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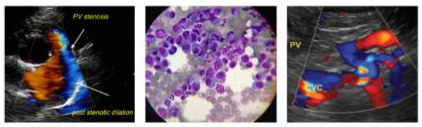

SonoPath
Clinical Sonography & Telecytology
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1-800-838-4268 info@sonopath.com SonoPath.com

PATIENT

Moose Holliday

SPECIES

Canine

BREED

Yorkshire Terrier Mix

SEX

Neutered Male

AGE

14 Years

WEIGHT

15 Lbs.

INTERPRETED BY

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

IMAGING PERFORMED BY

Sarah Pender, CVT

HOSPITAL NAME

SVS Imaging QC

REFERRING VET

Dr. Trammell

INVOICE

13937

DATE

2/14/22

PRESENTING CLINICAL SIGNS

History: Presented April 2021 for coughing; DVM diagnosed extrathoracic tracheal collapse and intrathoracic mass. O' now wants to pursue dental cleaning.

Abnormal PE/Chem/CBC/UA Results: Elevated liver values. Lipoma on right lateral thorax. Performed FNA on liver and spleen at time of ultrasound

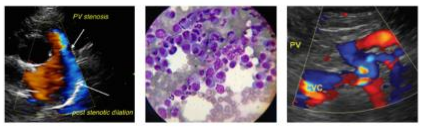
ULTRASONOGRAPHIC EXAMINATION OF THE HEART & ABDOMEN

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	--	2.0	NM	1.4	47.2	80.7	0.29
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	BELOW	BELOW	BELOW	BELOW
PATIENT	124	1.2	0.73	--	2.5	2.4	--

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. The cranial and caudal **mitral** valve leaflets presented vegetative thickening consistent with endocardiosis. Doppler indicated minor eccentric 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. 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 mild thickening with mild TV 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** and surrounding pericardial pulmonary tissue were free of masses in the visible window.

Urinary System



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The urinary bladder, trigone, cystourethral junction, and visible pelvic urethra 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 was 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 mild to moderate loss of corticomedullary symmetry and definition expected for the age of the patient. Small cortical cyst present in both kidneys. Minor pyelectasia present in both kidneys. Pinpoint areas of medullary mineral were present. The left kidney measured 4.1 cm in length. The right kidney measured 4.2 cm in length.

Adrenal Glands

The left adrenal gland was normal in size. Mild parenchyma heterogeneity and mild capsule asymmetry was present without suspicion for overt neoplasia. The left adrenal gland measured 0.50 cm width at the caudal pole and 0.60 cm width at the cranial pole.

The right adrenal gland was mildly prominent in size. Mild parenchyma heterogeneity and mild capsule asymmetry was present without suspicion for overt neoplasia. The right adrenal gland measured 0.85 cm width in the cranial pole and 0.63 cm width in the caudal pole.

Spleen

The spleen exhibited normal overall size with primarily maintained symmetrical capsule contour and finely textured homogeneous parenchyma. A focal, mildly hyperechoic nodule was noted adjacent to the hilus, measuring approximately 0.60 cm in diameter was present. This nodule was non-expansive. Concurrent, subtly expansive hypoechoic nodule was present in the splenic tail with subtle associated lateral capsule distortion, measuring 0.5 cm in diameter was present. Splenic vascularity was normal.

Liver

The liver was moderately enlarged, exhibiting increased parenchyma echogenicity with moderate coarse echotexture and generalized hepatic parenchymal remodeling. Intermittent discreet hypoechoic nodules were present. The hepatic and portal vasculature were normal in appearance without signs of congestion.

The gallbladder was non distended in size with mild gallbladder debris. The cystic duct and common bile ducts were normal without evidence of dilation.

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 pancreas exhibited normal size and mild asymmetrical contour with nonuniform hyperechoic to indistinct nodular parenchyma.

