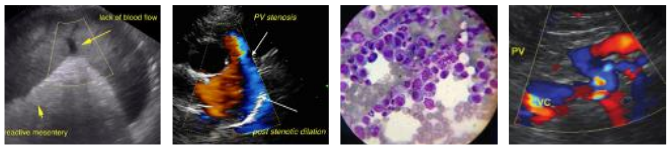
SonoPath
Clinical Sonography & Telecytology
EDUCATIONAL TELECONSULTATION SERVICES™



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

PATIENT

Griffin Ferguson

SPECIES

Canine

BREED

Jack Russell Terrier Mix

SEX

Neutered Male

AGE

17 Years

WEIGHT

30.8 Pounds

INTERPRETED BY

Eric Lindquist, DMV DABVP, Cert. IVUSS

IMAGING PERFORMED BY

Diane McFadden

HOSPITAL NAME

Newton VH

REFERRING VET

N/A

INVOICE

14999

DATE

5/2/22

PRESENTING CLINICAL SIGNS

History: cardiomegaly, hepatomegaly, episode of collapse yesterday morning; attacked in the neck area by a dog on 4/28, pulmonary edema noted on 4/29. On unasyn and carprofen.

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	<1.3	28-40	40-100	<0.6
PATIENT	5.0	--	1.2	1.25	51	83	NM
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	68	1.90	--	--	2.0	3.05	--

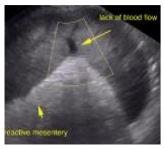
Cardiac Presentation

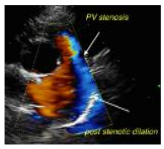
The echocardiogram in this patient demonstrated normal **left atrial** size based on 3 different LA measurement methods. Chamber volumes and echogenicity were normal. Doppler indicated minor mitral insufficiency. The **left ventricle** presented thicknesses with linear contour and was not dilated nor 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. Mild aortic insufficiency noted at 2.69 m/s. Moderate to severe **tricuspid** insufficiency noted at 3.80 m/s with mild right atrial enlargement. The right ventricle was unremarkable. The right atrial/left atrial ratio was 1:1 on 4 chamber long axis. 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.

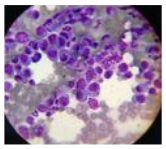
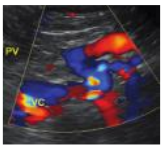
Urinary System

The **urinary bladder**, trigone, and pelvic urethra presented normal thicknesses and normal tone. The ureters were not visible which is normal. No uroliths or sediment were visualized and anechoic urine was present. No evidence of inflammatory or neoplastic changes were noted. Ureteral papillae were normal. The pelvic urethra was imaged 3.0 cm beyond the cystourethral junction.

The **kidneys** revealed largely normal size and structure, corticomedullary definition and ratio (cortex 1/3 of medulla) were essentially maintained with some mild to moderate age-related loss of





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curvilinear patterns regarding the capsule and C/M junction. The cortices presented largely uniform texture with some increased echogenicity expected for his age patient. Medullary structure differed distinctly from that of the cortex. Pyelectasia was noted in both kidneys. Mineralization was present in the kidneys. The right kidney measured 6.23 cm. The left kidney measured 5.93 cm.

Adrenal Glands

Both **adrenal glands** were visualized and recognized as having normal shape, size, position and echogenicity for this breed. The phrenic vasculature, glandular echogenicity and detail were unremarkable. Capsule, cortex, and medullary definition were normal for this age patient. The left adrenal gland measured 2.1 cm x 0.69 cm at the caudal pole and 0.69 cm at the cranial pole.

Spleen

The **spleen** presented a smooth homogeneous parenchyma hyperechoic to liver and renal cortical parenchyma. The capsule was smooth without noticeable expansion or deviation from within the spleen or adjacent pathology. The splenic vasculature demonstrated normal volume without signs of congestion or thrombosis. No sonographic evidence of acute or chronic inflammatory, neoplastic, or infarctual changes were noted.

Liver

The **liver** in this patient was swollen and irregular with nodular changes in the left lobe. Projection of the left lobe in the caudal abdomen noted. A hepatic cyst was noted. in the left medial liver, measuring 2.0 cm x 1.0 cm. The left lateral lobe of the liver revealed multifocal areas of capsular expansion. The gallbladder and common bile duct were unremarkable. A minor amount of debris was noted in the gallbladder. Minor hepatic vein dilation was noted owing to the increased right sided cardiac pressures.

