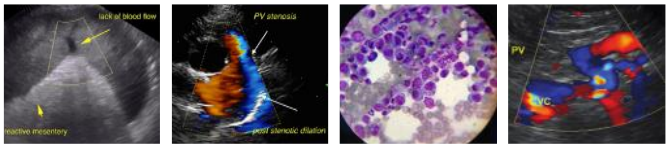
SonoPath
Clinical Sonography & Telecytology
EDUCATIONAL TELECONSULTATION SERVICES™



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

PATIENT

Zoe Buchner

SPECIES

Canine

BREED

Labrador Mix

SEX

FS

AGE

12

WEIGHT

60.8 lbs.

INTERPRETED BY

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

IMAGING PERFORMED BY

Chrissy Krell, DVM

HOSPITAL NAME

Town & Country AC

REFERRING VET

Amanda Bergin, DVM

INVOICE

16323

DATE

3/9/23

PRESENTING CLINICAL SIGNS

Noted increased ALT and ALKP last summer (8/2022) after vomiting episodes, dx with Anaplasmosis and a grade III/VI murmur heart holosystolic. REchecked BW in late February - found enzymes elevated yet. US completed. Patient is overall stable. Patient is on Vetmedin 5mg - 1 tab po bid and enalapril 10 mg 1 tab PO bid.

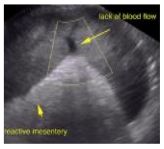
Abnormal PE/Chem/CBC/UA Results: Mass on the right caudal lateral thorax, multiple soft mass on the body wall (seem consistent with lipomas). Heart murmur ausculted, 2/21/23 Chem: ALT 223, ALKP 1436, Cardiopet: 250 4Dx: still ap + 8/2022 - ALT >1000, ALKP 1149. BUN 6 4 Dx: ap + CBC: NSF Chest x-rays - VHS 13, cardiomegaly, hepatomegaly,

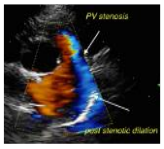
ULTRASONOGRAPHIC EXAMINATION OF THE HEART & ABDOMEN

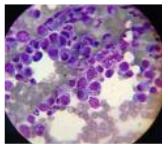
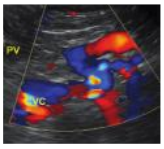
CANINE CARDIAC PARAMETERS	**MR VMAX** (m/s)	**TR VMAX** (m/s)	**LA/AO** (Boon method)	**LA/AO** (Heart Base; Swe)	**FS** (%)	**EF** (%)	**EPSS** (cm)
NORMAL PARAMETER	4.5-5.5	<2.7	1.3	<1.3	28-40	40-100	<0.6
PATIENT				1.4	37	75	0.35
CANINE CARDIAC PARAMETERS	**HR** (BPM)	**AV VMAX** (m/s)	**PV MAX** (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	0.7		5.3	4.6	

Cardiac Presentation

The echocardiogram in this patient demonstrated minor increased **left atrial** size based on LAMAX measurement. The cranial and caudal **mitral** valve leaflets presented mild thickening consistent with mild chronic degenerative valvular changes. Doppler indicated eccentric insufficiency. The **left ventricle** presented thicknesses with linear contour with possible borderline increased LV volume. 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. Normal measured LVOT velocity was noted. 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. No overt TR was noted 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,





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laminar flow, and diameter (approx.1:1 pa/ao ratio). Normal measured RVOT velocity was noted. Trace pulmonic insufficiency was noted on Doppler. 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.

Urinary System

The urinary bladder, trigone, cystourethral junction, and visible pelvic urethra to a depth of 4.0 cm exhibited normal thickness and tone. Anechoic urine was present in the lumen with no uroliths or sediment. No evidence of mineral or calculi. 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 6.5 cm in length. The right kidney measured 7.0 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 measured 3.4 cm length x 0.81 cm width at the caudal pole. The right adrenal gland measured 3.1 cm length x 0.96 cm width at the caudal pole. No adrenal tumors were noted.

Spleen

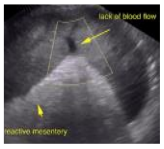
The spleen exhibited primarily finely textured and homogenous parenchyma which was hyperechoic to the liver and renal cortical parenchyma. Intermittent, non-disruptive hyperechoic nodules were present throughout the medial parenchyma, primarily perihilar. The capsule was smooth and regular without apparent expansion. The splenic vasculature at the hilus was normal in volume with no evidence of congestion or thrombosis. Acute to chronic inflammatory or neoplastic changes were not noted. The echogenic nodules tend to trend benign and are most consistent with benign hyperplasia or myelolipomas.

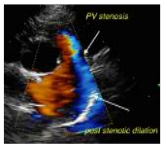
Liver/ Gallbladder

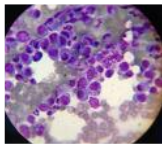
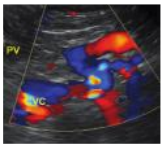
The liver exhibited mild to possible moderate generalized enlargement with normal structure and contour. The liver parenchyma was mildly nonuniform and hypoechoic to the spleen with a moderate coarse echotexture and subjective mild to benign parenchymal remodeling. Normal vascular volume was noted. The 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.





