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Clinical Sonography & Telecytology
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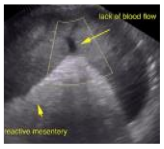
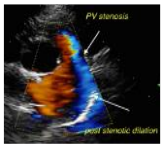
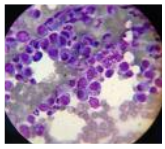
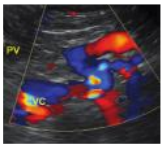

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1-800-838-4268 info@sonopath.com

PATIENT
Remi Gray

SPECIES
Canine

BREED
Pembroke Welsh Corgi

SEX
FS

AGE
2011

WEIGHT
26 lbs.

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

IMAGING PERFORMED BY
Amanda Crook - SDEP Certified Clinical Sonographer

HOSPITAL NAME
Rivers Edge PMC

REFERRING VET
Dr. David Gray

INVOICE
15170

DATE
10/11/22

PRESENTING CLINICAL SIGNS

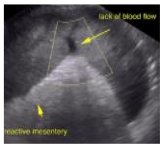
Acute onset of respiratory distress, weight loss of 4 pounds since 3/2022.
Abnormal PE/Chem/CBC/UA Results: Labwork - CHEM & CBC completely normal Cardiopet today - ECG normal Radiographs - Chest abnormal bronchial patterns with poss med stinum opacity, ABD WNL

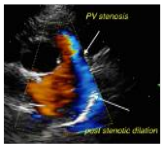
ULTRASONOGRAPHIC EXAMINATION OF THE HEART & ABDOMEN

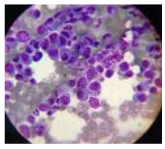
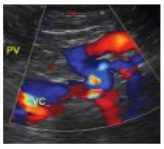
CANINE CARDIAC PARAMETERS	MR VMAX (m/s)	TR VMAX (m/s)	LA/AO (Boon method)	LA/AO (Heart Base; Swe)	FS (%)	EF (%)	EPSS (cm)
NORMAL PARAMETER	4.5-5.5	<2.7	1.3	<1.3	28-40	40-100	<0.6
PATIENT				1.24	50	85	0.2
CANINE CARDIAC PARAMETERS	**HR** (BPM)	**AV VMAX** (m/s)	**PV MAX** (m/s)	**BODY WEIGHT** (kg)	**LA** 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	NM				2.3	2.1	

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. 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. **Tricuspid** valvular assessment demonstrated adequate linear morphology and kinesis. 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). No visible **pericardial** or free pleura fluid was noted. The area of the cranial **mediastinum** was indistinctly visualized owing to regional pulmonary artifact. Generalized peripheral pulmonary comet tail artifact along with focal to intermittent mild irregular to indistinct peripheral pulmonary nodules were present. An example of a peripheral pulmonary nodule measured approximately 2.0 cm in diameter.





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Urinary System

The urinary bladder, trigone, cystourethral junction, and visible pelvic urethra to a depth of 2.0 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 including no evidence of medial Iliac or sublumbar lymphadenopathy/masses.

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 4.8 cm in length. The right kidney measured 5.4 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. No evidence of adrenal tumors. The left adrenal gland measured 1.8 cm length x 0.59 cm width at the caudal pole. The right adrenal gland measured 2.3 cm length x 0.65 cm width at the caudal pole.

Spleen

The spleen was overall normal in size and contour with subtle generalized splenic parenchyma heterogeneity. A solitary, subtly expansive, isoechoic to mildly nonhomogeneous nodule was present in the medial spleen measuring 1.9 cm in diameter.

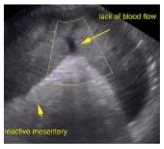
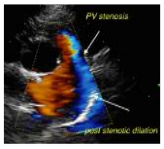
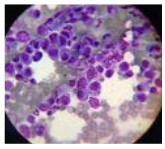
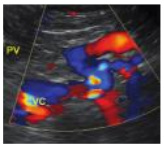
Liver/ Gallbladder

The liver was subjectively normal in size, structure, and contour. The liver parenchyma was uniform and hypoechoic to the spleen with a mild coarse echotexture. The hepatic and portal vasculature were normal in appearance without signs of congestion. The gallbladder was non-distended in size containing primarily anechoic content with mild, congealed yet nonorganized sludge present in the caudal lumen exhibiting subjective minor distal acoustic shadowing. No evidence of obstruction to bile outflow was noted. The cystic and common bile ducts were normal.