Gastrointestinal

The **stomach** was deviated caudally. The small intestine and colon were unremarkable.

Pancreas

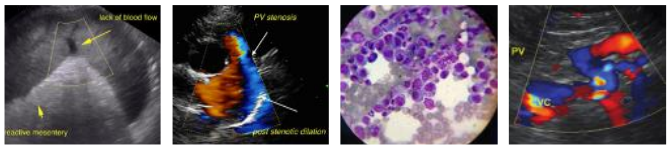
The base and limbs of the **pancreas** were observed to be largely isoechoic to surrounding omental fat. Pancreatic duct and capsular contour were acceptably normal and parenchyma respected normal curvilinear patterns. No overt evidence of active inflammatory or neoplastic disease was noted.

ULTRASONOGRAPHIC FINDINGS

- Tricuspid insufficiency
- Moderate pulmonary hypertension
- Mitral insufficiency, compensated
- Minor right sided cardiac enlargement
- Nodular irregular left liver with benign cysts and minor hepatic vein dilation
- Age-related renal changes with mineralization and pyelectasia
- Stomach deviated caudally

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

Assessment for UTI warranted. FNA of the left lateral liver warranted. Sildenafil (1 mg/kg BID x2 weeks increase then to 1.5 mg/kg BID) could be considered given the increased tricuspid velocities consistent with moderate pulmonary hypertension. Low dose spironolactone could also be



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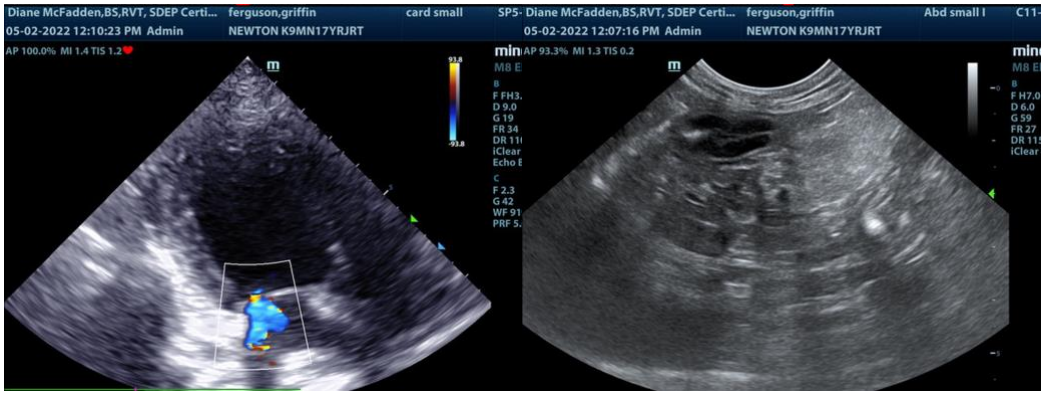
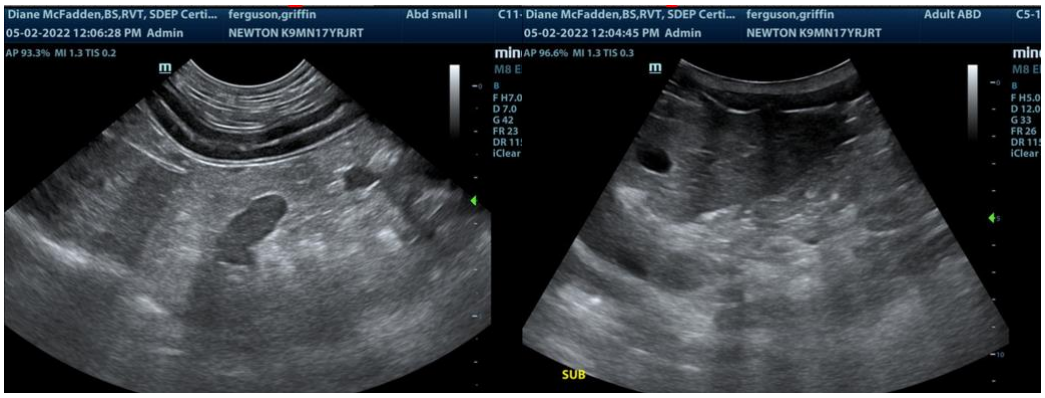
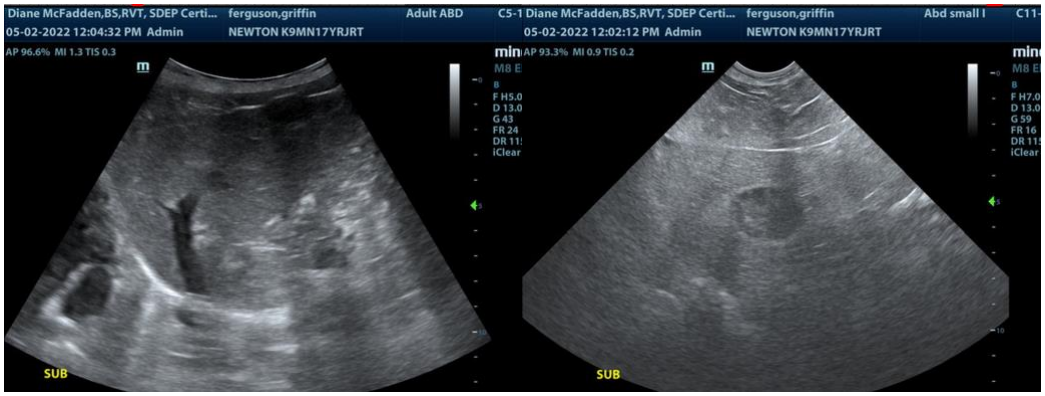
considered. The presence of hepatic vein dilation would indicate emerging right sided failure. Recheck echocardiogram is recommended in 1 month. Given the collapse, if under exercise, this may have been owing to pulmonary hypertension. Blood pressure measurements indicated.







