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Clinical Sonography & Telecytology
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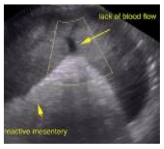
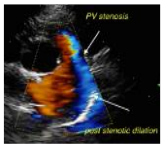
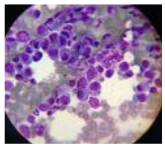
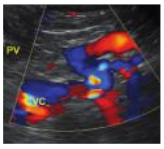




SonoPath.com
1-800-838-4268 info@sonopath.com

PATIENT

Amber Holstine

SPECIES

Canine

BREED

Labrador Retriever

SEX

SF

AGE

10 years

WEIGHT

67 lbs.

INTERPRETED BY

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

IMAGING PERFORMED BY

Jasmine Palacios SDEP Attendee/ Amanda Crook

HOSPITAL NAME

Rivers Edge Pet Medical Center

REFERRING VET

Dr. David Gray

INVOICE

14338

DATE

7/20/22

PRESENTING CLINICAL SIGNS

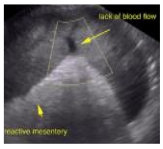
Puked one time 2 days ago and hasn't wanted to eat since. It was undigested kibble. Lethargic, decreased drinking. Decreased urination with 1 bm, normal. Hx of sensitive stomach with vomiting. P is not currenly on any medications
Abnormal PE/Chem/CBC/UA Results: See attached labs: Chem WNL; CBC: Low RBC (5.22), Low HCT (31%), Low HGB (11.g), Low MCV (59.4), Low RETIC (8.4) Low RETIC-HBG (19.1), Low PLT (138), High MONO (1.65) See attached rads: Cranial abdo mass

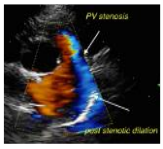
ULTRASONOGRAPHIC EXAMINATION OF THE HEART & ABDOMEN

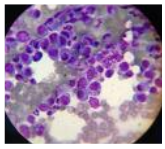
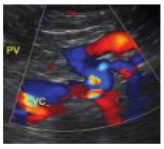
CANINE CARDIAC PARAMETERS	MR VMAX (m/s)	TR VMAX (m/s)	LA/AO (Boon method)	LA/AO (Heart Base; Swe)	FS (%)	EF (%)	EPSS (cm)
NORMAL PARAMETER	4.5-5.5	<2.7	1.3	<1.3	28-40	40-100	<0.6
PATIENT	5.0	2.2	1.2	1.4	24	52.1	0.52
CANINE CARDIAC PARAMETERS	**HR** (BPM)	**AV VMAX** (m/s)	**PV MAX** (m/s)	**BODY WEIGHT** (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	NM	1.1	0.7		3.8	4.6	

Cardiac Presentation

The echocardiogram in this patient demonstrated normal **left atrial** size based on 3 separate methods of LA evaluation. The cranial and caudal **mitral** valve leaflets presented normal linear structure, extension in systole, and union in diastole with normal kinesis. Mild MR was present on doppler. 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 mildly subnormal as 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. **Tricuspid** valvular assessment demonstrated adequate linear morphology and kinesis. Mild TR was present on doppler. The **right ventricle** was of normal size (1/3 diameter of LV), chordae structure, myocardial echogenicity and thickness. **Pulmonary outflow** tract assessment revealed normal valve structure, laminar flow, and diameter (approx.1:1 pa/ao ratio). Trace PI was present on doppler. No visible **pericardial** or free pleura fluid was noted. The cranial **mediastinum and pericardial and extra-cardiac 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 3.0 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 was noted.

The area of the aortic trifurcation was 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 6.4 cm in length. The right kidney measured 6.6 cm in length.

Adrenal Glands

The left adrenal gland was uniform in size and contour with a uniformly hypoechoic parenchyma. The left adrenal gland measured 0.48 m width at the caudal pole and 0.46 cm width at the cranial pole. No overt pathology was noted in the area of the right adrenal gland.