Transdiaphragmatic view revealed a moderate to marked comet tail lung pattern, which is an echogenic sound wave interface with microconsolidations within the caudal lung field. The lung field should not be visualized by sonogram unless pathology is present. Chest radiographs are recommended to rule out alveolar/lung disease such as neoplasia, thromboembolic disease, chronic inflammatory disease with microconsolidation.

Gastrointestinal

Sonographic assessment of the gastroesophageal junction revealed subjective intact yet potentially regionally thickened gastroesophageal junction wall layering with subjective mild irregular to nonhomogeneous mural parenchyma. The area of subjective gastroesophageal junction thickening measured potentially 1.8 cm in diameter. The rest of the stomach exhibited intact, sonographically

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unremarkable wall layering including the adjacent fundus, gastric body, and pylorus without evidence of mechanical pyloric outflow obstruction. Minor retained nonshadowing gastric chyme was present.

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 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

No overt lymphadenopathy, omental masses, or evidence of peritoneal effusion was present.

ULTRASONOGRAPHIC FINDINGS

Primary Findings

- Normal echocardiogram
- Generalized peripheral pulmonary comet tail artifact with focal to intermittent indistinct peripheral pulmonary nodules, concurrent moderate to marked transdiaphragmatic comet tail artifact - infection / inflammation, fungal disease, neoplasia, or other primary pulmonary disease possible
- Subjective asymmetrically thickened gastroesophageal junction, otherwise sonographically unremarkable stomach with minor retained nonshadowing chyme
- Sonographically unremarkable small bowel
- Nonspecific splenic nodule - Hyperplasia, hematopoiesis, infection / splenitis, hematoma, granuloma, or neoplasia are all potentials for the splenic nodule.

Secondary Findings

- Mild age-related renal changes
- Focal congealed gallbladder sludge exhibiting potential emerging mineralization

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

Lower airway sampling either via BAL / TTW or potentially ultrasound-guided FNA of the lung for screening cytology is required for further assessment. No indication for cardiac component to the acute onset of respiratory distress i.e., no evidence of pulmonary hypertension or left heart volume overload.

The clinical significance of the subjective asymmetrically thickened gastroesophageal junction is unclear, given the lack of reported vomiting, inappetence, or similar clinical signs. Potential for regional gastro-esophagitis could be possible, although the potential for emerging neoplastic criteria cannot be definitively excluded. Gastroprotectant protocol, if clinically indicated, along with a sonographic reassessment of the area of the gastroesophageal junction in 10-14 days may be considered.

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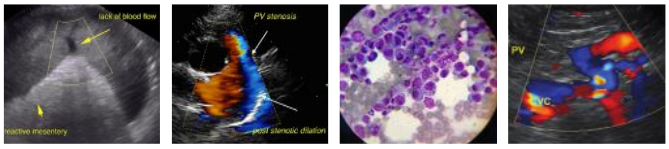