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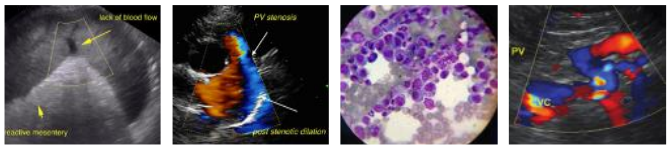

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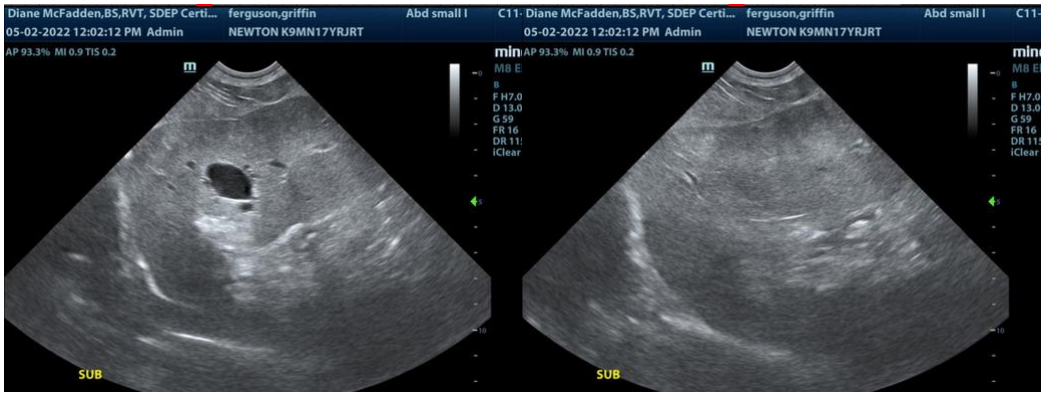

