



PATIENT

Coco Villareal

PRESENTING CLINICAL SIGNS

Presented as referral to ER Clinic for ascites. Concerned with cardiac contractility, echo being submitted as well

SPECIES

Canine

Abnormal PE/Chem/CBC/UA Results: Modified transudate pulled from abdomen Specific gravity 1.030 Total Protein 4

ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN AND HEART

BREED

Labrador Retriever

SEX

MN

AGE

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WEIGHT

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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				2.4	30	58	1.4
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	1.1			6.5	6.0	

INTERPRETED BY

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

Cardiac Presentation

Moderate to severe left ventricular dilation with decreased systolic function was present. Increased EPSS with subjective mild increased LV sphericity. Significant LA enlargement was present. The mitral valve appeared mildly thickened with no obvious prolapse. Moderate subjective primarily eccentric MR was present on Doppler. Mild RA and potential RV dilation was present. The aortic valve was overtly normal with normal measured LVOT velocity. No obvious aortic insufficiency was present. Overtly normal pulmonic valve in appearance with no obvious pulmonic insufficiency. No overt pericardial or free pleural fluid. No obvious cardiac tumors. Potential tachycardia or tachyarrhythmia was present.

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A Waffle

Urinary System

The urinary bladder, trigone, cystourethral junction, and visible pelvic urethra to a depth of 3 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 were noted.

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Torch Lake Veterinary Clinic

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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 7.9 cm in length. The right kidney measured 7.5 cm in length.

INVOICE

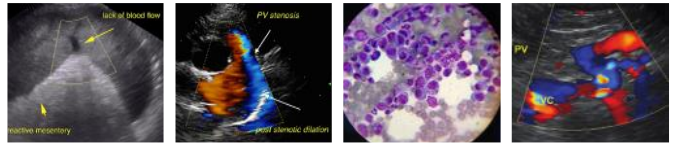
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The area of the iliac trifurcation was free of pathology including no evidence of medial, iliac or sublumbar lymphadenopathy or masses.

DATE

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The area of the residual prostate appeared normal and free of pathology.



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Adrenal Glands

Coco Villareal

The left and right adrenal glands were not definitively visualized owing to increased peri adrenal artifact and ascites. No obvious pathology was present in the area of the bilateral adrenal glands.

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Spleen

Canine

The spleen exhibited subjective mild decreased size suggestive of volume contraction with a 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.

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Liver/Gallbladder

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The liver presented enlarged in size with symmetrical yet swollen contour. The parenchyma exhibited conserved uniform parenchyma with normal echogenicity isoechoic to the spleen and falciform fat.

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The hepatic vasculature was dilated in appearance, most notable at the level of the hepatic vein / caudal vena cava junction, without evidence of thrombosis. 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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Gastrointestinal

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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.

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(Canine and Feline)

Normal visible colon wall layers were present with apparent formed feces in lumen.

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Pancreas

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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 was evident.

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Free Abdomen

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No omental masses or overt lymphadenopathy was present.

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Moderate volume ascites was present.

Generalized mild uniform hyperechoic omentum was present.

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ULTRASONOGRAPHIC FINDINGS

- LA/LV volume overload decreased LV contractility.
- Mild RA/RV enlargement.
- MR.
- Possible tachycardia or tachyarrhythmia.
- Hepatomegaly-suggestive of congestive criteria.
- Moderate volume ascites.

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Secondary findings

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- Mild chronic renal changes.
- Volume contracted spleen.

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

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Canine

The thickened mitral valves are suggestive of chronic degenerative valvular changes with suspected secondary MR. Chronic valvular disease may have progressed to significant left heart dilation. Primary to secondary DCM owing to taurine deficiency, hypothyroidism, myocarditis, tachycardia induced cardiomyopathy or infiltrative disease such as lymphoma cannot be definitively excluded. While left sided structural disease predisposes to left sided congestion, possible tachycardia or tachyarrhythmia may predispose to right sided congestion. Give the cardiac presentation congestive heart failure and arrhythmia are likely primary contributors to the hepatic presentation and secondary ascites.

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Potential for multifactorial causes of ascites could also be possible given lack of evidence of significant right heart enlargement. Considered hospitalization with IV diuretic/rate control therapy pending ECG analysis.

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Pimobendan 0.3 mg/kg PO BID, combination Lasix/spironolactone both 1-2 mg/kg PO BID with as needed rate control therapy is recommended. Correlation with effusion analysis cytology +/- C/S if evidence of inflammatory component could be considered if clinically indicated. Monitoring of HR, systemic BP and renal parameters while on diuretic therapy is recommended.