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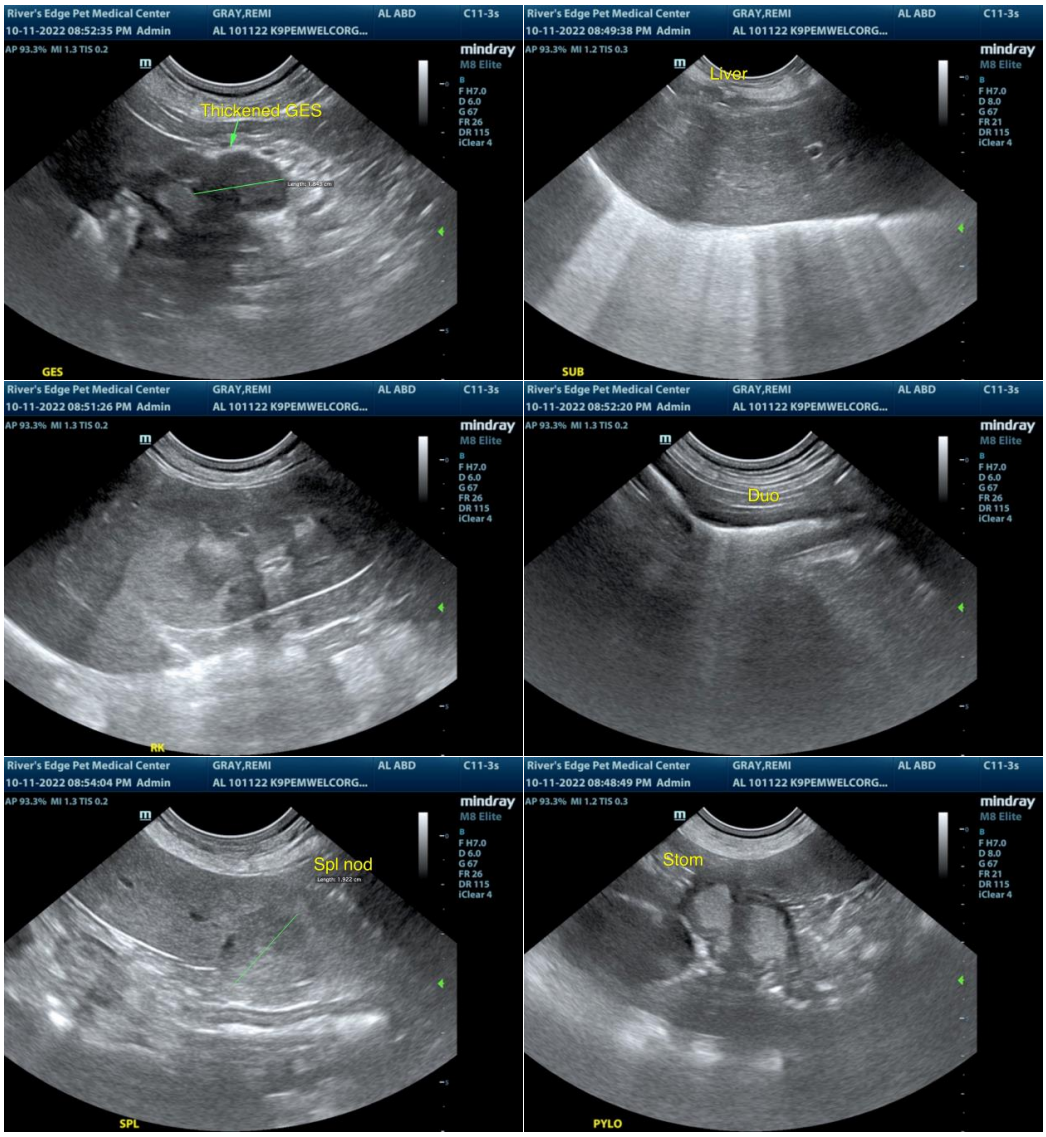
Screening splenic nodule FNA, assuming normal clotting status and using a 25-gauge needle, could be considered.

A GI panel to include PLI/TLI/Cobalamin/Folate may be considered to rule out occult disease as a contributing factor to the weight loss,



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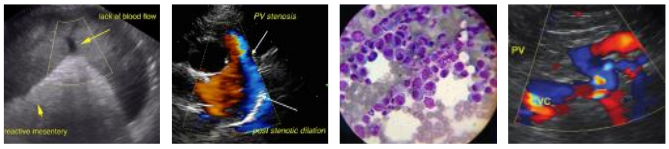

