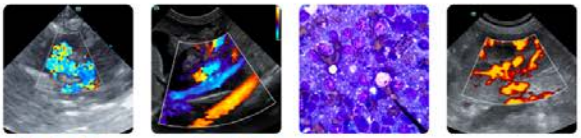

PATIENT

Grayson Roedema

SPECIES

Canine

BREED

Chinese Crested

SEX

Neutered Male

AGE

15 Years

WEIGHT

20 lbs

INTERPRETED BY

Eric Lindquist, DMV, DABVP (CFM), Cert. IVUSS

IMAGING PERFORMED BY

Rebecca Hamilton

HOSPITAL NAME

Loving Care Veterinary Hospital

REFERRING VET

Dr. Steele

INVOICE

72860

DATE

2/10/26

PRESENTING CLINICAL SIGNS

Liver values ^

Meds: Benazepril 5 mg 1 tab q 24 hours

Abnormal PE/Chem/CBC/UA Results: Hemoglob low 14.5, MCH 21.3 low, Reticulocyte low 21.7, Lymphocytes ^, ALT ^ 370, AST ^ 133, ALP ^ 268, Albumin low

ULTRASONOGRAPHIC EXAMINATION OF THE HEART & ABDOMEN

CANINE CARDIAC PARAMETERS	MR VMAX (m/s)	TR VMAX (m/s)	LA/AO (M-Mode)	LA/AO (Heart Base; Swe)	FS (%)	EF (%)	EPSS (cm)
NORMAL PARAMETER	4.5-5.5	<2.7	1.3	Up to 1.6	28-40	40-100	<0.6
PATIENT	5.8	2.8	1.3	1.4	40	80	NM
CANINE CARDIAC PARAMETERS	**HR** (BPM)	**AV VMAX** (m/s)	**PV MAX** (m/s)	**BODY WEIGHT** (lbs)	**LAD** LA MAX 4 Chamber	**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	90	1.9	0.91	20	2.9	3.8	--

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. Slight prolapse of the anterior mitral valve leaflet noted. 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 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. The pelvic urethra was imaged 4.0 cm beyond the cystourethral junction.

The residual prostate measured 5.0 mm.

The **kidneys** revealed largely normal size and structure, corticomedullary definition and ratio (cortex 1/3 of medulla) were essentially maintained with some age-related loss of curvilinear patterns regarding the capsule and C/M junction. The cortices presented largely uniform texture with some increased echogenicity expected for his age patient. Medullary structure differed distinctly from that of the cortex and no evidence of pelvic dilation was present. The left kidney measured 4.0 cm each. The right kidney measured 5.4 cm.

Adrenal Glands

The **left adrenal gland** revealed a focal echogenic nodule at the cranial pole measuring 0.90 cm. Caudal pole measured 0.67 cm.

The **right adrenal gland** presented normal size and contour, measuring 2.0 cm in length x 1.1 cm at the cranial pole and 0.70 cm at the caudal pole.

Spleen

The **spleen** presented a focal hypoechoic nodule measuring 0.73 cm at the caudal pole. Other minor heterogeneous parenchymal changes noted on the spleen, with a more target type nodule at the cranial pole measuring 1.3 cm. Subtle micronodular changes noted elsewhere.

Liver

The **liver** images from right and left intercostal as well as subcostal views revealed subjectively normal liver size, contour, and structure. Some age-related parenchymal remodeling was noted but likely not clinically significant at this time. Vascular and biliary tracts were of normal volume and no evidence of congestion was noted. The gallbladder presented a minor amount of coalesced bile, not pathological.

Hepatic lymph nodes were enlarged and rounded, measuring up to 1.0 cm.