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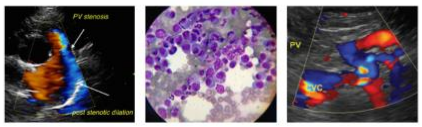

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ULTRASONOGRAPHIC FINDINGS

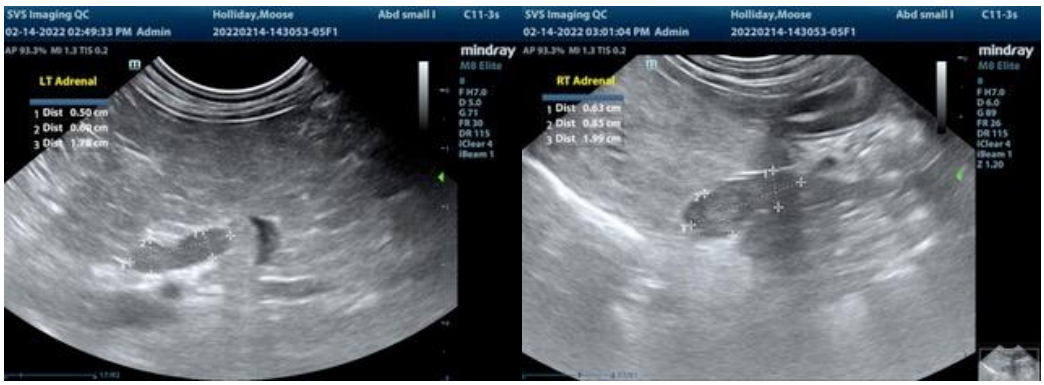
- Compensated chronic mitral valve disease (ACVIM B-1), mild eccentric MR
- Mild TR- estimated pulmonary pressure gradient not consistent with clinical pulmonary hypertension
- Hepatomegaly, exhibiting generalized non-uniform to discreetly nodular parenchyma
- Chronic renal changes, exhibiting cortical cysts and minor pyelectasia
- Non-uniformly echogenic to nodular pancreas
- Mildly prominent right adrenal gland
- Variably echogenic splenic nodules- mild hyperechoic nodule, likely consistent with benign myelolipoma, hypoechoic nodule may represent focal lymphoid hyperplasia, hematopoiesis, splenitis with potential for emerging primary round cell neoplasia.

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

The lack of left or right chamber enlargement indicate that current and likely future risk secondary to mitral and tricuspid valve insufficiency is low. No other clinical issues, such as systolic dysfunction or overt clinical pulmonary hypertension were noted. Given these findings, the coughing in this patient is most likely noncardiogenic in origin. No indication for cardiac medications. Overt evidence of a thoracic mass was not noted. If clinical concern for thoracic mass, thoracic CT could be considered.

The presentation of the liver may indicate vacuolar hepatitis, chronic active hepatitis, cholangiohepatitis, early fibrosis / cirrhosis or other hepatopathy. Neoplasia considered a less likely differential diagnosis yet cannot be excluded. Hepatosupportive medications, including Ursodiol, may prove beneficial.

The mildly prominent right adrenal gland is nonspecific with considerations, including age related variant, functional versus nonfunctional minor adenomatous change, benign hyperplasia, while potential for emerging neoplasia is considered unlikely yet cannot be definitively excluded, screening blood pressure recommended. Further assessment may include hepatic and splenic FNA, obtained at the time of ultrasound for screening cytology. Pending cytology, sonographic monitoring of the splenic nodule as well as the right adrenal gland for evidence of progression with initial recheck in 4-6 weeks would be ideal. Assuming normal blood pressure, no overt anesthetic contraindications associated with either the heart or the abdominal cavity.



