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Clinical Sonography & Telecytology
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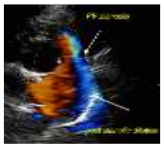
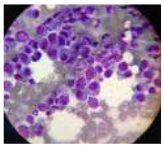
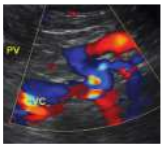

SonoPath.com
1-800-838-4268 info@sonopath.com

PATIENT
Bailey Jung

SPECIES
Canine

BREED
Labradoodle

SEX
FS

AGE
13 years

WEIGHT
48 lbs.

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

IMAGING PERFORMED BY
Jessica Miller

HOSPITAL NAME
Marsh AH

REFERRING VET
Dr. Milwicki

INVOICE
12894

DATE
12/28/21

PRESENTING CLINICAL SIGNS

Hx of Cardiac murmur, recent ECG VPCs Current meds: Pimobendan, Benazepril, Gabapentin
Abnormal PE/Chem/CBC/UA Results: Alk Phos 658, Triglyc 549, PrecisionPSL 159

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	5.9	2.4	1.3	1.48	44.1	75.3	0.27
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	BELOW	BELOW	BELOW	BELOW
PATIENT	196	1.8	1.4		5.9	4.6	

Cardiac Presentation

The echocardiogram in this patient demonstrated mildly enlarged **left atrial** size based on 2 different LA measurement methods with minor deviation of the interatrial septum towards the right atrium, suggestive of mildly increased left atrial pressure. The cranial and caudal **mitral** valve leaflets presented minor vegetative thickening suggestive of endocardiosis without evidence of valvular prolapse. Doppler indicated measurable 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. Mild aortic valve insufficiency was noted on color doppler assessment. 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 was noted on color doppler assessment. 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. Intermittent to potential consistent tachycardia and tachyarrhythmia were noted.

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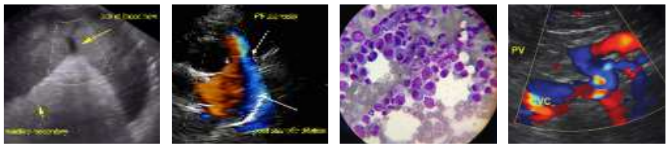

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Urinary System

The urinary bladder, trigone, cystourethral junction, and visible pelvic urethra to a depth of 2.0 cm exhibited normal thickness and tone. Primarily anechoic urine was present in the lumen. Mild, particulate, nondependent, sediment was present without evidence of calculus formation. The sediment is likely indicative of mild cellular or crystalline debris. The ureteral papillae were normal. The ureters were not visible which is normal. No evidence of inflammatory or neoplastic mural changes were 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 7.5 cm in length. The right kidney measured 6.6 cm in length.

Adrenal Glands

Unilateral enlargement of the left adrenal gland was present. The left adrenal mass was nonhomogeneous to subtly nodular exhibiting asymmetrical capsule contour yet without overt evidence of parenchymal escape or obvious vascular invasion. No evidence of parenchymal mineralization was noted. The left adrenal mass measured 3.8 cm length x 2.2 cm width at the caudal pole.

The right adrenal gland was normal in size. Mild parenchyma heterogeneity and mild capsule asymmetry was present without suspicion for overt neoplasia. The right adrenal gland measured 2.4 cm length x 0.73 cm width 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. 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. Multiple, non-expansive, well-demarcated, hyperechoic nodules were noted in primarily medial parenchyma adjacent to the hilus. No overt evidence of splenic masses or overt neoplastic criteria was noted.

Liver/ Gallbladder

The liver exhibited subjective mild generalized enlargement with normal 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 with thin walls and primarily anechoic luminal content. The cystic and common bile ducts were normal.

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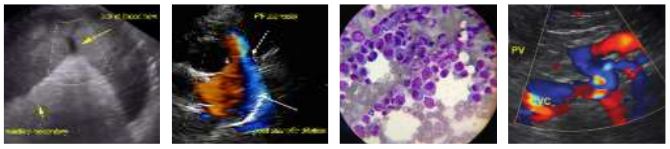

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Gastrointestinal

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

Free Abdomen

No omental masses, lymphadenopathy or peritoneal effusion were present.

