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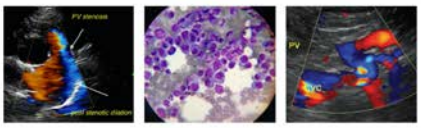


SonoPath
Clinical Sonography & Telecytology
EDUCATIONAL TELECONSULTATION SERVICES™
1-800-838-4268 info@sonopath.com SonoPath.com

PATIENT

Jaxon Thompson

SPECIES

Canine

BREED

English Bulldog

SEX

Spayed Female

AGE

11 Years

WEIGHT

57 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. Haenni

INVOICE

25206

DATE

9/7/21

PRESENTING CLINICAL SIGNS

At annual exam owner mentioned that she had been having some heavy breathing and looked more pot bellied.
Abnormal PE/Chem/CBC/UA Results: Heart was difficult to auscultate. Heart could not been seen on radiographs, liver looked enlarged, and intestines were displaced. TP 8.7, CREA 2.3, BUN 101, Ca 12.6

ULTRASONOGRAPHIC EXAMINATION OF THE HEART & ABDOMEN

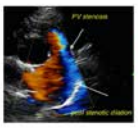
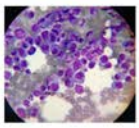
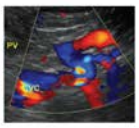
CANINE CARDIAC PARAMETERS	MR VMAX (m/s)	TR VMAX (m/s)	LA/AO (Boon method)	LA/AO (Heart Base; Swe)	FS (%)	EF (%)	EPSS (cm)
NORMAL PARAMETER	4.5-5.5	<2.7	1.3	<1.6	28-40	40-100	<0.6
PATIENT		2.6	1.3	1.25	46.7	80.4	0.2
CANINE CARDIAC PARAMETERS	**HR** (BPM)	**AV VMAX** (m/s)	**PV MAX** (m/s)	**BODY WEIGHT** (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	128	1.0	1.0		3.0	2.7	

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 mild subjective vegetative thickening consistent with mild endocardiosis. Doppler indicated mild 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 adequate linear morphology. Minor tricuspid valve insufficiency noted on color doppler. 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. No overt echographically detectable evidence of infiltrative disease. The cranial mediastinum and pericardial regions were free of overt masses in the visible window.

Urinary System

The urinary bladder 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.

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The areas of the uterine stump and aortic trifurcation were free of pathology.

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 mild loss of corticomedullary symmetry and definition expected for the age of the patient. No evidence of pelvic dilation was present. The left kidney measured 6.9 cm. The right kidney measured 7.1 cm.

Adrenal Glands

The bilateral adrenal glands were normal in size. Mild parenchyma heterogeneity and mild capsule asymmetry was present without suspicion for overt neoplasia. The left adrenal gland measured 3.1 cm length x 0.76 cm at the caudal pole. The right adrenal gland measured 3.1 cm length x 0.78 cm at the caudal pole.

Spleen

The spleen exhibited primarily finely textured parenchyma which was hyperechoic to the liver and renal cortical parenchyma. Mild generalized parenchyma heterogeneity was present without evidence of nodular changes. Intermittent, subtly hypoechoic, non-expansive parenchymal nodules were present. Example of splenic nodule measured 0.5 cm 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. The parenchymal heterogeneity is likely consistent with benign changes such as extramedullary hematopoiesis or age related remodeling with minor potential for inflammatory or neoplastic disease.

Liver

The liver exhibited generalized enlargement with variable lobar swelling and mid to right mass effect measuring approximately 11 cm x 8 cm. Intermittent nodular parenchymal changes are noted both in the left liver and within the mid to right liver mass, exhibiting central echogenicity and mild peripheral hypoechogenicity, suggestive of target lesion type nodules. 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 upper duodenum exhibited subjective mild thickened walls with decreased mural echogenicity and indistinct wall layering. Upper duodenal wall measured 0.73 cm. The mid descending duodenum as well as the jejunum and ileum to the level of the colon were sonographically unremarkable. Jejunum wall measured 0.41 cm.

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.

Free Abdomen

Multiple enlarged, hypoechoic cranial abdominal (hepatic, gastric, pancreaticoduodenal) lymph nodes were present along with generalized cranial abdominal reactive mesentery and primarily perihepatic free fluid. The lymph nodes exhibited symmetrical to rounded margination with abnormal width: length ratio (>0.5).

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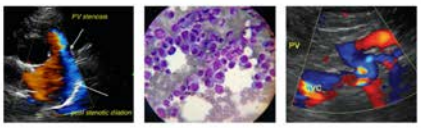

