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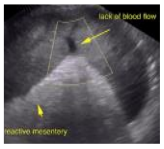
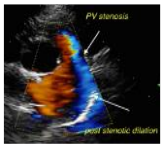
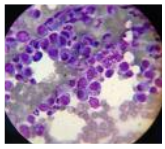
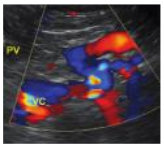

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1-800-838-4268 info@sonopath.com

PATIENT

Miles New

SPECIES

Canine

BREED

Labrador Retriever Mix

SEX

MN

AGE

12 years

WEIGHT

60 lbs.

INTERPRETED BY

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

IMAGING PERFORMED BY

Kelly Vazquez

HOSPITAL NAME

The Gentle Vet

REFERRING VET

Dr. Linda Dulude

INVOICE

16307

DATE

2/24/23

PRESENTING CLINICAL SIGNS

Patient presents for coughing, heart murmur grade 3/6 since Feb. 2022.

Current meds: Levothyroxine, Apoquel, Gabapentin, and Rimadyl.

Abnormal PE/Chem/CBC/UA Results: ALT 161, ALP 473, chol, 475, CK 275, PLTs 578, K+ 5.7, NaCl 25, Cl. 107, T.P. 7.6. U/A: pending.

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	5.5	<2.0	1.5	1.45	44	79	0.4
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	122	1.3	0.93		4.9	4.3	

Cardiac Presentation

The echocardiogram in this patient demonstrated minor increased **left atrial** size based on 3 different LA measurement methods. The cranial and caudal **mitral** valve leaflets presented mild thickening suggestive of endocardiosis. Doppler indicated measurable moderate 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 TR on 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. The cranial **mediastinum and pericardial regions** were free of masses in the visible window. No evidence of arrhythmia was noted.

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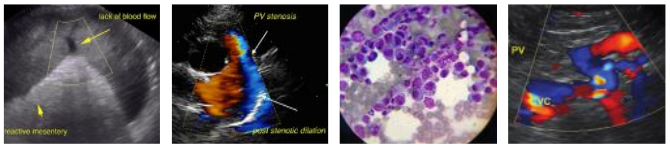

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Urinary System

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 minor dependent urinary bladder sand / mineral. The ureteral papillae were normal. The ureters were not visible which is normal. No evidence of inflammatory or neoplastic changes was noted.

The residual prostate was free of pathology.

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 minor loss of corticomedullary symmetry and definition expected for the age of the patient. No evidence of pelvic dilation or pyelectasia was present. The left kidney measured 6.2 cm in length. The right kidney measured 6.0 cm in length.

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 exhibited an indistinct, nondisruptive, cranial nodule measuring 1.6 cm x 1.2 cm. The left adrenal gland measured 3.1 cm length x 1.0 cm width at the caudal pole. The right adrenal gland measured 2.3 cm length x 0.77 cm width at the caudal pole.

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.

Liver/ Gallbladder

The liver exhibited mild to possible moderate enlargement yet maintained a symmetrical capsule contour with generalized mild nonhomogeneous parenchyma exhibiting evidence of parenchymal remodeling and moderate coarse echotexture. A nondisruptive, nonhomogeneous nodular lesion was present in the left liver parenchyma measuring 4.0 cm in diameter. The lesion did not distort the hepatic capsule. The gallbladder was non-distended in size containing anechoic content with moderate, nonorganized, nondependent gallbladder debris. The gallbladder was otherwise normal. 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 contained mild, echogenic, nonshadowing ingesta without signs of 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.

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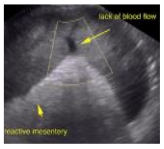
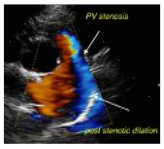
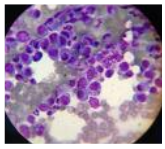
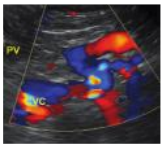

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Pancreas

The pancreas was normal in size and contour with isoechoic to heterogeneous parenchyma compared to adjacent omentum. No signs of active inflammation or neoplasia.

Free Abdomen

No overt lymphadenopathy or peritoneal effusion was present.