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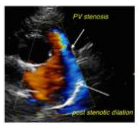

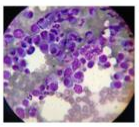

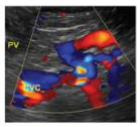

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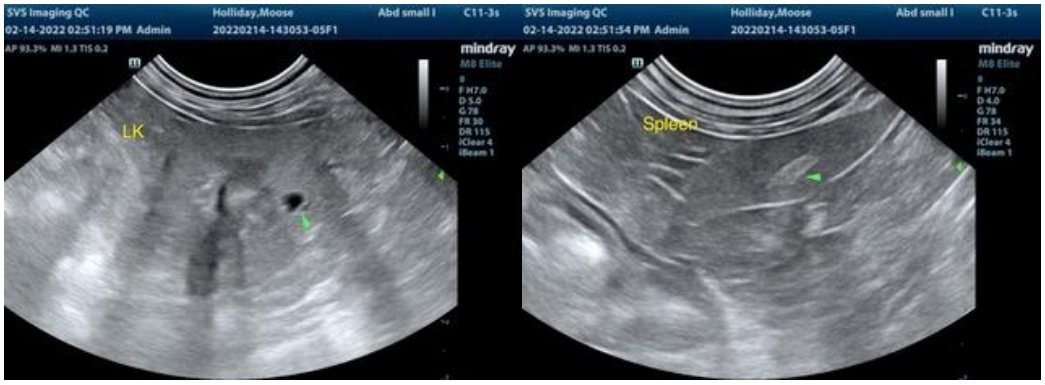

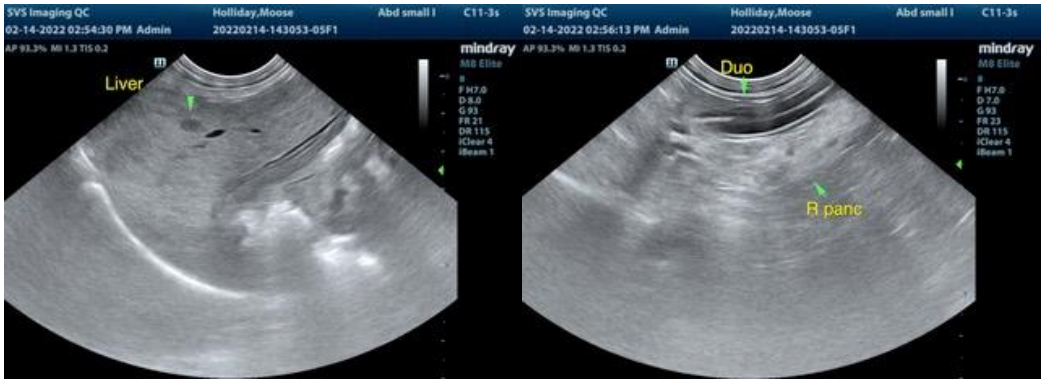

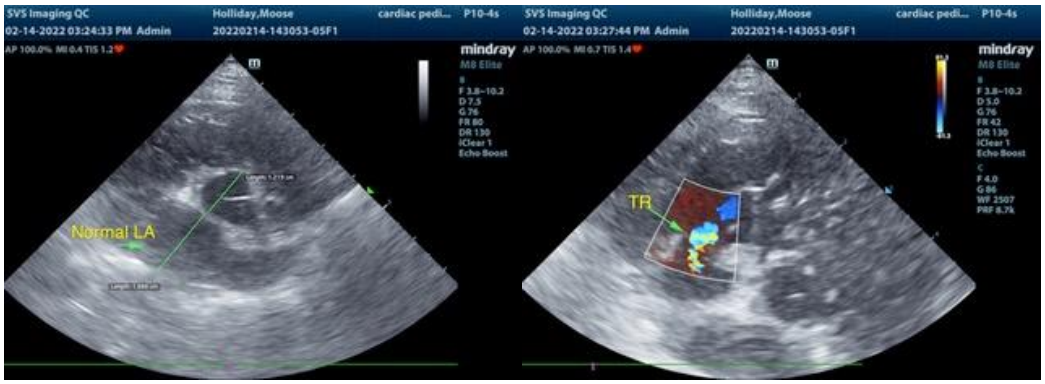

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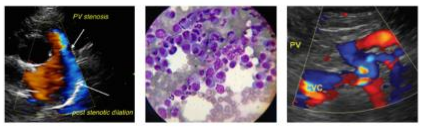

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The information and recommendations provided are based on the images presented by the referring veterinarian. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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.

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