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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 or peritoneal effusion was present.

ULTRASONOGRAPHIC FINDINGS

- Hepatopathy exhibiting mild parenchymal remodeling - vacuolar hepatopathy, primary or concurrent inflammatory disease, hyperplasia, hematopoiesis, mild fibrosis, infiltrative neoplasia (less likely), all potentials
- Sonographically normal gallbladder
- Mild age-related kidneys
- Age-related adrenals - no evidence of overt adrenomegaly given patient size / body weight, no adrenal tumors
- Compensated MR
- Minor LA enlargement, subjective borderline LV enlargement with normal LV function
- Trace pulmonic insufficiency

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

Assuming normal clotting status, screening hepatic FNA cytology could be considered for further clarification, primarily to assess for evidence of inflammatory criteria and rule out less likely potential for neoplastic criteria. Hepatosupportive medications including Denamarin +/- Ursodiol may prove beneficial.

No overt indication of adrenal disease, given the lack of reported clinical signs i.e., PU/PD, polyphagia, etc., and overall normal adrenal presentation.

The lack of significant chamber enlargement indicates that the current risk of complications secondary to MR is relatively low. However, prognosis may be considered highly variable in a large breed dog with MR. Continued Pimobendan is warranted. ACE inhibitor medication is suggested if evidence of hypertension (systemic BP >130, not overtly indicated if systemic BP <130). No overt DCM criteria noted. Serial sonographic monitoring is recommended for further prognosis. Recheck echocardiogram is recommended in 6 months, sooner if clinical signs arise.

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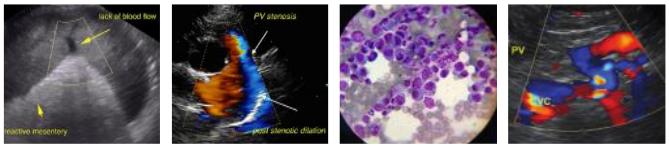

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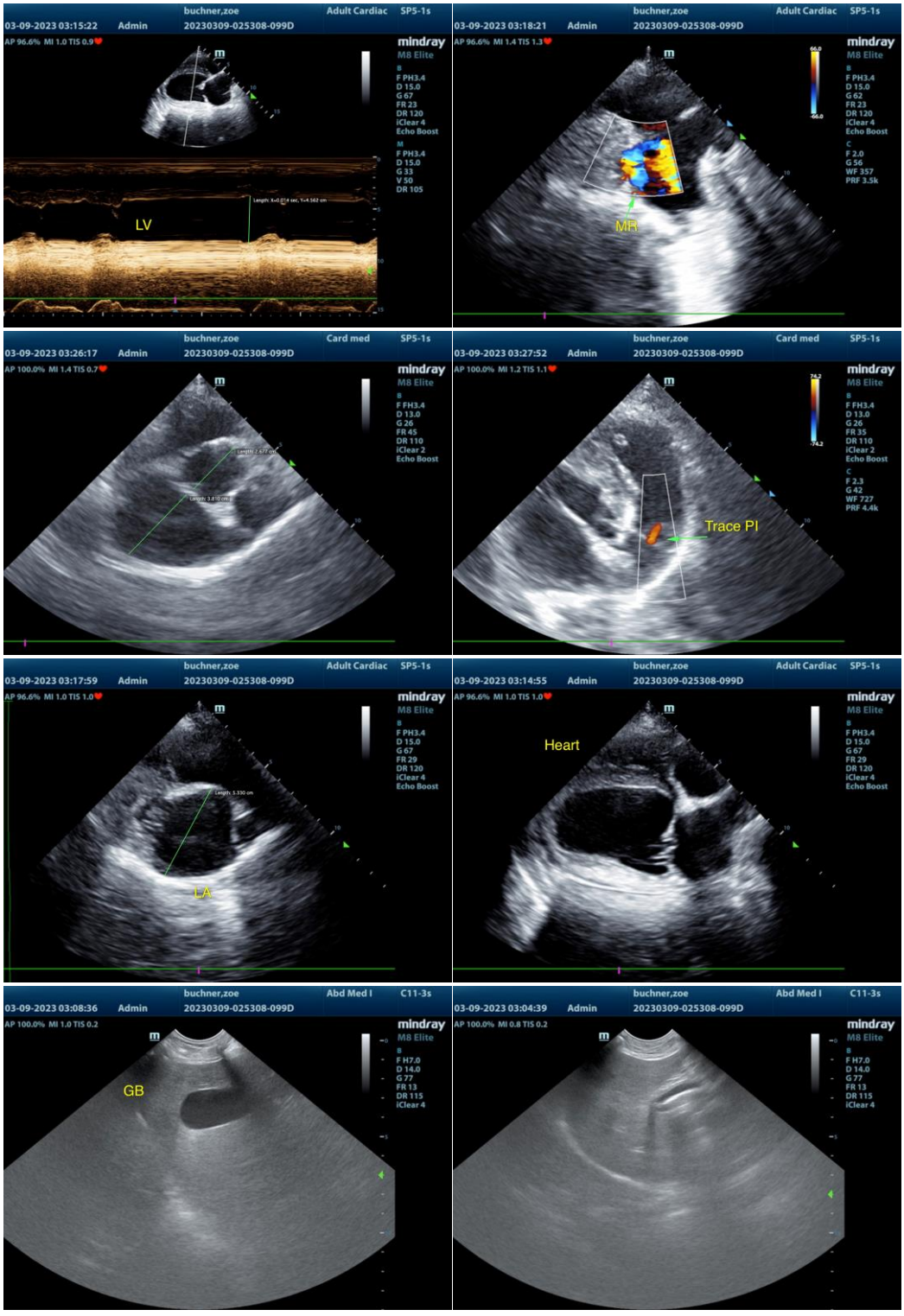