Gastrointestinal

The **gastrointestinal tract** revealed diffuse, hyperechoic fogging or overlay throughout the small intestine as well as areas of mucosal striations and speckling. This striation + fogging effect appeared to exclusively affect the mucosal layer with the submucosa, muscularis and serosa left in-tact. Reactive mesentery was present associated with the serosa indicative of active inflammation. This is most consistent with protein losing enteropathy/lymphangectasia. Full thickness biopsies or endoscopy guided biopsies would be ideal to confirm. No obstructive disease or obvious suspicion of neoplasia.

Pancreas

The base and limbs of the **pancreas** were observed to be largely isoechoic to surrounding omental fat. Some parenchymal remodeling, however, with mild deviation from curvilinear normalcy was observed. Pancreatic duct and capsular irregularities were present consistent with age related changes. If pain

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upon imaging (+ Murphy sign) was present or if the patient is focally painful in subxyphoid palpation then low-grade smoldering chronic pancreatitis should be suspected.

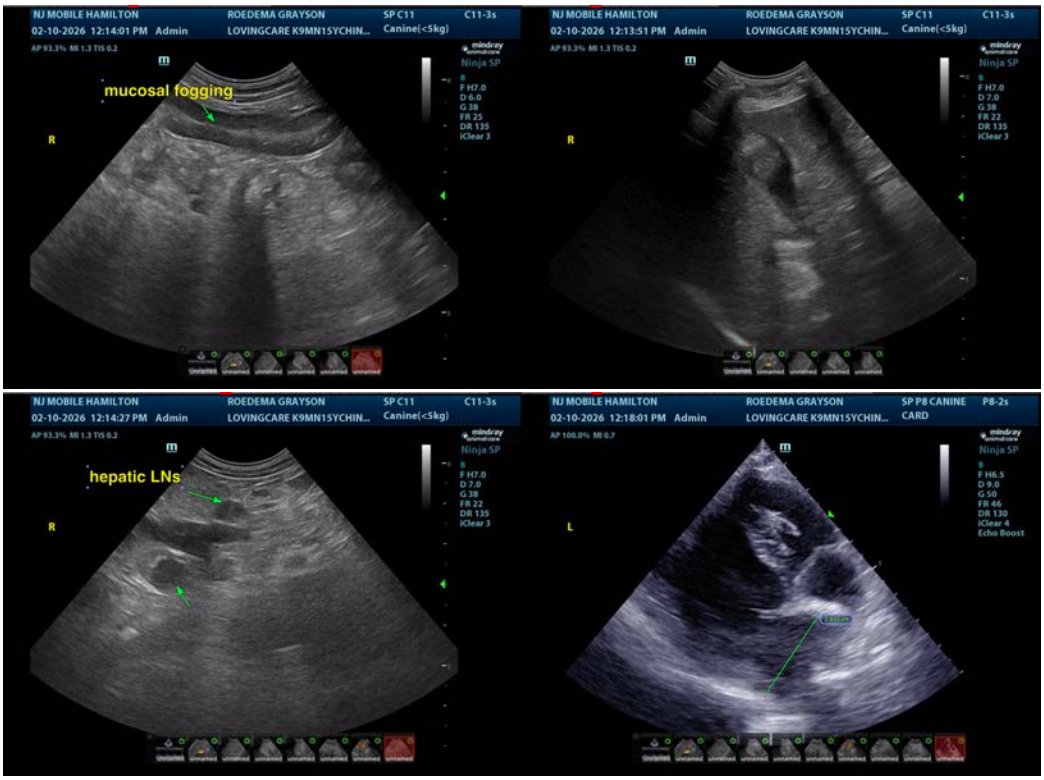
ULTRASONOGRAPHIC FINDINGS

- Stage B1 valvular disease.
- Micronodular spleen with target type nodules – round cell neoplasia versus hyperplasia, splenitis possible.
- Mucosal fogging – suspect protein losing enteropathy.
- Early multifocal lymphadenopathy.
- Left adrenal nodule at the cranial pole.
- Age related pancreatic remodeling.
- Age related renal and hepatic changes.

