SonoPath
Clinical Sonography & Telecytology
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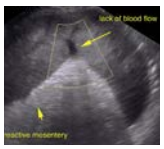
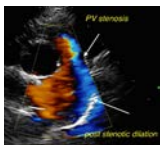
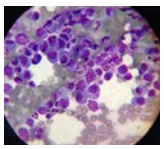
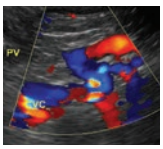

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1-800-838-4268 info@sonopath.com

PATIENT
Rocky Silvera

SPECIES
Canine

BREED
Yorkshire Terrier

SEX
Neutered Male

AGE
11 Years

WEIGHT
14.4 Pounds

INTERPRETED BY
Eric Lindquist, DMV DABVP, Cert. IVUSS

IMAGING PERFORMED BY
Diane McFadden

HOSPITAL NAME
Newton Vet Hospital

REFERRING VET
Dr. Chen

INVOICE
24531

DATE
8/11/21

PRESENTING CLINICAL SIGNS

abdominal distension, hx of heart murmur. Coughing, On enalapril 2.5mg sid, vetmedin 2.5 mg x 1/4 tab bid, proin 50 mg x 1/4 bid

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	5.39	3.7	2.45	2.26	47	80	0.1
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	174	1.65	0.6		4.0	3.13	

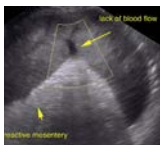
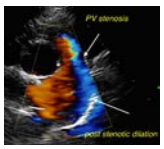
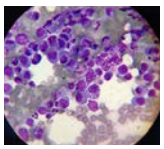
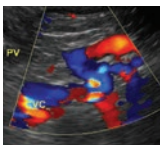
Cardiac Presentation

The echocardiogram for this patient presented excessive **left atrial size** expressed both in the LA/AO and LA max measurements. Severe volume overload noted. The cranial and caudal **mitral** valve leaflets presented vegetative thickening consistent with endocardiosis. Doppler indicated measurable insufficiency. Prolapse of the anterior mitral valve leaflet noted. 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. **Right atrial** enlargement was also present with severe volume overload. **Tricuspid** insufficiency noted. 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

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 **kidneys** revealed largely normal size and structure, corticomedullary definition and ratio (cortex 1/3 of medulla) were essentially maintained with some age-related loss of curvilinear patterns regarding the capsule and C/M junction. The cortices presented largely uniform texture with some increased

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echogenicity expected for his age patient. Medullary structure differed distinctly from that of the cortex and no evidence of pelvic dilation was present. Mineralization noted in both kidneys. The left kidney measured 4.07 cm. The right kidney measured 4.72 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 right adrenal gland measured 1.85 cm x 0.54 cm at the caudal pole and 0.84 cm at the cranial pole. The left adrenal gland measured 1.74 cm x 0.66 cm at the caudal pole and 0.62 cm at the cranial pole.

Spleen

The **spleen** in this patient was uniform, yet volume contracted. Hydration status should be assessed.

Liver

The **liver** presented swollen contour and mild increased portal markings. Occasional parenchymal cysts noted. The gallbladder wall was mildly thickened with excessive debris present. Hepatic veins were dilated as was the vena cava, passive congestion pattern.

Gastrointestinal

Examination of the **gastrointestinal tract** revealed a stomach and intestine free of stasis, of normal wall thickness, acceptable curvilinear mural detail, and peristaltic activity. Small and large intestine demonstrated normal luminal chyme and stool consistency respectively. No obstructive or overt infiltrative disease was noted. No associated abnormal lymphatic activity was noted.

Pancreas

The base and limbs of the **pancreas** were observed to be largely isoechoic to surrounding omental fat. Some parenchymal remodeling, however, with mild deviation from curvilinear normalcy was observed. Pancreatic duct and capsular irregularities were present consistent with age related changes. If pain upon imaging (+ Murphy sign) was present or if the patient is focally painful in subxyphoid palpation then low-grade smoldering chronic pancreatitis should be suspected.

Free Abdomen

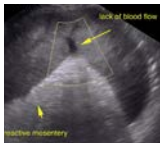
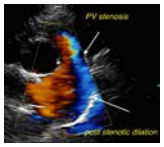
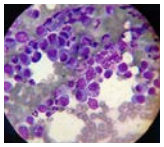
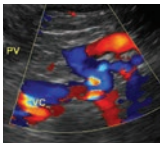
Enhanced mesentery noted owing to a large amount of ascites.