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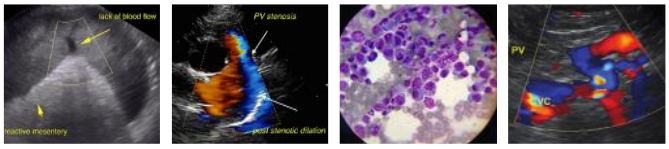

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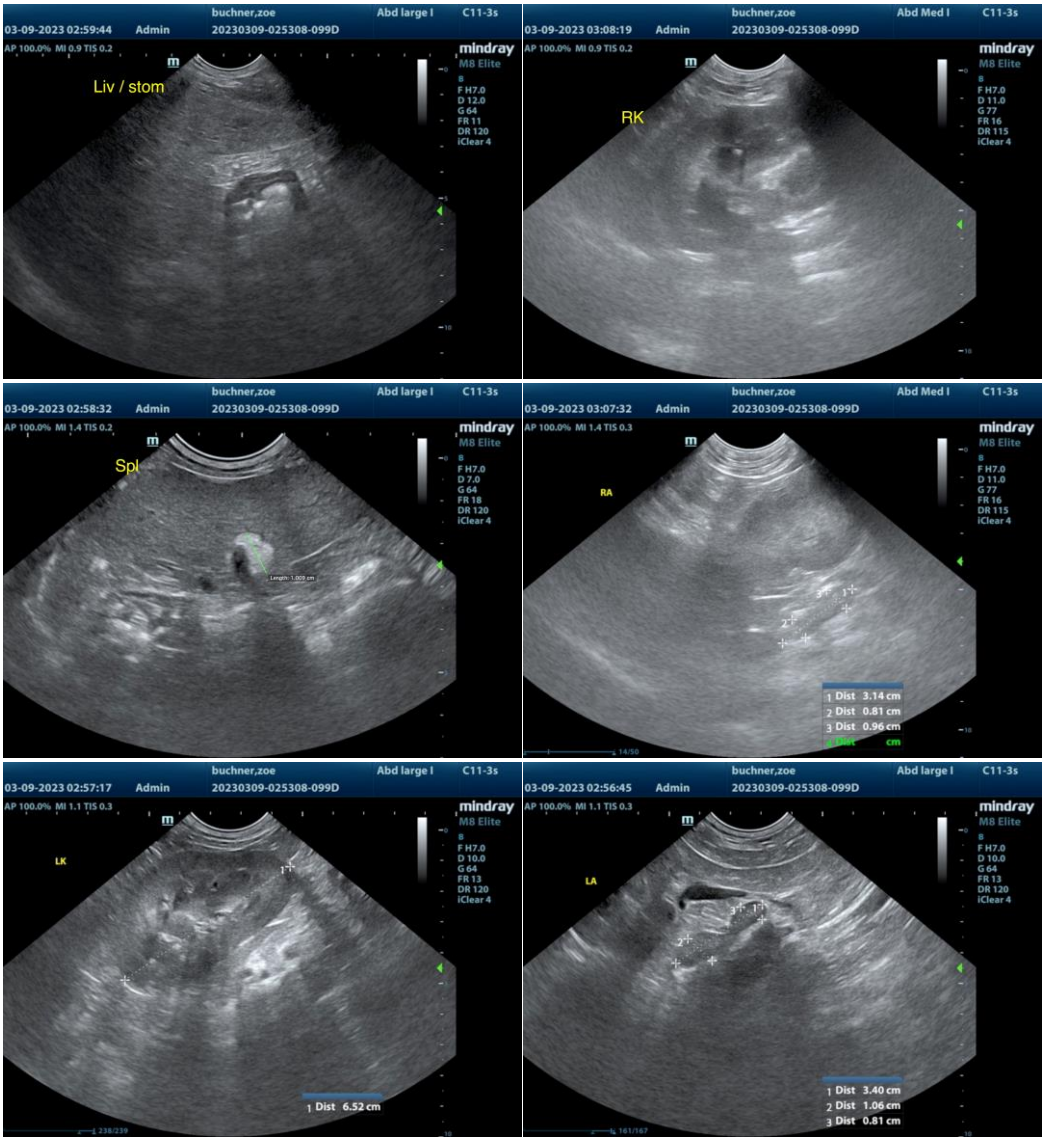

The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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