Pennsylvania Mobile
VETERINARY ULTRASOUND SERVICES

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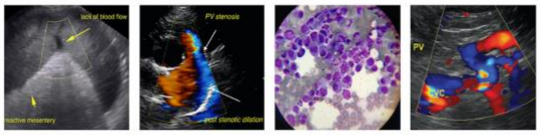


SonoPath
Clinical Sonography & Telecytology
EDUCATIONAL TELECONSULTATION SERVICES™
1-800-838-4268 info@sonopath.com SonoPath.com

PATIENT
Libby Pereine

SPECIES
Canine

BREED
Golden Retriever Mix

SEX
FS

AGE
2015

WEIGHT
69.2

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

IMAGING PERFORMED BY
Rebekah Jakum, CVT ARDMS/RVT

HOSPITAL NAME
Community VP

REFERRING VET
Dr. Hulshizer

INVOICE
14922

DATE
4/28/22

PRESENTING CLINICAL SIGNS

History: ADR, FUO, shallow breathing, lethargy, concern for neoplasia Cerenia, Orbax, Pepcid

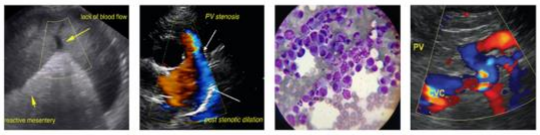
ULTRASONOGRAPHIC EXAMINATION OF THE HEART & ABDOMEN

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	--	--	NM	1.4	34.3	66.8	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	NM	1.6	0.76	--	3.5	3.5	--

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 evidence of **pericardial** or free pleura fluid with potential for very scant pleural free fluid. Intermittent to potential multifocal non-homogeneous to nodular peripheral pulmonary lesions were present, an example measured approximately 3.0 cm- 3.5 cm in diameter. A focal area of curvilinear hard distal acoustic shadowing, subjectively within the pulmonary parenchyma was also noted, measuring approximately 2.0 cm in diameter.

Urinary System



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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 and normal corticomedullary definition were maintained. The echogenicity of the cortex was similar to or slightly less than normal liver parenchyma while the medulla echogenicity was hypoechoic to the cortex with no evidence of pelvic dilation. The left kidney measured 6.1 cm in length. The right kidney measured 7.0 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 3.4 cm x 0.50 cm width at the caudal pole.

The right adrenal gland was uniform in size and contour with a uniformly hypoechoic parenchyma. The right adrenal gland measured 3.4 cm in length x 0.43 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 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 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.

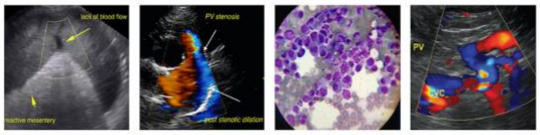
The small intestine presented intact wall layering with 1:3 muscularis/mucosa ratio. The lumen of the small intestine was empty with no signs of ileus, obstruction, or foreign material.

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



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No omental masses, lymphadenopathy or peritoneal effusion was present.

ULTRASONOGRAPHIC FINDINGS

- Sonographically unremarkable abdomen
- Normal echocardiogram
- Intermittent to multifocal nonspecific nonhomogeneous to nodular peripheral pulmonary lesions, possible focal intrapulmonary area of mineralization.

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

The primary finding of intermittent to multiple nonhomogeneous to nodular peripheral pulmonary lesions and possible focal intrapulmonary mineral, although not definitive, may indicate intermittent to multifocal granulomas/pyogranulomas, neoplasia, fungal disease, area of chronic consolidation, possible intrapulmonary mineralization among may potential etiologies.

Assuming normal clotting status, ultrasound guided FNA of a nonhomogeneous to nodule peripheral pulmonary lesion for screening cytology +/- culture and sensitivity is recommended. No overt evidence of primary intraabdominal pathology or neoplastic criteria as an obvious cause of pulmonary metastasis. Likewise, no evidence of primary cardiac pathology or masses. Thoracic CT may be indicated in this patient pending additional diagnostics for further clarification.

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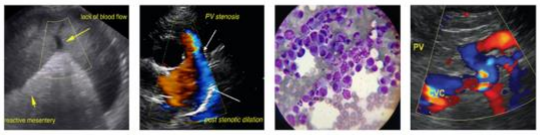

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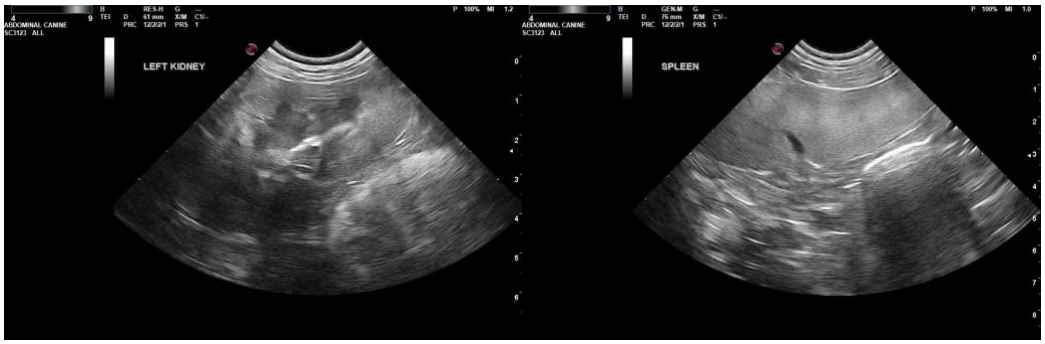

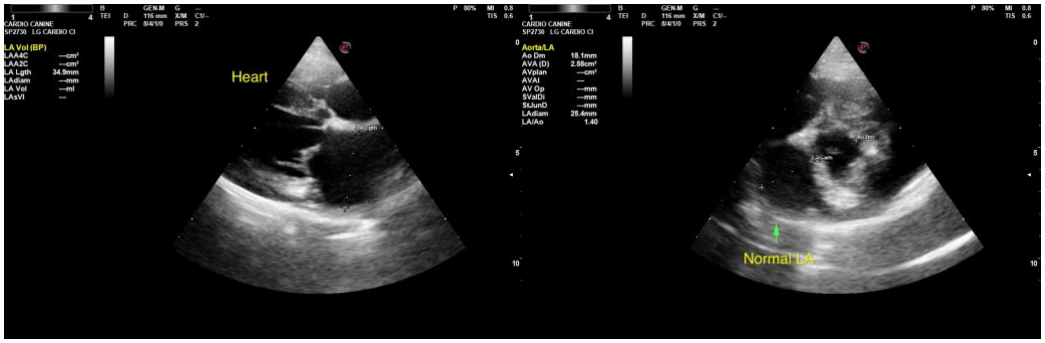

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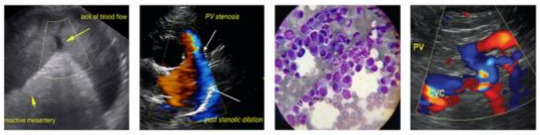

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The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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)
mac.daniel@sonopath.com