

PATIENT

Molly Dempsey

SPECIES

Canine

BREED

Shih Tzu

SEX

Spayed Female

AGE

13 Years

WEIGHT

7.6 Pounds

INTERPRETED BY

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

Sarah Pender, CVT

HOSPITAL NAME

SVS Imaging QC

REFERRING VET

Dr. Shari Hagerty

INVOICE

24647

DATE

8/13/21

PRESENTING CLINICAL SIGNS

Recently presented for not eating/drinking, straining to defecate/loose stool, labored breathing. 7/29/21 started on Enalapril 2.5mg 1/2tab PO BID and Furosemide 12.5mg 1/2 tab PO BID, P was not tolerating meds well so decreased dosage to Enalapril 2.5mg 1/2 tab PO SID and Furosemide 12.5mg 1/4 tab PO BID, started Cerenia 16mg 1/2 tab SID, Famotidine 10mg 1/4 tab BID - no change in eating/drinking/stool. Added Metronidazole and Mirtazapine 8/12/21.

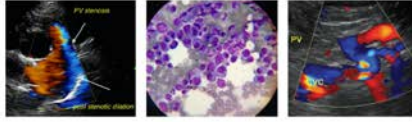
Abnormal PE/Chem/CBC/UA Results: Grade IV Murmur L side, previously diagnosed. Radiographs 7/29/21 revealed cardiomegaly and L atrial enlargement. Increase in ALP, ALT and BUN.

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	5.1	2.2	NM	2.2	52.8	85.4	0.18
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	156	1.0	0.7		3.0	2.8	

Cardiac Presentation

The echocardiogram for this patient presented excessive **left atrial size** expressed both in the LA/AO and LA max measurements. The cranial and caudal **mitral** valve leaflets presented vegetative thickening consistent with endocardiosis. Doppler indicated measurable eccentric insufficiency. Minor prolapse of the septal leaflet was present. The **left ventricle** presented normal thicknesses with primarily maintained linear contour with increased left ventricular volume. 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 adequate linear morphology. Doppler assessment revealed minor tricuspid valve insufficiency. 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.

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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.

SPECIES

Canine

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 loss of corticomedullary symmetry and definition expected for the age of the patient. No evidence of pelvic dilation was present. Pinpoint dystrophic medullary mineral was present in both kidneys. The left kidney measured 3.7 cm. The right kidney measured 3.8 cm.

BREED

Shih Tzu

Adrenal Glands**SEX**

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The adrenal glands were uniform in size and contour with a uniformly hypoechoic parenchyma. The left adrenal gland measured 0.32 cm at the cranial pole and 0.41 cm at the caudal pole. The right adrenal gland measured 0.78 cm at the cranial pole and 0.47 cm at the caudal pole.

AGE

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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.

WEIGHT

7.6 Pounds

Liver**INTERPRETED BY**R. McKenzie Daniel, DVM,
DABVP (Canine and Feline)

The liver was mildly enlarged in size, structure, and contour. The liver parenchyma was mildly nonuniform and hypoechoic to the spleen with a moderate coarse echotexture and subjective mild to benign parenchymal remodeling. The hepatic and portal vasculature were normal in appearance without signs of congestion. The gallbladder was non distended in size with moderate, mildly inspissated yet non-organized gallbladder debris. The cystic duct and common bile ducts were normal without evidence of dilation.

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Gastrointestinal**HOSPITAL NAME**

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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. Gastric body wall measured 0.43 cm.

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. Duodenum wall measured 0.30 cm. Jejunum wall measured 0.38 cm.

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The colon walls presented intact yet prominent wall layering with mild thickened to echogenic submucosa. Subjective semiformal to soft feces present. Colon wall measured 0.14 cm.

Pancreas**INVOICE**

24647

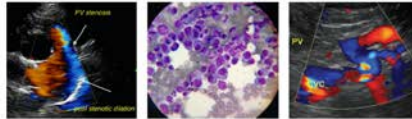
The parenchyma of the left limb, body and right limb of the pancreas presented isoechoic to the adjacent omental fat. A normal curvilinear capsule contour of the pancreas was present. The visible pancreatic duct was normal. No signs of active inflammation or neoplastic disease was evident.

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Free Abdomen

No overt lymphadenopathy or peritoneal effusion was present.