Spleen

A large to expansive, mixed echogenic mass appearing to involve the cranial spleen is present measuring at least 10.0 cm in diameter, but potentially larger as the entire mass would not fit into a single viewing window. The parenchyma of the mass was heterogeneous to mixed echogenic without areas of cavitation. The non-affected spleen exhibited primarily finely textured and homogenous parenchyma which was hyperechoic to the liver and renal cortical parenchyma. The splenic vasculature at the hilus was normal in volume with no evidence of congestion or thrombosis.

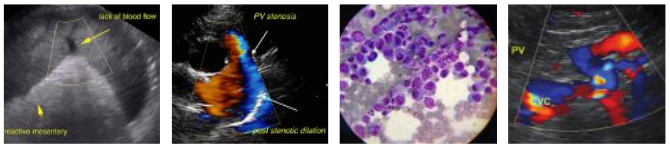
Liver/ Gallbladder

The liver was subjectively normal 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 containing anechoic content with mild Inspissated, mildly hyperechoic gallbladder debris. No evidence of gallbladder or peripheral gallbladder inflammatory criteria was noted. 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. Potential gastric displacement or impingement by the splenic mass is suspected.

The intestinal walls demonstrated intact wall layering and maintained 1:3 muscularis / mucosa ratio. The mucosa exhibited decreased echogenicity with occasional mucosal speckling. Segmental mild areas of nonobstructive intestinal ileus pattern consisting of mild fluid accumulation in the intestinal lumen was present without obstruction or foreign material.



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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 were evident.

Free Abdomen

Regional perisplenic mildly nonuniform hyperechoic mesentery with mild volume perisplenic to generalized peritoneal free fluid exhibiting mild echogenic changes suggestive of fluid cellularity was present. No overt lymphadenopathy was noted.

ULTRASONOGRAPHIC FINDINGS

- Overtly normal cardiac structure with LV hypocontractility - age-related variant, athletic state, systemic disease, hypothyroidism may present in this manner, DCM criteria were not met
- Mild MR / TR - estimated pulmonary pressure gradient (approximately 20 mmHg) not consistent with clinical pulmonary hypertension
- Trace pulmonic Insufficiency - not clinically significant
- Large, mixed echogenic splenic mass
- Minor hepatic parenchymal remodeling - subjectively benign
- Mild inspissated gallbladder debris (non-mucocele)
- Gastroenteritis pattern - suspect mild gastric displacement or impingement secondary to the splenic mass

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

Although histopathology is required for a definitive diagnosis, the splenic mass is likely suggestive of neoplastic criteria such as sarcoma or other. Benign pathologies i.e., hyperplasia, hematopoiesis, granuloma, splenitis, etc., are possible yet considered less likely. No overt evidence of intraabdominal or cardiac / pericardial metastasis was noted. However, the possibility of sonographically undetectable metastasis or micrometastasis, in these cases, cannot be definitively excluded. Potential for omental adhesions to the splenic mass is possible.

No indication of cardiac medications, given the normal overall cardiac structure and likely low hemodynamic effects of the noted valvular insufficiencies. No overt anesthetic contraindications.

Assuming no evidence of thoracic pathology on three view chest radiographs, laparotomy with splenectomy, gross Inspection of the perisplenic omentum, and liver could be considered. A very guarded long-term prognosis, given the potential for malignant splenic neoplasia, Is warranted.

As-needed gastrointestinal support would be reasonable.

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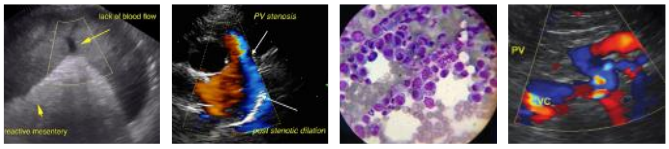