ULTRASONOGRAPHIC FINDINGS

- Left and right-sided congestive heart failure – consistent with advanced Stage C1 or D1 valvular disease
- Passive congestion liver pattern
- Volume contracted spleen
- Ascites and reactive mesentery

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

This patient is in a precarious cardiac presentation. Cage rest over the next 3-5 days with only short leash walks recommended. This patient is at high risk for sudden death. Recheck echo in 10 days. If the patient survives this immediate episode, recheck echo in 7 days. Palliative abdominocentesis could be considered to render the patient more comfortable. Continuation of the current Enalapril and Vetmedin therapy warranted with aggressive increase in Lasix at 2-4 mg/kg BID, Spironolactone at 1-2 mg/kg BID,

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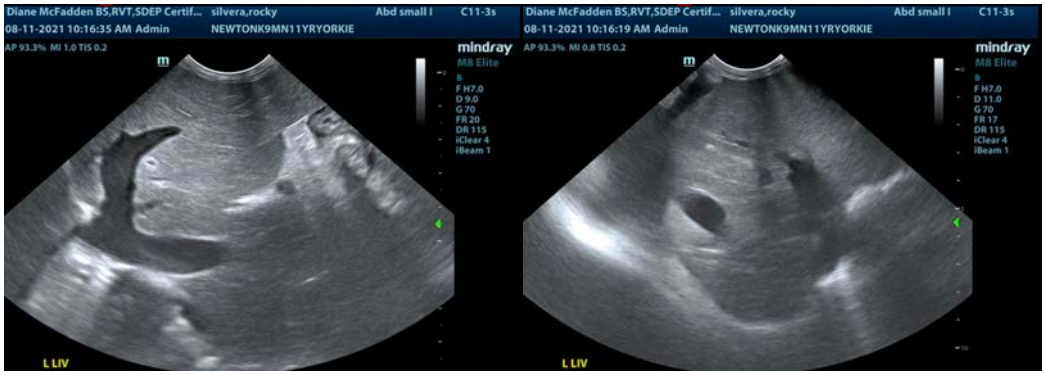
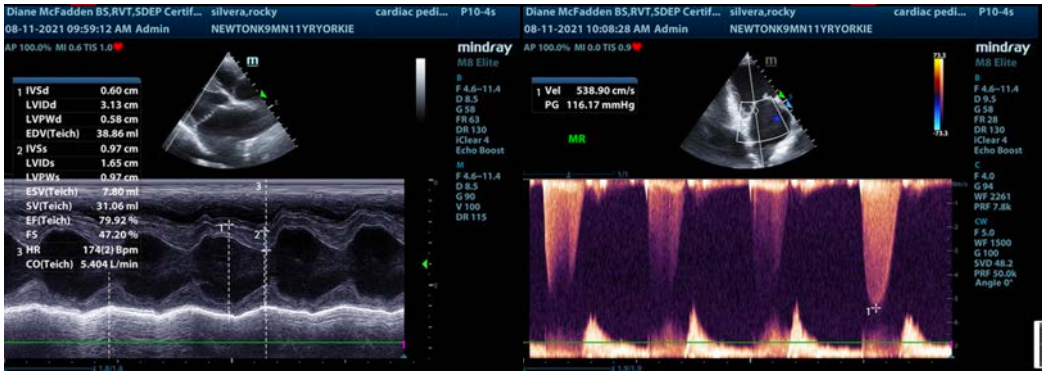
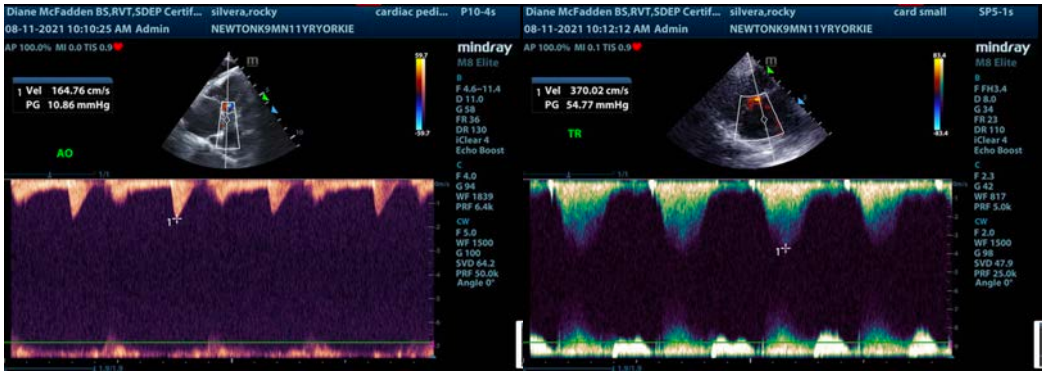
and Sildenafil at 1 mg/kg BID. Assessment of BUN, creatinine, USG, chest radiographs and blood pressure as well as clinical exam ideal in 7-10 days. Basal respiratory rate should be <20/min.