ULTRASONOGRAPHIC FINDINGS

Primary Findings

- Eccentric MR
- Mild LA enlargement
- Minor TV / AV insufficiency - estimated pulmonary pressure gradient based on TV insufficiency velocity not consistent with clinical pulmonary hypertension
- Tachycardia / tachyarrhythmia
- Left adrenal mass - hyperplasia, adenomatous change with primary concern for neoplasia such as carcinoma or pheochromocytoma
- Bilateral chronic renal changes
- Subjective benign splenic changes - likely benign myelolipomas with age-related parenchyma changes
- Hepatopathy - subjectively benign
- Heterogeneous to hypoechoic pancreas - age-related pancreatic changes with potential for low-grade to chronic pancreatitis possible

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

Assessment and monitoring of systemic blood pressure for evidence of hypertension tension are recommended.

Urine catecholamine levels could be considered in this patient, given concern for potential pheochromocytoma.

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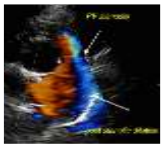
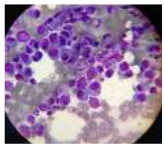
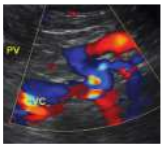

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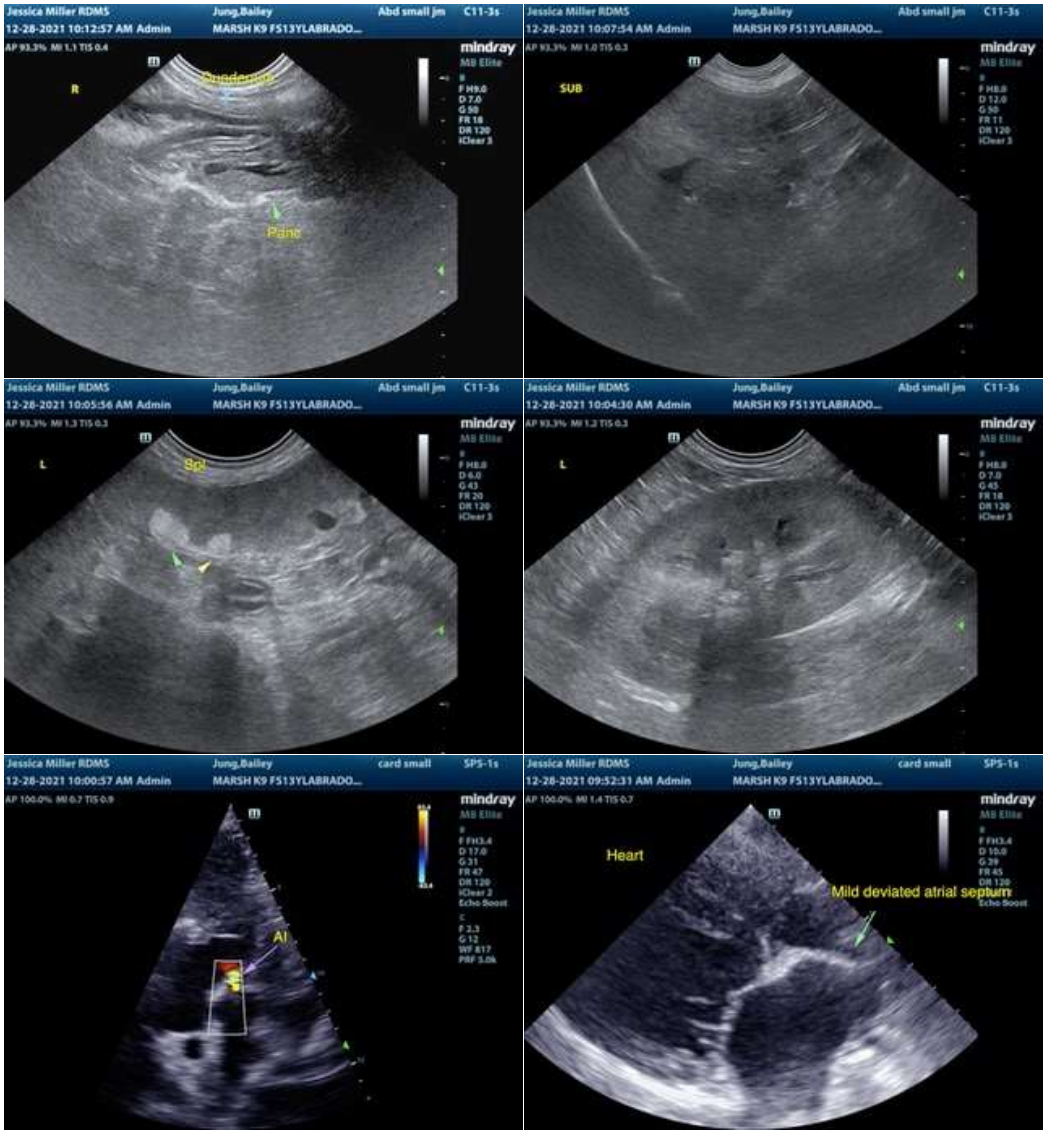
Overall, the heart appears to be compensated at this time, yet the mild left atrium enlargement indicates that the potential risk for complication associated with mitral valve insufficiency is mildly elevated. Recheck echocardiogram is suggested in 6 months to assess for evidence of progression.