ULTRASONOGRAPHIC FINDINGS

- Compensated MR, minor LA enlargement
- Mild TR - no overt pulmonary hypertension
- Minor urinary bladder sediment / mineral
- Minor age-related kidneys
- Left adrenal nodule - suspect adenoma
- Chronic hepatopathy with nonspecific left intraparenchymal nodular lesion
- Gallbladder debris (non-mucocele)
- Pancreatic remodeling

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

The lack of significant left atrial or generalized cardiac chamber enlargement and without evidence of clinical pulmonary hypertension, the risk of complications secondary to MR at this stage is considered low, while the coughing in this patient appears to be noncardiogenic in origin. Consideration for primary lower airway disease, or a contributing factor, is indicated. The prognosis is variable considering the MR, and serial sonographic monitoring is recommended for further assessment. No overt indication for cardiac medications, given this presentation, with primary respiratory therapy indicated. Recheck echocardiogram is recommended in 6 months, sooner if clinical signs consistent with heart disease arise.

Assuming normal clotting status, hepatic parenchyma, and if accessible nodular lesion FNA cytology Is recommended for further clarification. Screening BP is advised to assess for evidence of hypertension which may allude to a more aggressive emerging left adrenal nodular pathology i.e., pheochromocytoma. Sonographic monitoring of the liver and left adrenal nodule for evidence of progression is advised. Hepatosupportive medications including Denamarin and Ursodiol may prove beneficial. Correlation of the minor urinary bladder mineral / sand with pending urinalysis is recommended.

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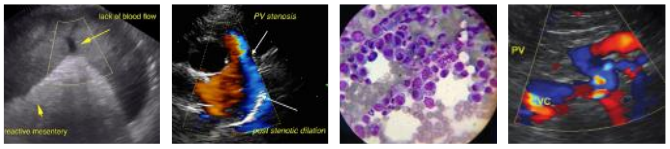

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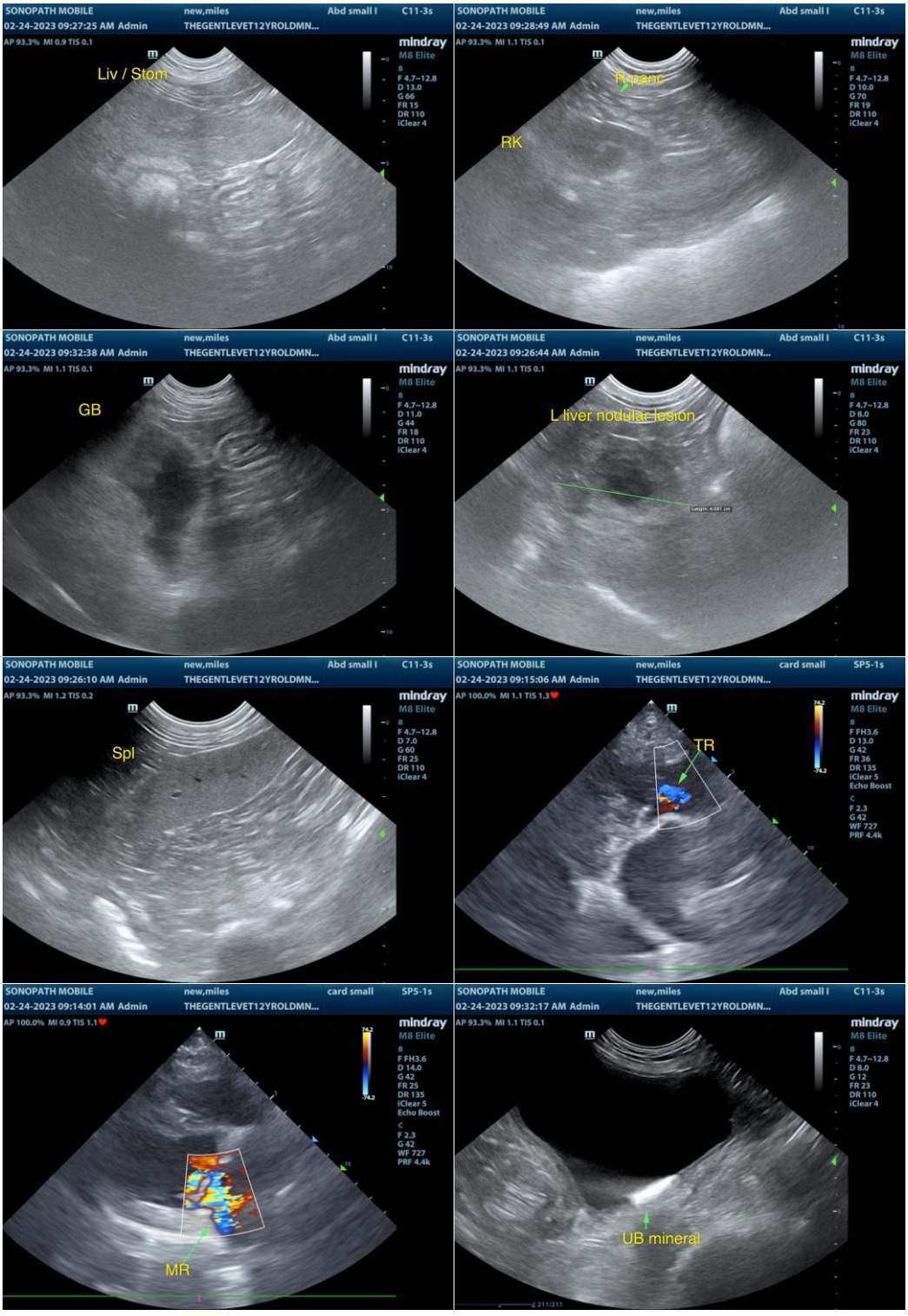