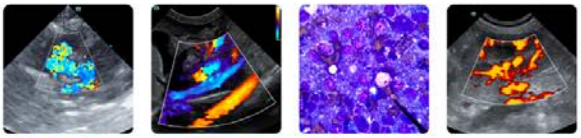
INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

Recommend screening FNA of the spleen and liver in this patient to assess for underlying round cell neoplasia. The accessible lymph nodes will likely be difficult to obtain definitive cytology from.

The heart is stable without clinical disease. No overt contraindication for anesthesia of brief to moderate duration. I suggest Torbutrol premed, Propofol induction, Isoflo maintenance or similar protocol if anesthesia is desired. Blood pressure, EKG and chest radiographs are recommended if not already performed. Target white coat negative systolic pressure of < 160 mmHg. If higher than this ACE-inhibitor is suggested to reach this level. Recheck echocardiogram is recommended in 6 months, earlier if murmur grade increases or clinical signs initiate.



New Jersey Mobile
FUELED BY SONOPATH VETERINARY ULTRASOUND



Clinical Sonography & Telecytology
Educational Teleconsultation Services™

SonoPath www.SonoPath.com info@sonopath.com 800.838.4268

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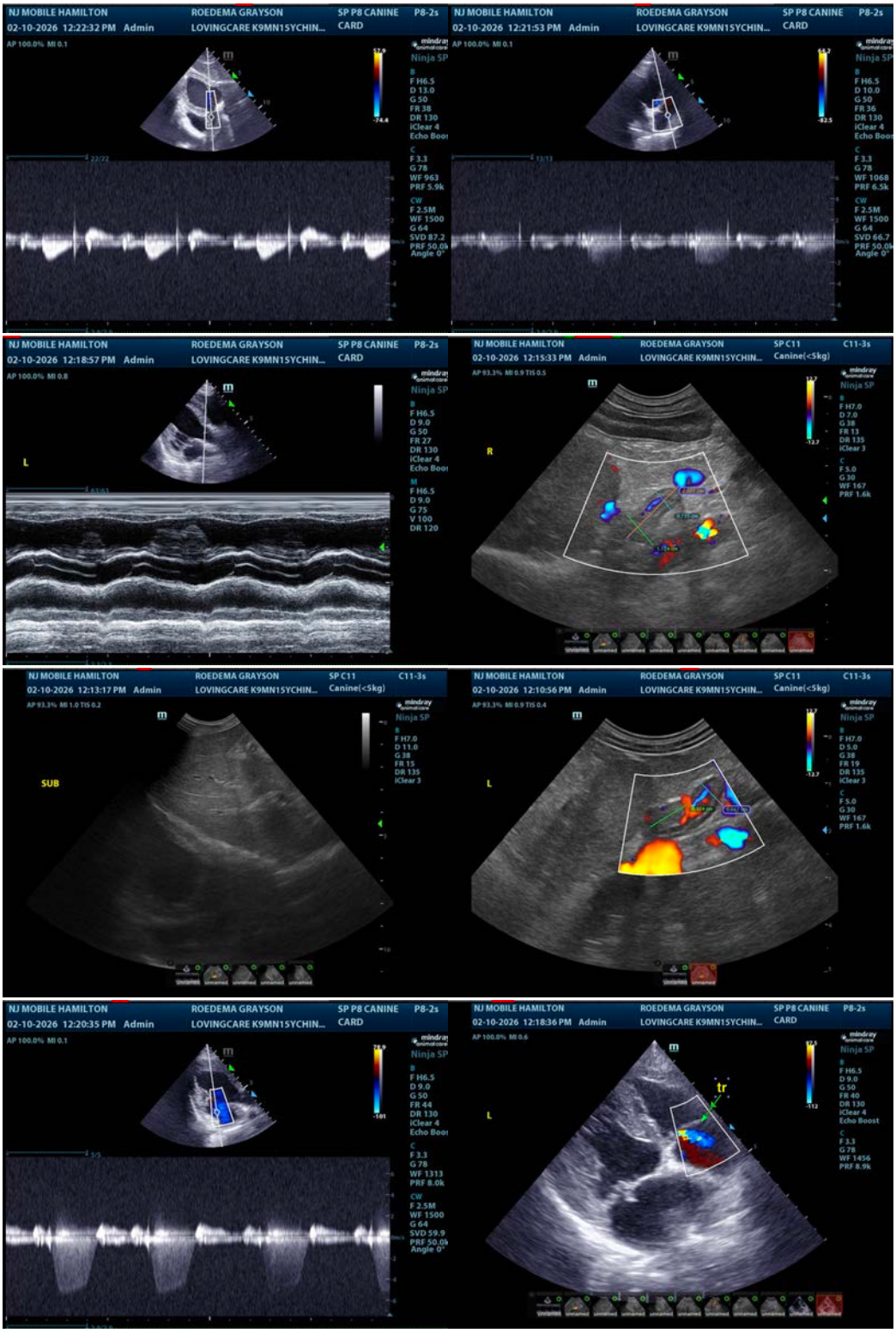