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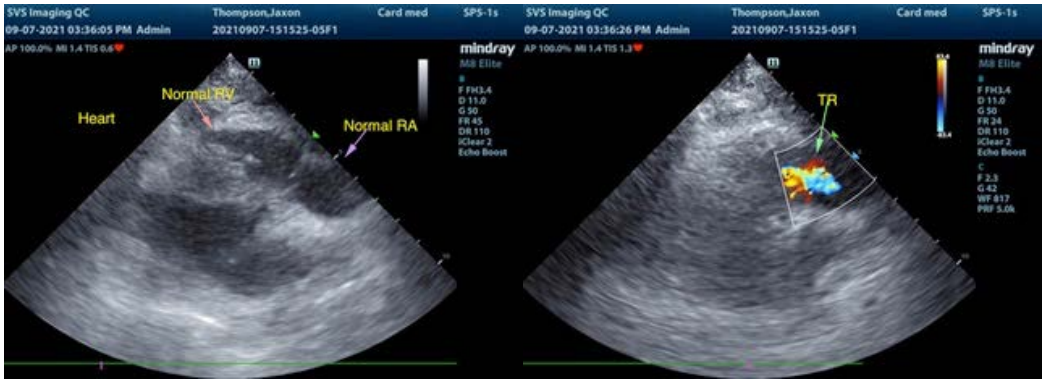
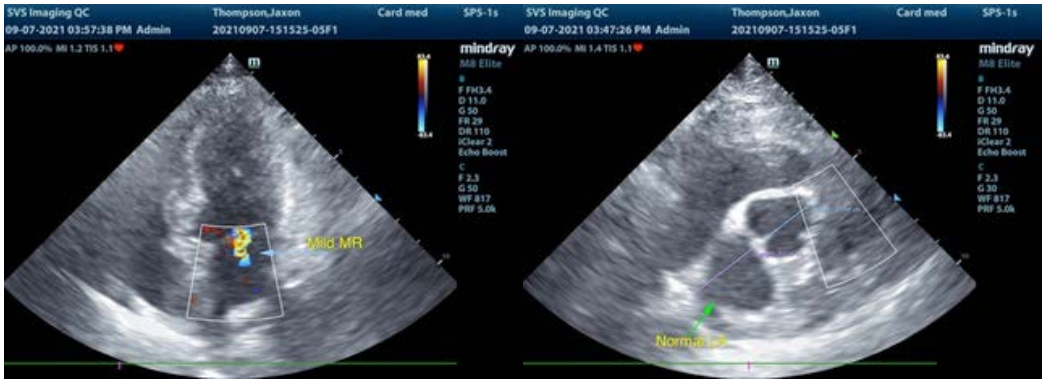
ULTRASONOGRAPHIC FINDINGS

- Overtly normal cardiac structure and function for breed
- Mild mitral valve and tricuspid valve insufficiency – estimated pulmonary pressure gradient based on tricuspid valve insufficiency velocity not consistent with clinical pulmonary hypertension.
- Infiltrative hepatomegaly with mid to right mass effect and intermittent target lesion/nodules.
- Subtle hypoechoic splenic nodules
- Multifocal cranial abdominal lymphadenopathy, reactive mesentery, and primarily perihepatic free fluid.
- Mildly thickened upper duodenum

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

Unfortunately, and although sampling is required for further clarification, the abdominal findings are consistent with multicentric hepatic and lymphatic neoplasia with primary concern for multicentric lymphoma and possible early upper intestinal and splenic involvement. Assuming normal clotting status, hepatic mass FNA recommended for screening cytology with potential for oncology consult and chemotherapeutic intervention. 3-view chest radiographs recommended given the patient's abnormal breathing. The overtly normal cardiac structure and function without evidence of clinical pulmonary hypertension suggests non-cardiogenic cause of the abnormal breathing.





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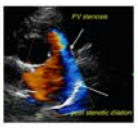
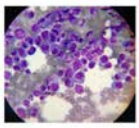
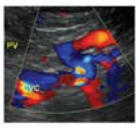

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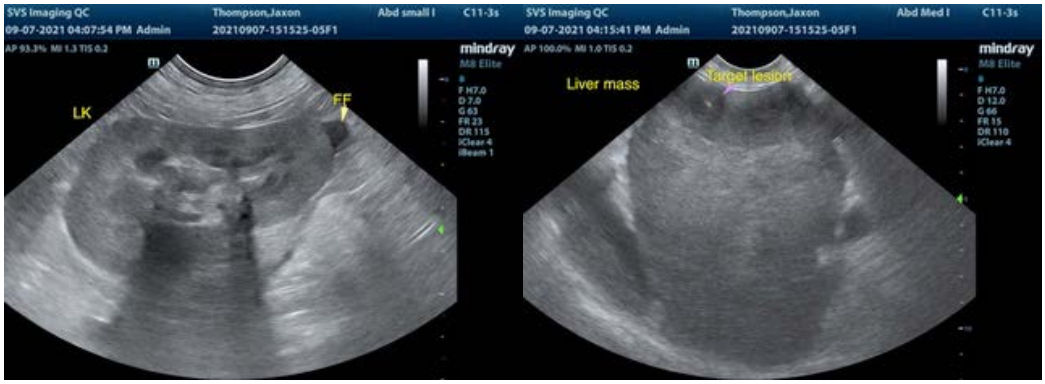

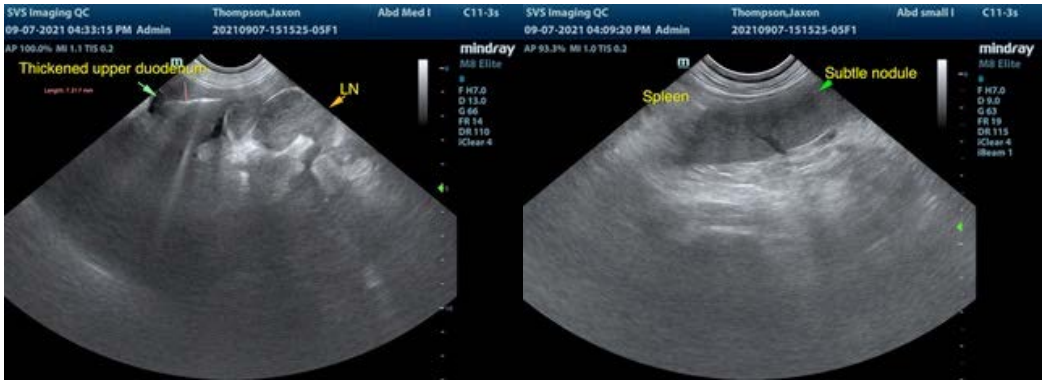

The information and recommendations provided are based on the images presented by the referring veterinarian. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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