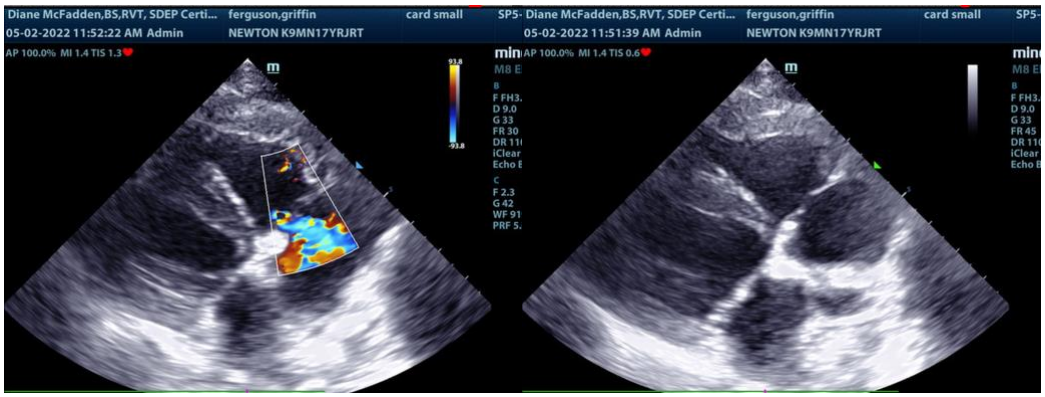

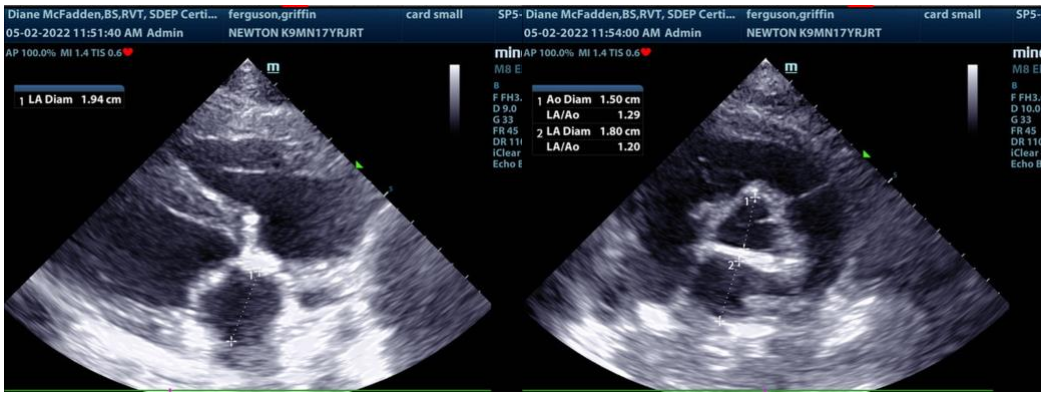

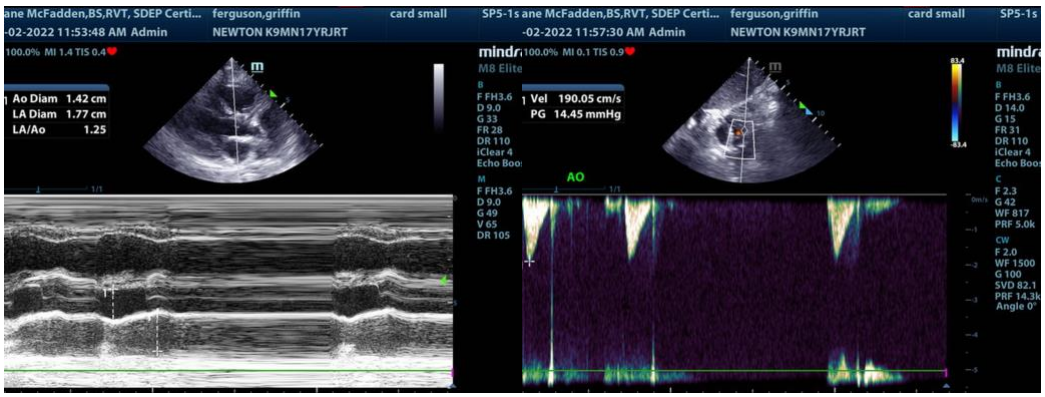

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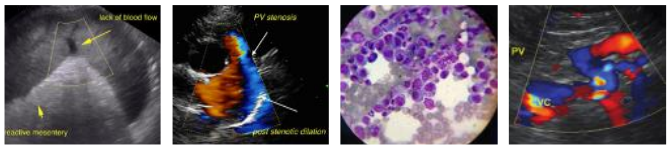