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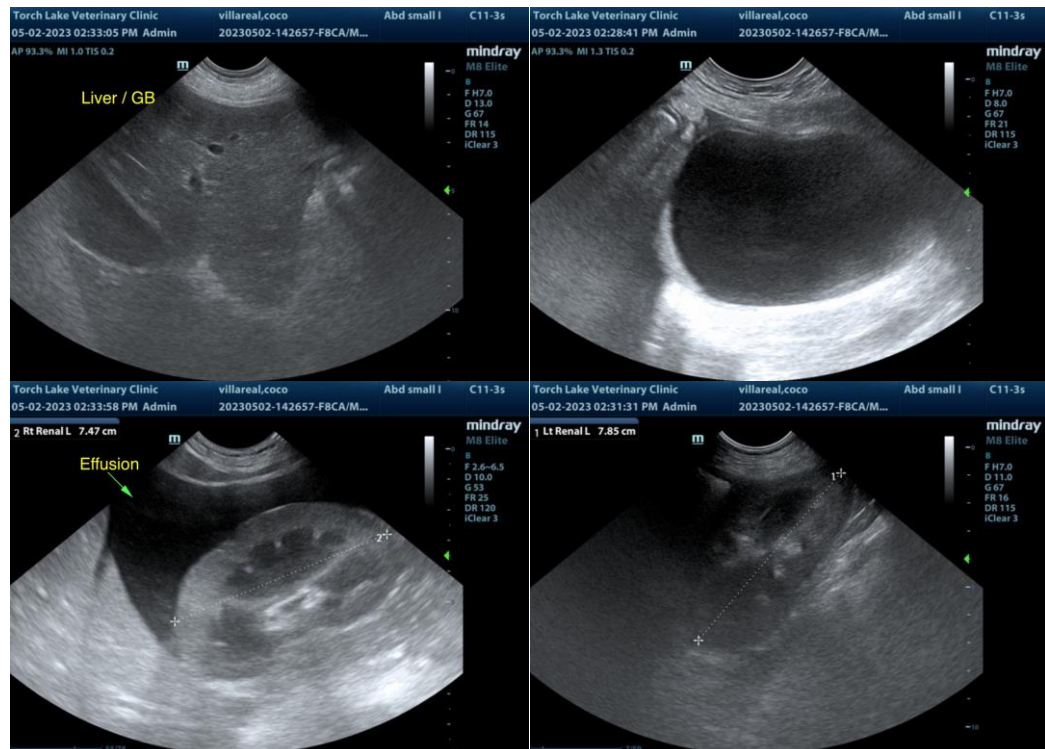
An extremely guarded prognosis is indicated. Close clinical and sonographic monitoring is advised.

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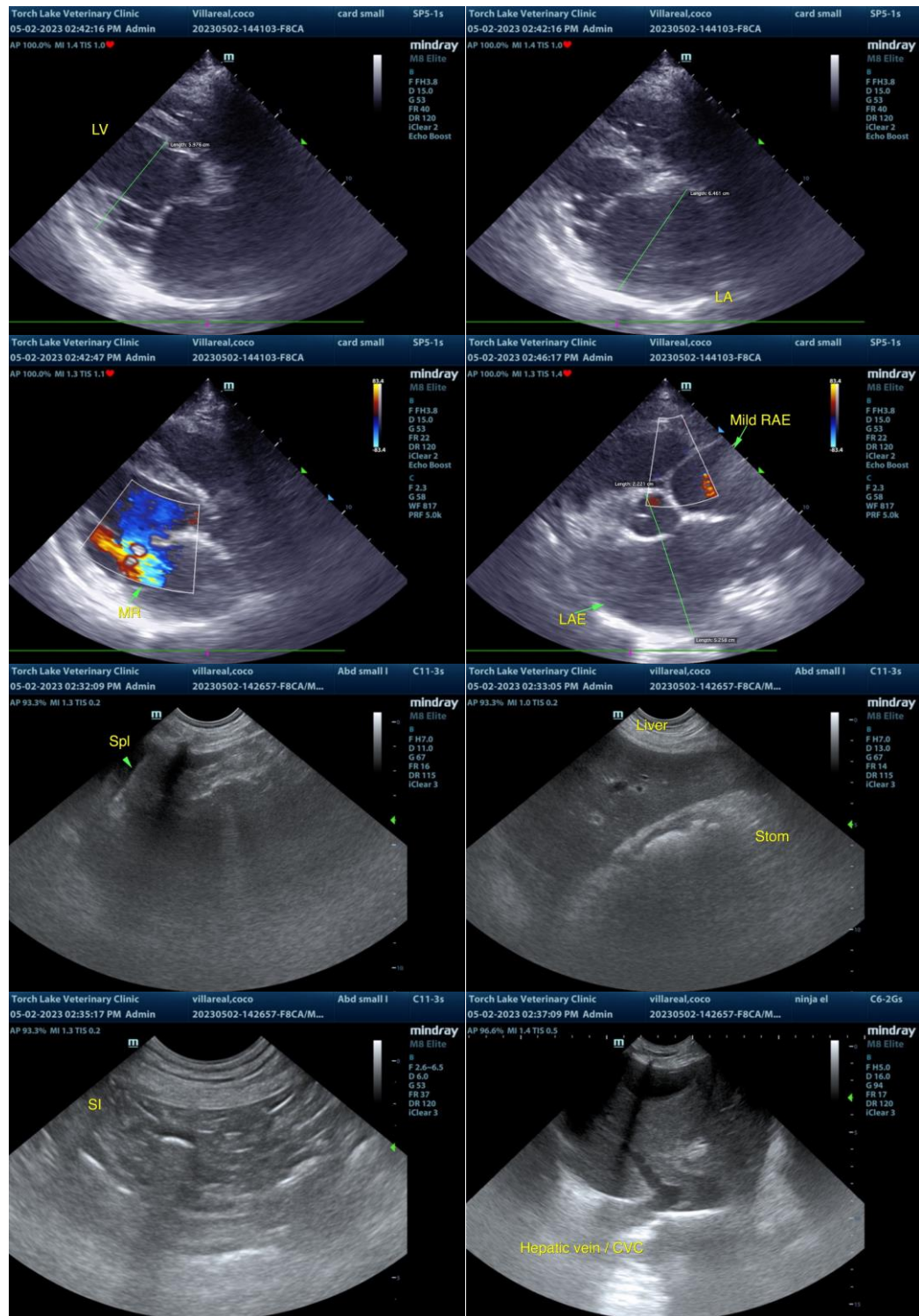
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The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

Thank you for this referral. If the clinical or image interpretation does not parallel your findings or if I



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can be of any further assistance, please contact me.

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