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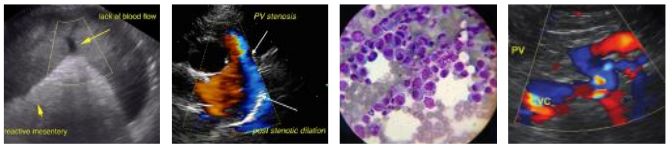

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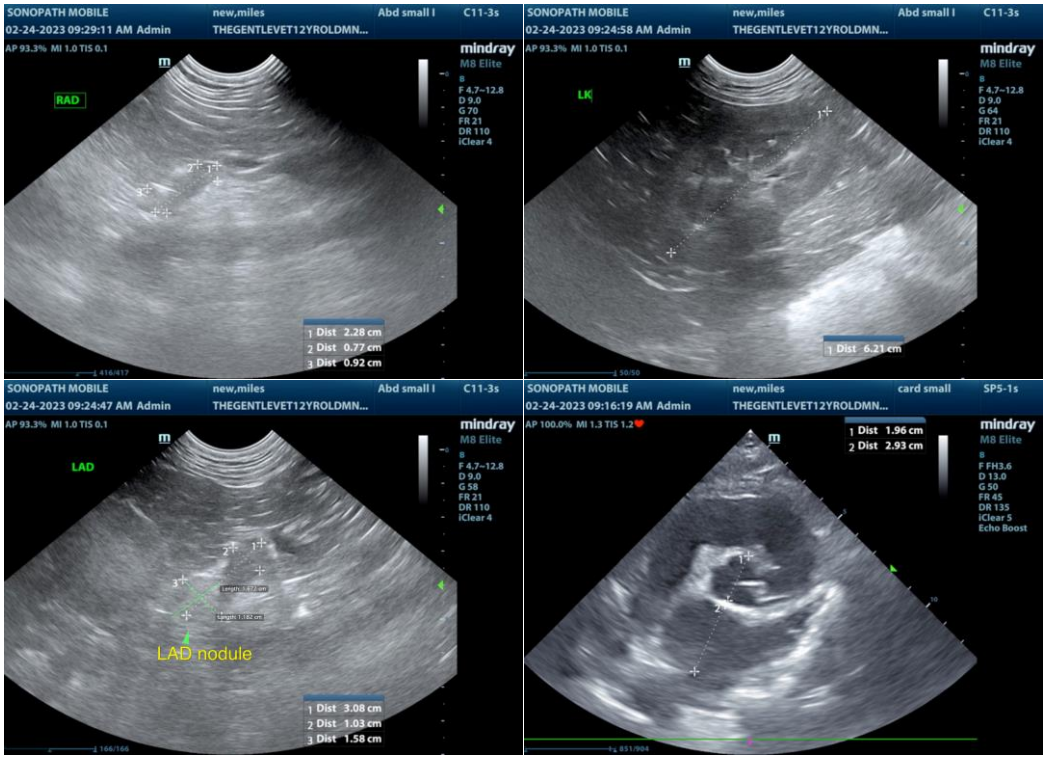

The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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