



PATIENT PRESENTING CLINICAL SIGNS

PATIENT
Louie Martin

SPECIES
Canine

BREED
Chihuahua

SEX
Neutered Male

AGE
12 Years

WEIGHT
3.1 kg

INTERPRETED BY
Eric Lindquist, DMV DABVP, Cert. IVUSS

IMAGING PERFORMED BY
Dr. Callihan

HOSPITAL NAME
Animal Emergency Care

REFERRING VET
Dr. Bailey

INVOICE
25813

DATE
9/27/21

Vomiting, diarrhea, weakness, anorexia Last night came back from trip -- son was watching. Change of surroundings stressed Louie out, son had a hard time giving meds. 3 days ago had bloody diarrhea, which is usually secondary to stress. Owner started Propectalin. Not eating well, only a little chicken. Hadn't received meds for 24 hours. Very lethargic/wobbly. Last night vomited 3 times brownish/yellow with chicken + bile. Was normal before owner left town, gone 1 week. Last bloodwork = past 2 months. History of: Heart disease, on meds past 2 years; hernia repair ~1 year ago No known medical issues or sensitivities Medications: Hydrocodone 0.1 cc PRN for coughing, Temaril-P 1/4 BID, Pimobendan 1.25 mg 1/2 BID, Enalapril 1/2 BID, Propectalin, Lasix 12.5 mg 1/2 BID -- last time got heart meds was last night 9PM and 11AM. Diet = R.C. kibble + R.C. kidney canned

Abnormal PE/Chem/CBC/UA Results: On PE, severe periodontal disease, generalized muscle wasting and pot-bellied conformation with thin skin/prominent dermal vessels on abdomen; Vitals were normal; he is eupneic and there is no murmur ausculted. - Rads = Mild cranioventral lung infiltrate; renal mineralization bilaterally; gas pattern on V/D (owner notes this is not a dog that eats things he shouldn't) - Bloodwork = Manual PCV/TP = 40%/9.0, leukocytosis 19,700, neutrophilia 14,500, platelets 661,000, mild hyperglycemia 162, elevated BUN/Crea >130/3.6, elevated P 11.7, ALP 429, Cl 108

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			NM	1.57			NM
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		1.0	0.94		1.89		

Cardiac Presentation

The echocardiogram in this patient demonstrated normal **left atrial** size based on 3 different LA measurement methods. Chamber volumes and echogenicity were normal. The cranial and caudal **mitral** valve leaflets presented vegetative thickening consistent with endocardiosis. Doppler indicated measurable 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. 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. The **right ventricle** was of normal size (1/3 diameter of LV), chordae structure, myocardial echogenicity and thickness. **Pulmonic** tract assessment



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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.

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Urinary System

The **urinary bladder**, trigone, and pelvic urethra presented normal thicknesses and normal tone. The ureters were not visible which is normal. No uroliths or sediment were visualized and anechoic urine was present. No evidence of inflammatory or neoplastic changes were noted. Ureteral papillae were normal.

BREED

Chihuahua

The **left kidney** was subnormal in size at 3.05 cm, non-specific with increased cortical echogenicity and slight mineralization. Slight cortical infarct noted as well. The largest calculus measured 4.0 mm.

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Neutered Male

The **right kidney** presented cortical collapse, infarcts and mineralization and was subnormal in size at 2.4 cm. Small pelvic mineralization noted in the right kidney as well.

Adrenal Glands

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Both **adrenal glands** were visualized and recognized as having normal shape, size, position and echogenicity for this breed. The phrenic vasculature, glandular echogenicity and detail were unremarkable. Capsule, cortex, and medullary definition were normal for this age patient. The left adrenal gland measured 0.47 cm. The right adrenal gland measured 0.46 cm.

WEIGHT

3.1 kg

Spleen

The **spleen** in this patient was uniform, yet volume contracted. Hydration status should be assessed.

Liver

INTERPRETED BY

Eric Lindquist, DMV
DABVP, Cert. IVUSS

The **liver** was uniformly swollen with minor, excessive gallbladder debris and over distension with dependent and suspended bile without evidence of overt mucocele formation. However, excessive sludge was present. The liver presented coarse architecture with mildly increased portal markings and subtle, mixed echogenic changes. This is consistent with vacuolar hepatopathy and some level of remodeling and history of inflammatory component. There was no overt suspicion of neoplasia.

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Gastrointestinal

Examination of the **gastrointestinal tract** revealed a stomach and intestine free of stasis, of normal wall thickness, acceptable curvilinear mural detail, and peristaltic activity. Small and large intestine demonstrated normal luminal chyme and stool consistency respectively. No obstructive or overt infiltrative disease was noted. No associated abnormal lymphatic activity was noted.

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Pancreas

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The base and limbs of the **pancreas** were observed to be largely isoechoic to surrounding omental fat. Pancreatic duct and capsular contour were acceptably normal and parenchyma respected normal curvilinear patterns. No overt evidence of active inflammatory or neoplastic disease was noted.