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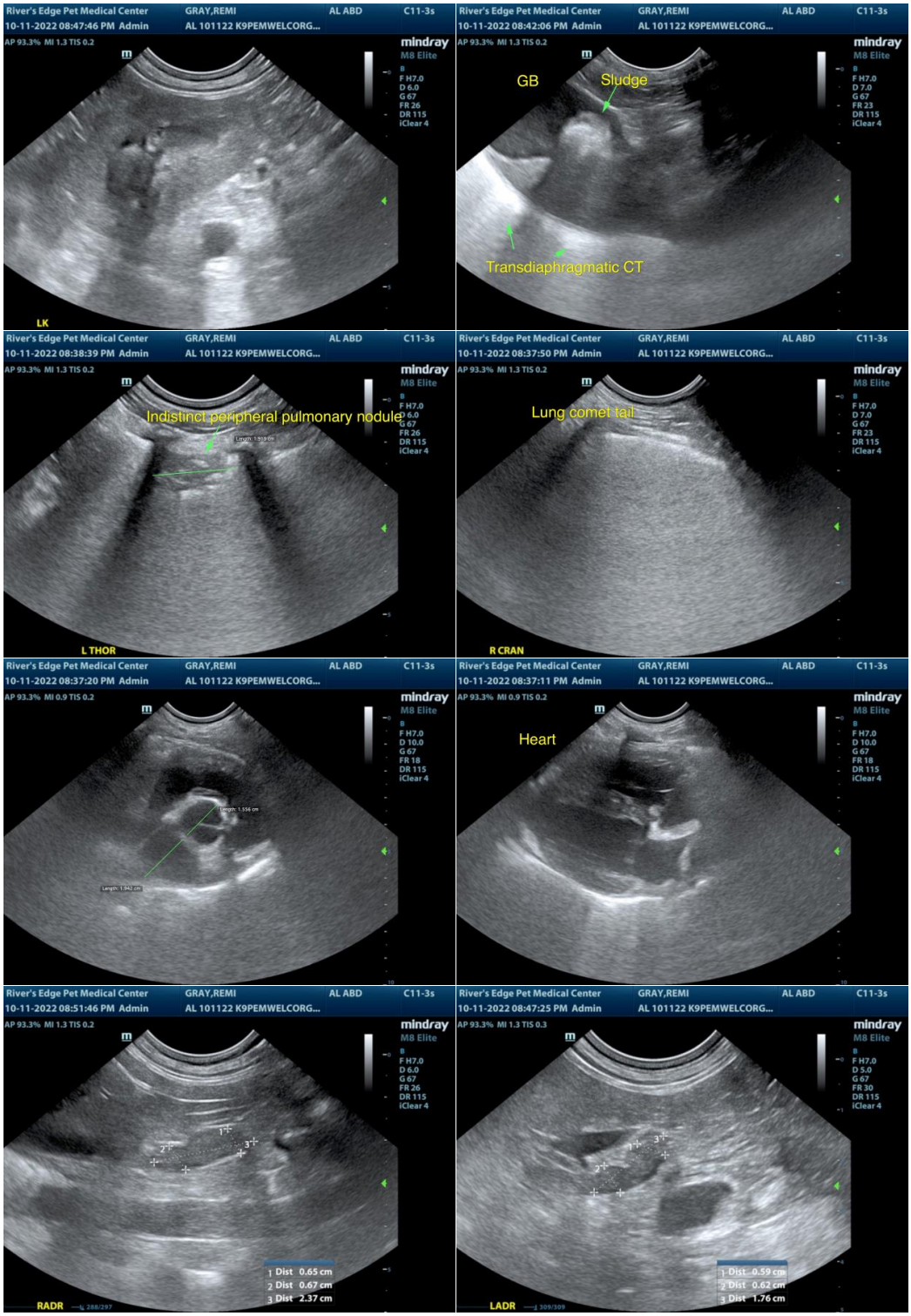

The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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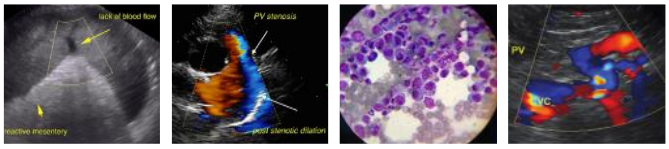

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Thank you for this referral. If the clinical or image interpretation does not parallel your findings or if I can be of any further assistance please contact me.

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