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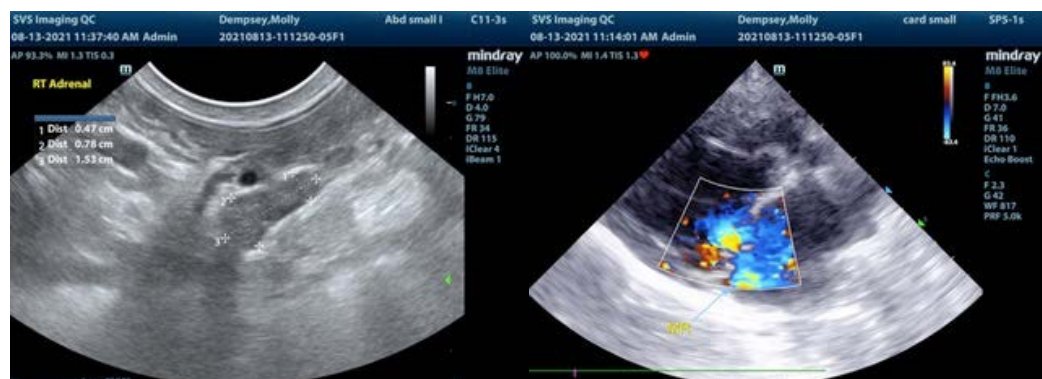
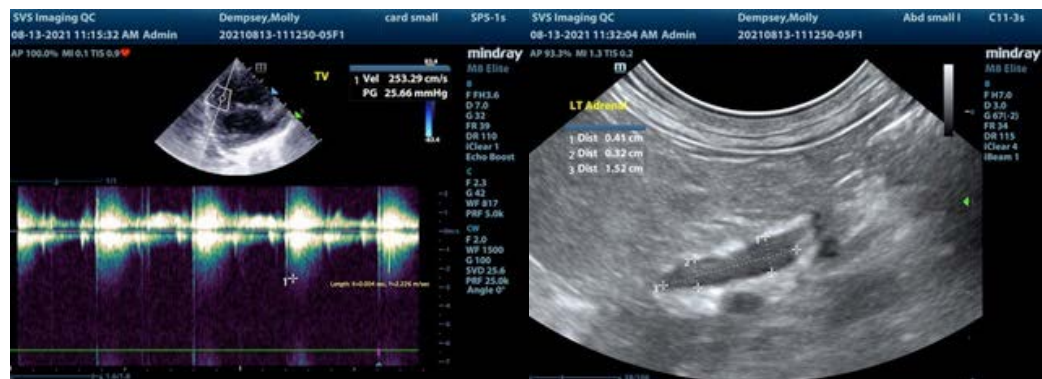
ULTRASONOGRAPHIC FINDINGS

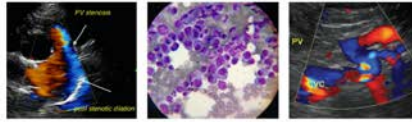
- Chronic mitral valve disease with minor septal leaflet prolapse (ACVIM B2-C)
- Tricuspid valve insufficiency – estimated pulmonary pressure gradient not consistent with clinical pulmonary hypertension.
- Mild chronic renal changes with pinpoint dystrophic medullary mineral
- Benign hepatopathy
- Moderate mildly inspissated gallbladder debris (non-mucocele)
- Subjective mild gastroenterocolitis

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

The cause of the murmur is chronic degenerative valvular changes with secondary eccentric mitral valve insufficiency. Concurrent mild tricuspid valve insufficiency also present, yet no overt evidence of additional clinical issues such as clinical pulmonary hypertension or systolic dysfunction. The moderate left atrial enlargement and increased left ventricular volume indicate that the current and future risk is elevated with potential for current clinical signs associated with increased left heart volume. Pimobendan 0.3 mg/kg PO BID and, if evidence of edema on thoracic radiographs, lowest effective dose of Furosemide recommended. ACE inhibitor medication could also be considered if systemic blood pressure is >130. Baseline monitoring of at-home resting respiration rate recommended. Recheck echocardiogram suggested in 6 months, sooner if clinical signs consistent with heart disease are noted.