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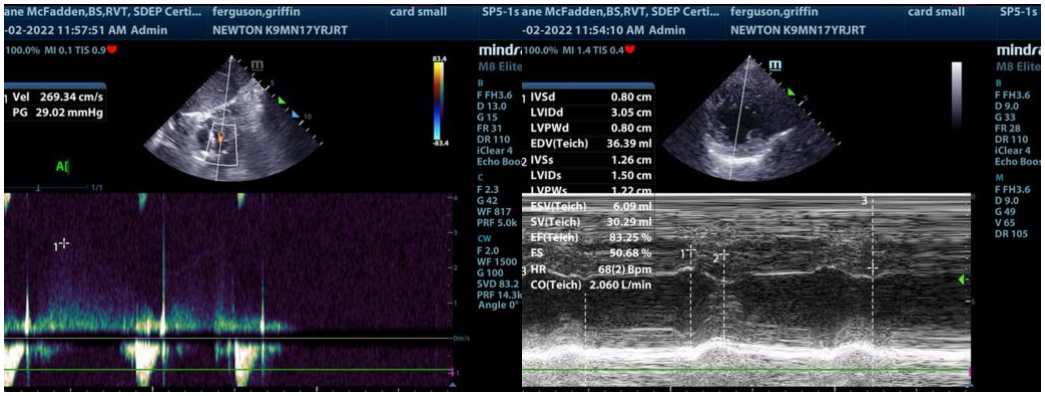

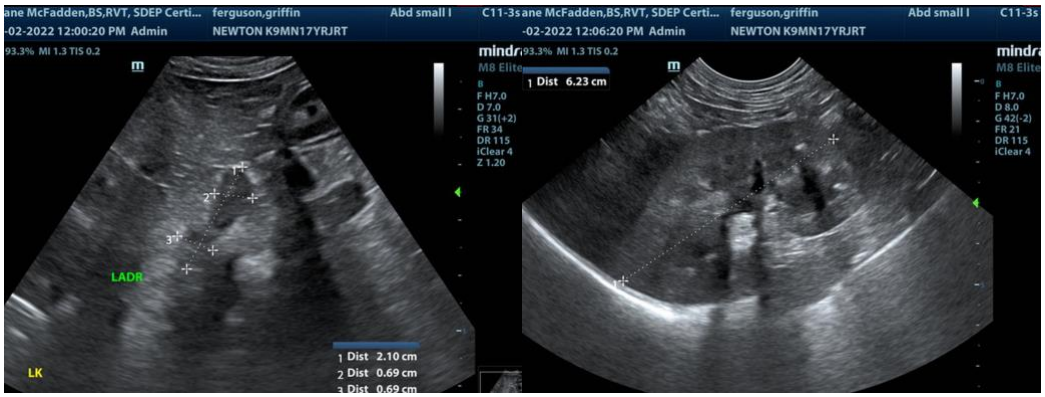

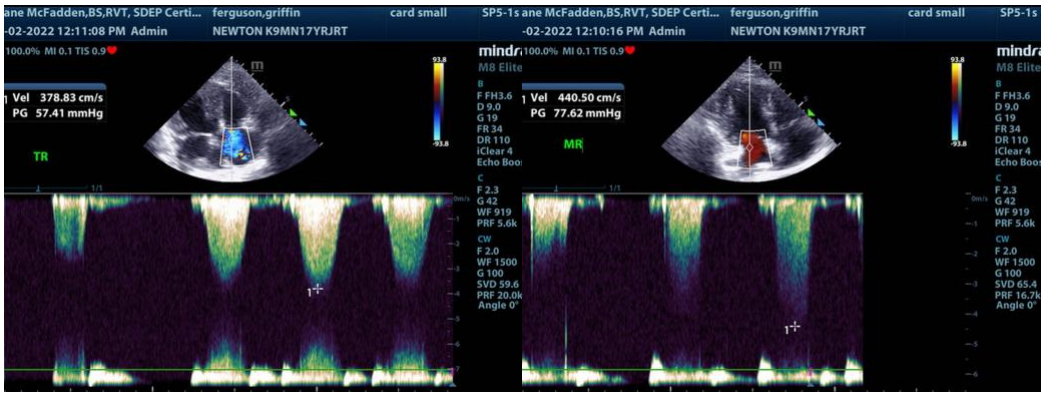

The information and recommendations provided are based on the images presented by the referring veterinarian. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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.

Eric Lindquist, DMV, DABVP, Cert. IVUSS, CEO of SonoPath.com
info@SonoPath.com