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ULTRASONOGRAPHIC FINDINGS

- Compensated mitral insufficiency, no evidence of volume overload
- Non-specific subjectively near end stage renal disease with fibrosis

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INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

I recommend focusing on acute on chronic renal failure in this patient. The need for cardiac medications at this time is debatable, as the heart appears to be of normal size and internal diameter. Gradually



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weaning off cardiac medications and reassessment of the echocardiogram would be appropriate. Treatment for acute on chronic renal failure warranted otherwise.

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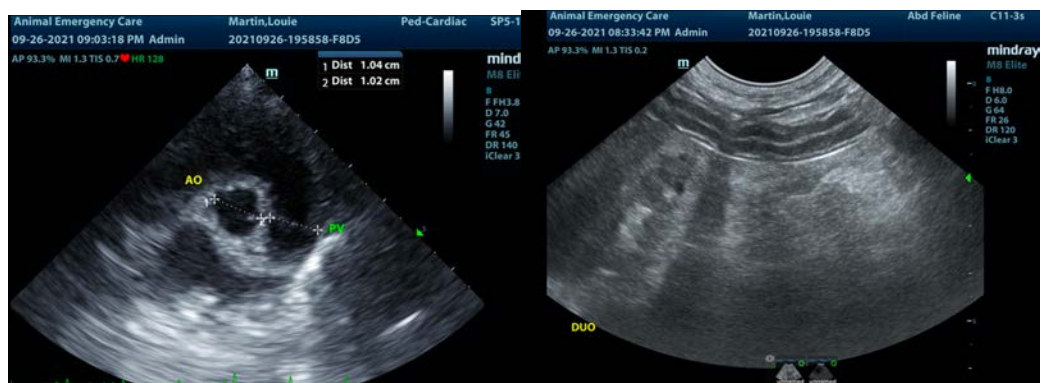