The appearance of the gallbladder was not consistent with a gallbladder mucocele, yet continued sonographic monitoring as well as assessment for evidence of increasing cholestasis or cranial abdominal/subxiphoid discomfort suggested. Hepatosupportive medications including Denamarin and Ursodiol recommended. Continued supportive care for mild gastroenterocolitis would be appropriate.





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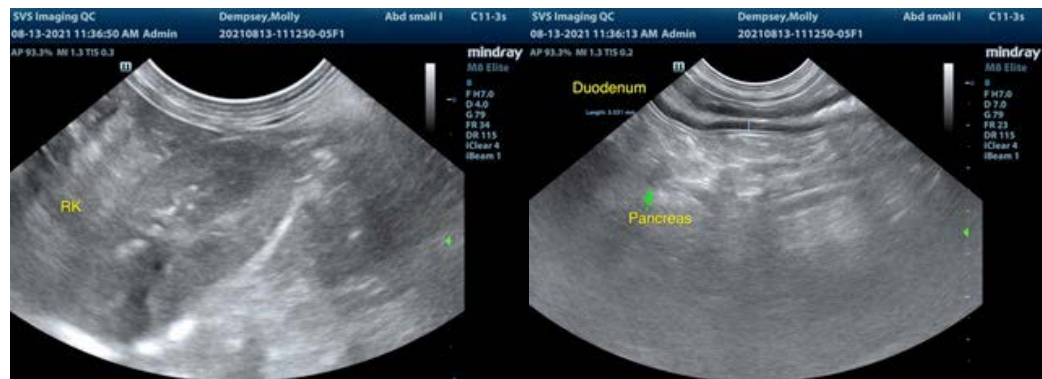
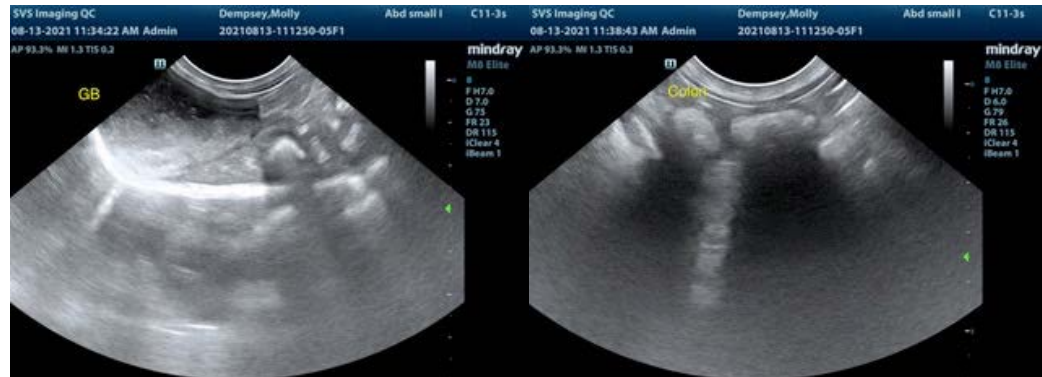
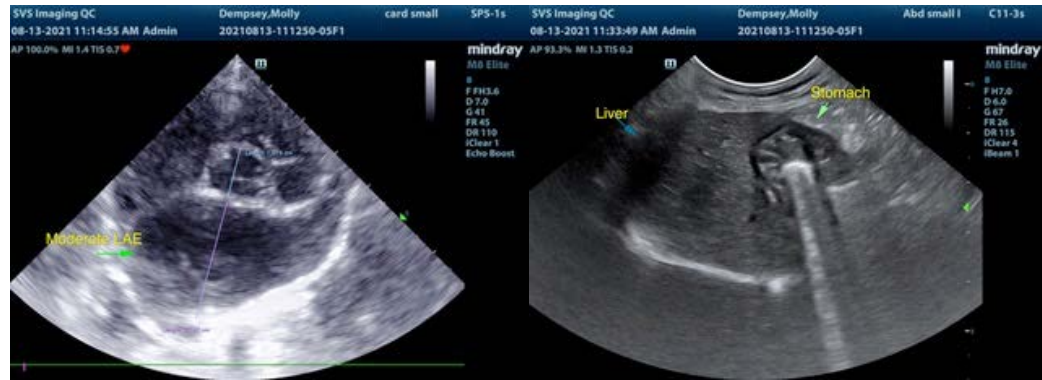
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The information and recommendations provided are based on the images presented by the referring veterinarian. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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