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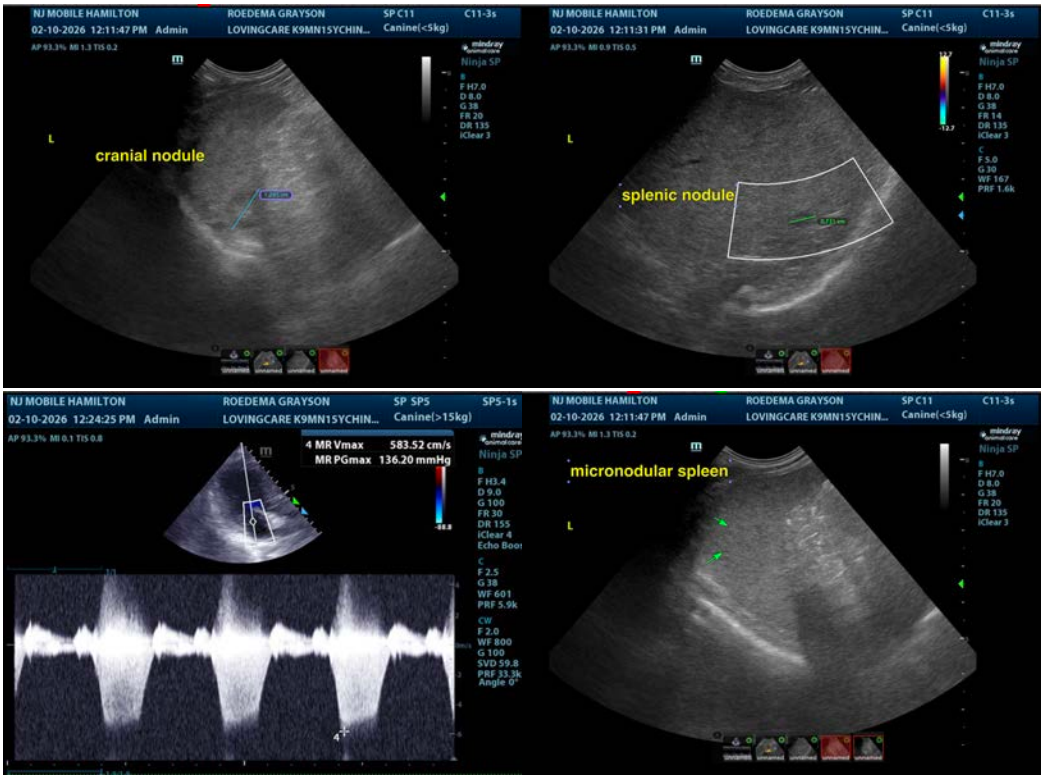

The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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.

Eric Lindquist, DMV, DABVP(CFM), Cert. IVUSS,
CEO, Owner, Founder -- SonoPath.com
info@SonoPath.com