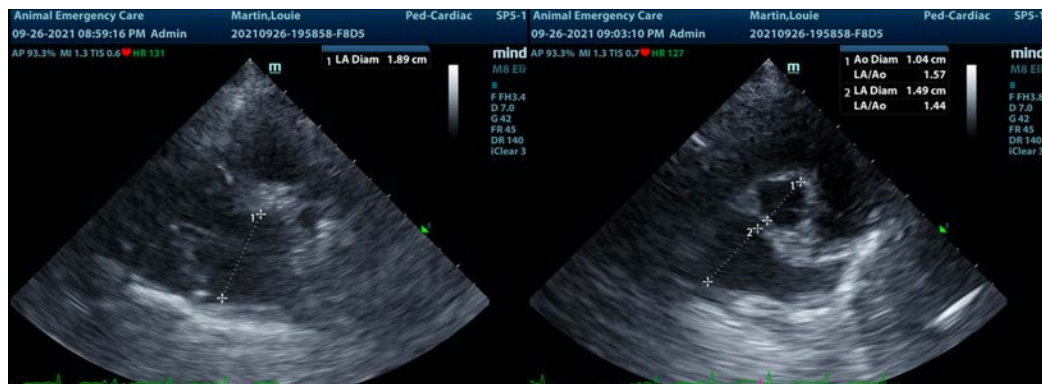
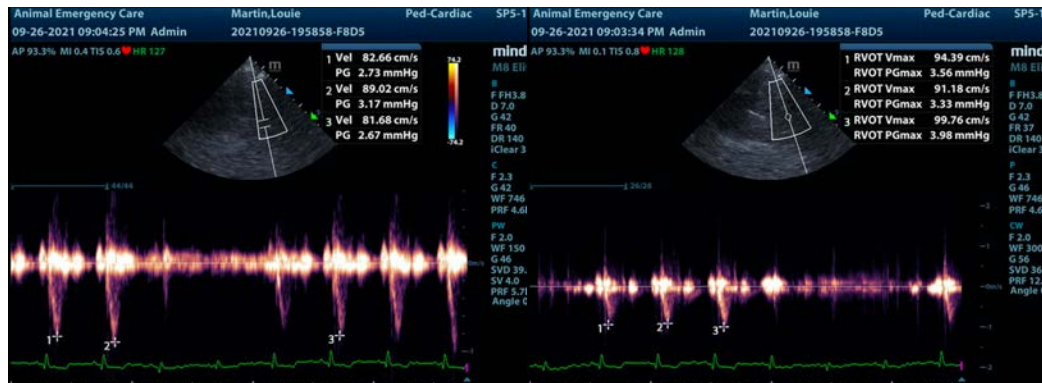
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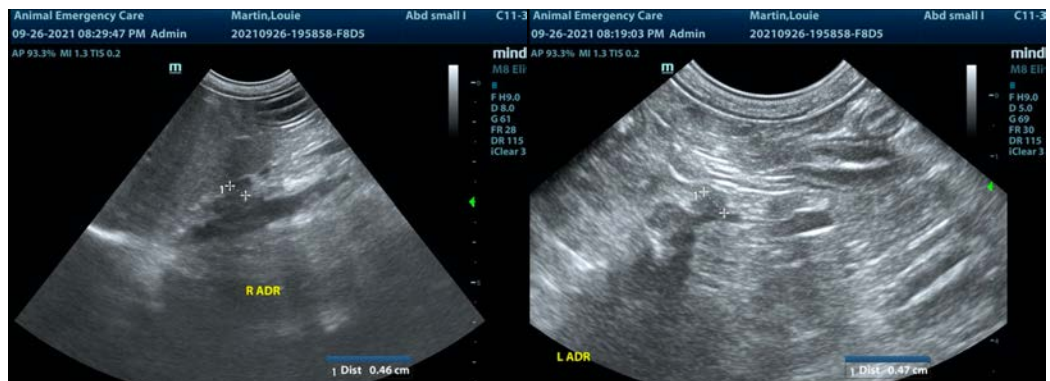
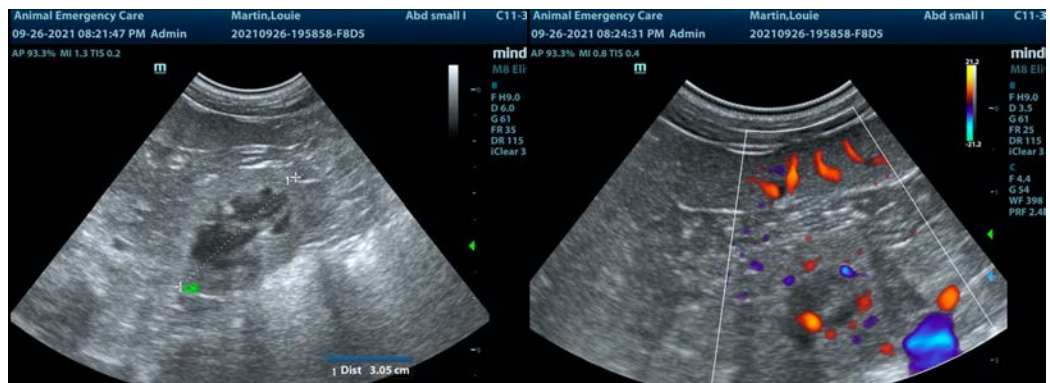
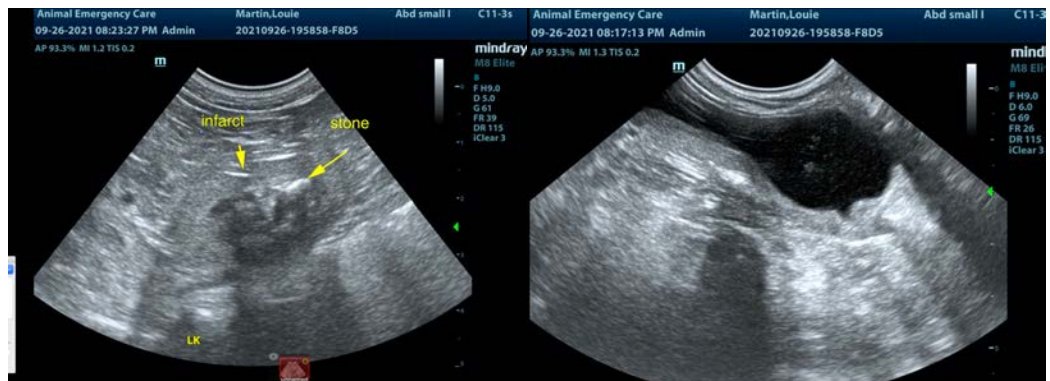
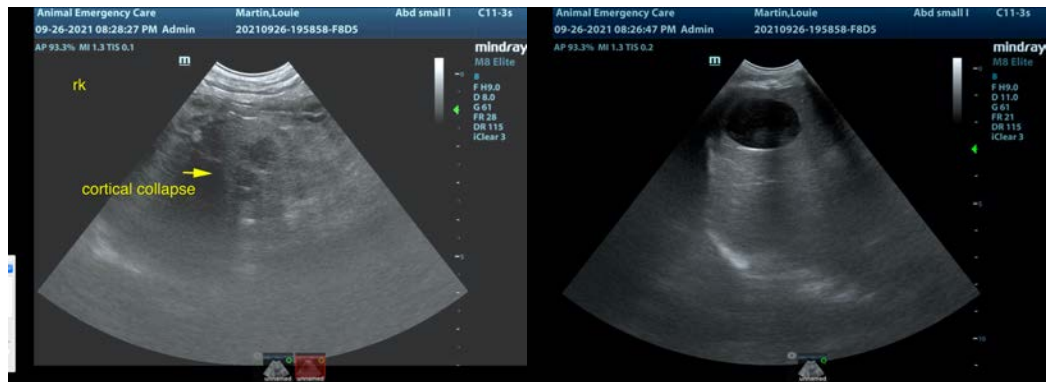
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The information and recommendations provided are based on the images presented by the referring veterinarian. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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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.

BREED

Chihuahua

Eric Lindquist, DMV, DABVP, Cert. IVUSS, CEO of SonoPath.com

info@SonoPath.com

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