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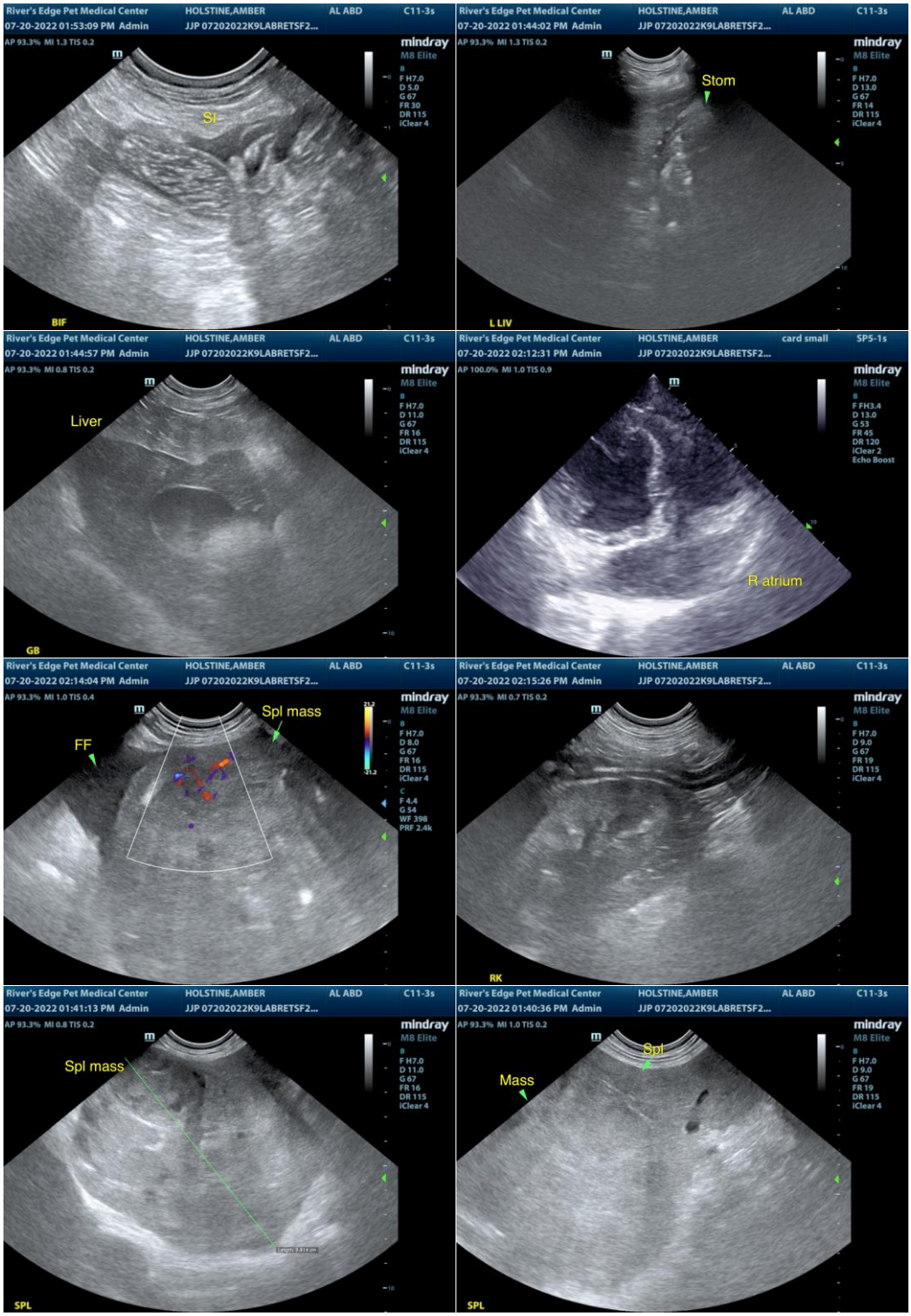

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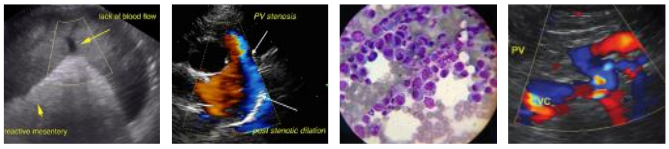