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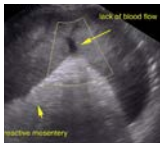
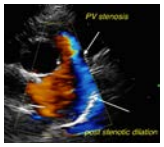
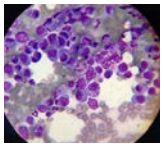
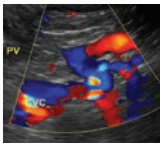

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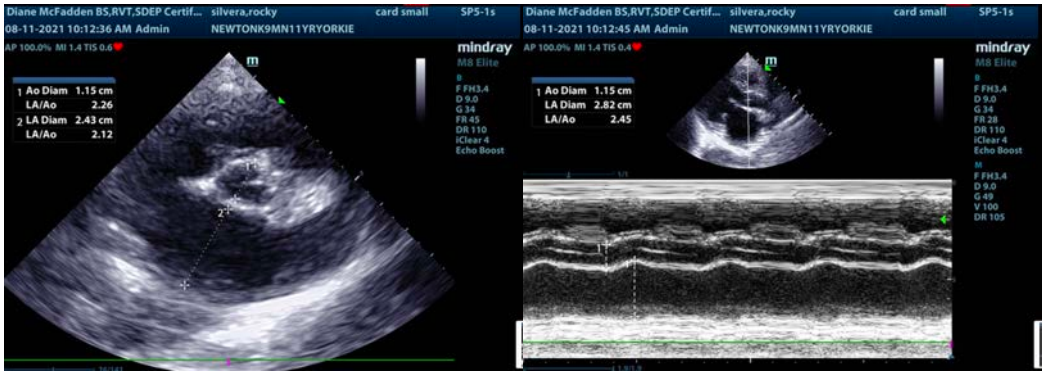

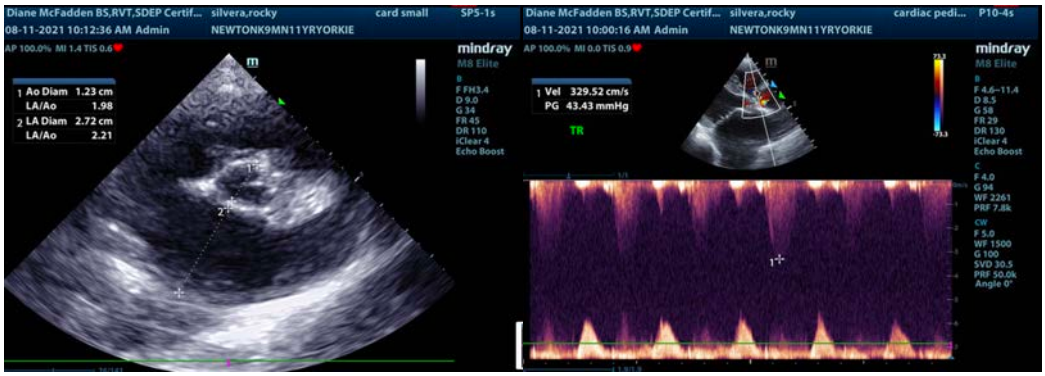

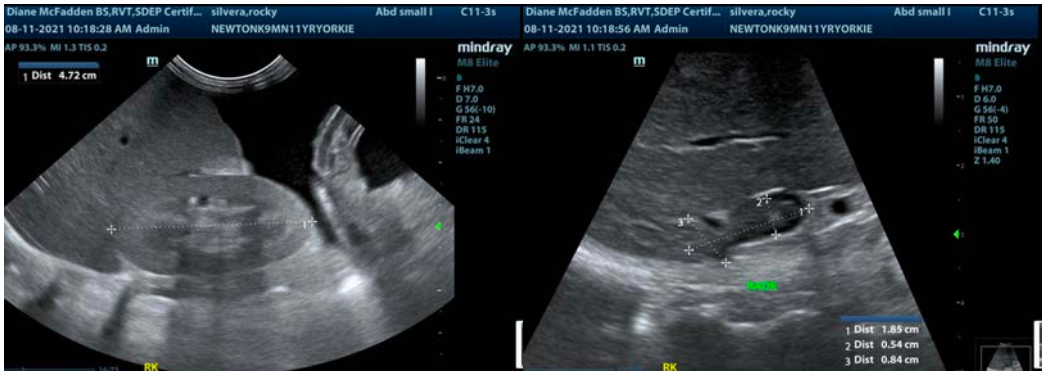

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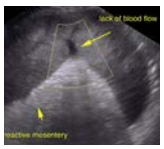
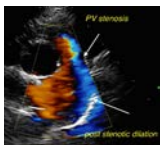
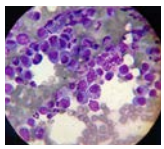
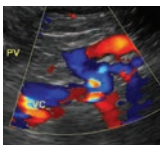

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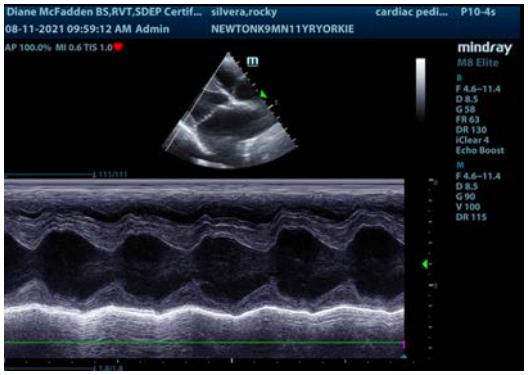

The information and recommendations provided are based on the images presented by the referring veterinarian. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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