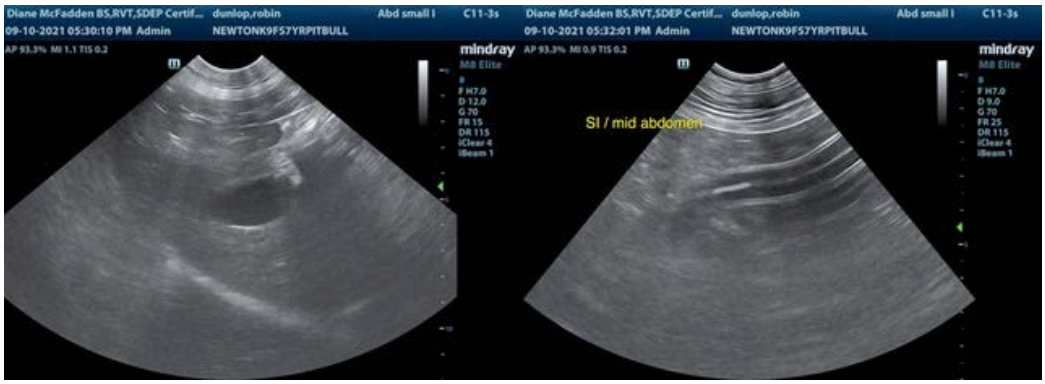

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The information and recommendations provided are based on the images presented by the referring veterinarian. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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.

R. McKenzie Daniel, DVM, DABVP (Canine / Feline Practice)
info@SonoPath.com