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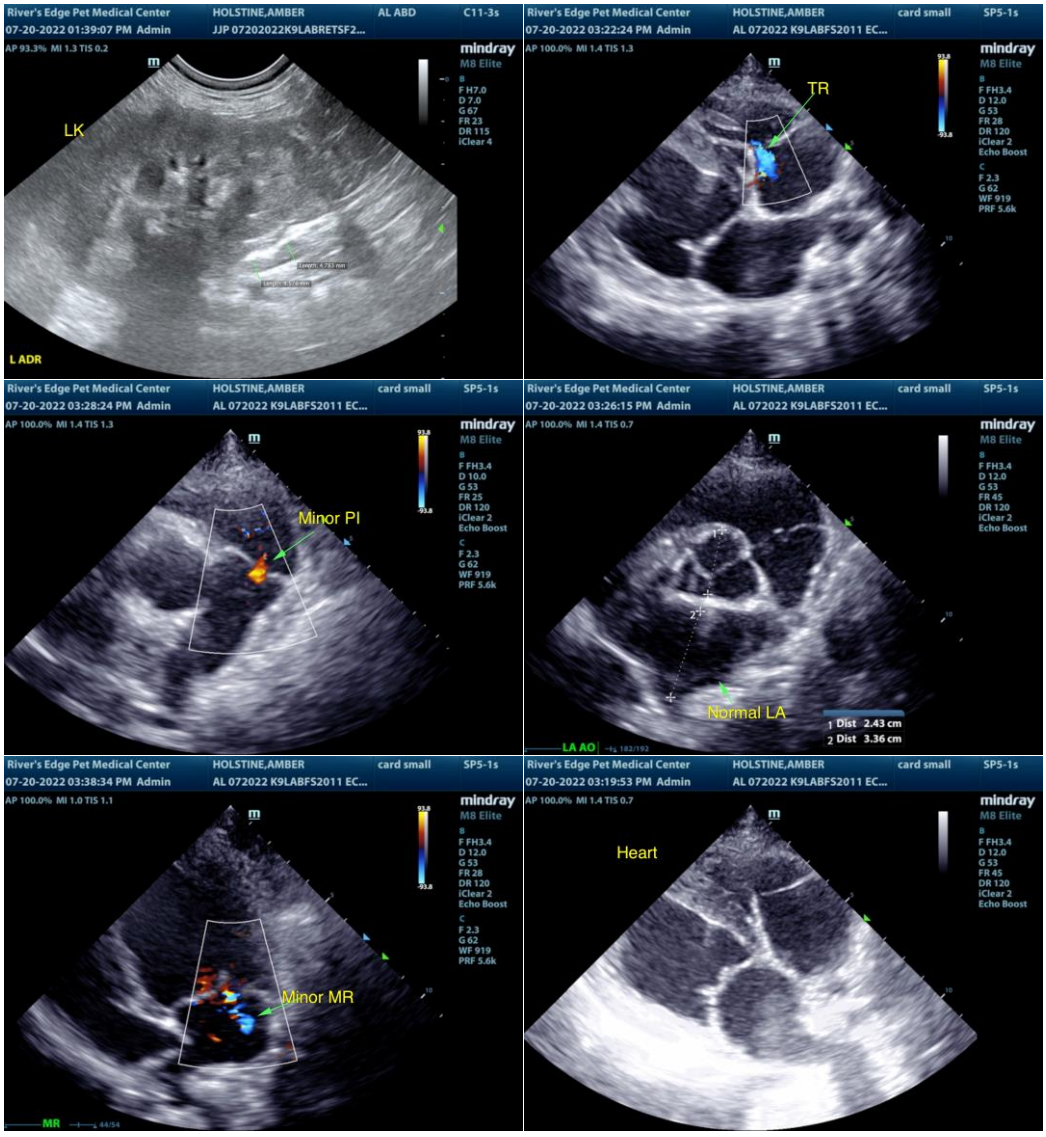

The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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