Assuming normal clotting status, screening splenic FNA using a 25-gauge needle could be considered primarily to ensure only benign changes are present, although overt suspicion of neoplastic criteria is considered low.



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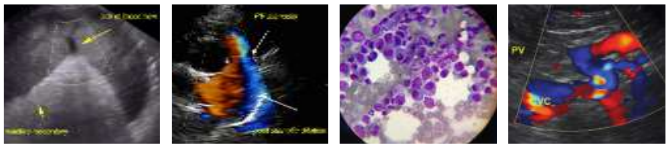

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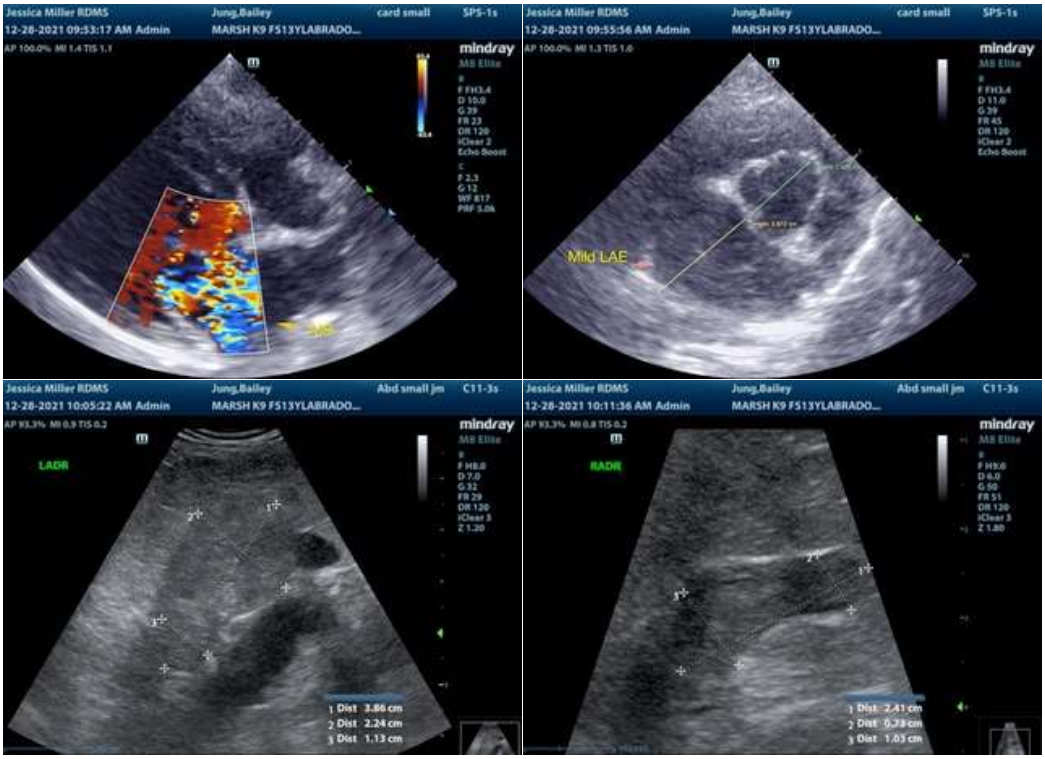

The information and recommendations provided are based on the images presented by the referring veterinarian. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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