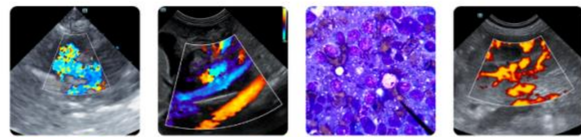


PATIENT

Riley Klein

SPECIES

Canine

BREED

Havanese

SEX

Neutered Male

AGE

14 Years

WEIGHT

15.6 Pounds

INTERPRETED BY

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

IMAGING PERFORMED BY

Rebecca Hamilton

HOSPITAL NAME

Animal General Hudson

REFERRING VET

Dr. Lang

INVOICE

37271

DATE

6/1/26

PRESENTING CLINICAL SIGNS

History: Chronic vomiting w/ occasional specks of blood. Licking during abdominal palpation. Hematoemesis occurs every 2 weeks.

Abnormal PE/Chem/CBC/UA Results: ALP 152, PSL 167, TG 1294, Magnesium 2.6

ULTRASONOGRAPHIC EXAMINATION OF THE HEART & ABDOMEN

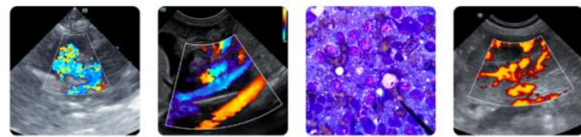
CANINE CARDIAC PARAMETERS	MR VMAX (m/s)	TR VMAX (m/s)	LA/AO (M-Mode)	LA/AO (Heart Base; Swe)	FS (%)	EF (%)	EPSS (cm)
NORMAL PARAMETER	4.5-5.5	<2.7	1.3	Up to 1.6	28-40	40-100	<0.6
PATIENT	6.0	2.5	1.23	--	46	79	0.1
CANINE CARDIAC PARAMETERS	**HR** (BPM)	**AV VMAX** (m/s)	**PV MAX** (m/s)	**BODY WEIGHT** (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	97	1.20	1.00	15.6	--	2.7	--

E-wave velocity: 0.9

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 mild centralized 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** insufficiency was noted. 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.

Urinary System



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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 3.0 cm beyond the cystourethral junction. The residual prostate measured 0.7 cm.

The **kidneys** revealed largely normal size and structure, corticomedullary definition and ratio (cortex 1/3 of medulla) were essentially maintained with some mild 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 this age patient. Medullary structure differed distinctly from that of the cortex, and no evidence of pelvic dilation was present. The right kidney measured 4.0 cm. The left kidney measured 4.1 cm.

Adrenal Glands

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 right adrenal gland measured 0.7 cm at the cranial pole and 0.48 cm at the caudal pole. The left adrenal gland measured 1.8 cm x 0.4 cm at the cranial pole and 0.55 cm at the caudal pole.

Spleen

The **spleen** presented a smooth homogeneous parenchyma hyperechoic to liver and renal cortical parenchyma. The capsule was smooth without noticeable expansion or deviation from within the spleen or adjacent pathology. The splenic vasculature demonstrated normal volume without signs of congestion or thrombosis. No sonographic evidence of acute or chronic inflammatory, neoplastic, or infarctual changes were noted. Cranial folding of the spleen was noted.

Liver

The **liver** images from right and left intercostal as well as subcostal views revealed subjectively normal liver size, contour, and structure. Some moderate 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. Gallbladder polyps were noted. The hepatic lymph nodes were unremarkable.

Gastrointestinal

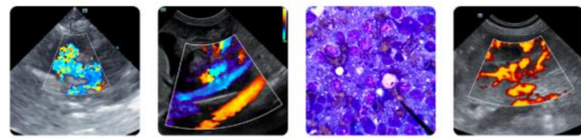
The **stomach** revealed a polypoid mass, extending throughout the pyloric antrum, deriving from the epithelial layer. Submucosa, muscularis and serosa appeared unaffected. The lesion measured approximately 4.8 cm x 1.8 cm. The small intestine and colon were unremarkable.

Pancreas

The right limb of the **pancreas** was heterogenous with mixed echogenic changes.

Free Abdomen

Some reactive **mesentery** was noted associated with the small intestine.



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The mesenteric **lymph nodes** presented normal length to width ratio with slight, swollen contour. There was no loss of parenchymal detail. This is most consistent with reactive lymphadenitis or lymphatic hyperplasia.

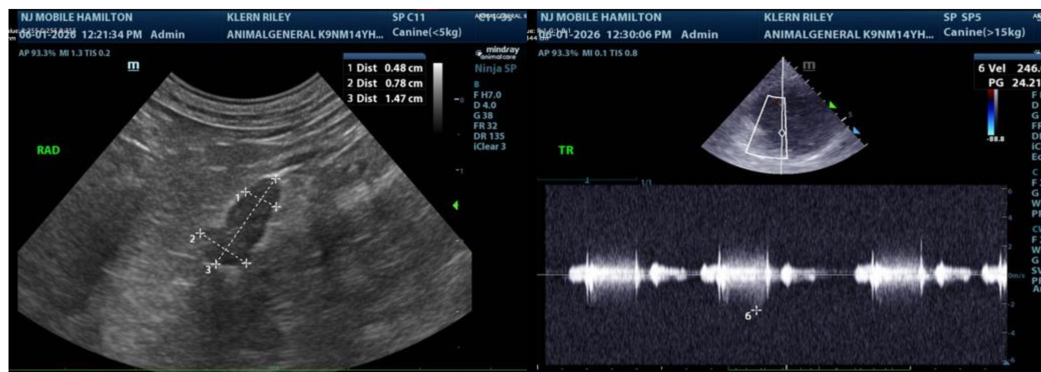
ULTRASONOGRAPHIC FINDINGS

- Stage B1 valvular disease
- Mitral and tricuspid insufficiency, compensated
- Epithelial gastric tumor – low grade epithelial tumor or carcinoma are possible.
- Heterogenous pancreas with mixed echogenic changes
- Gallbladder polyps
- Reactive mesenteric lymph nodes
- Age-related renal and hepatic changes
- Cranial splenic folding

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

There are two separate issues in this patient, steatitis type pattern and the epithelial tumor (likely low grade). Endoscopy would be indicated for further definition. Clinical management for steatitis/pancreatitis should prove effective, however, the gastric tumor should be sampled. The tumor may prove to be resectable, however, would dependent upon exploratory surgery. Canned BID feeding is recommended from an empirical standpoint, as well as GI protectant protocol, as any bulk would likely be irritative and potential cause delayed outflow in this patient.

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 recommended if not already performed and 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.



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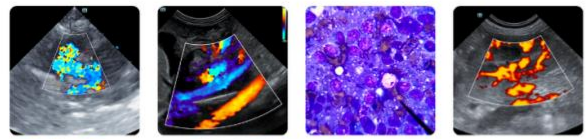

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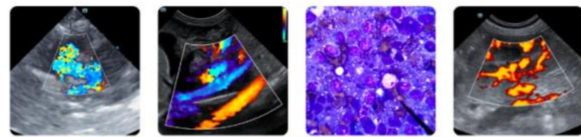

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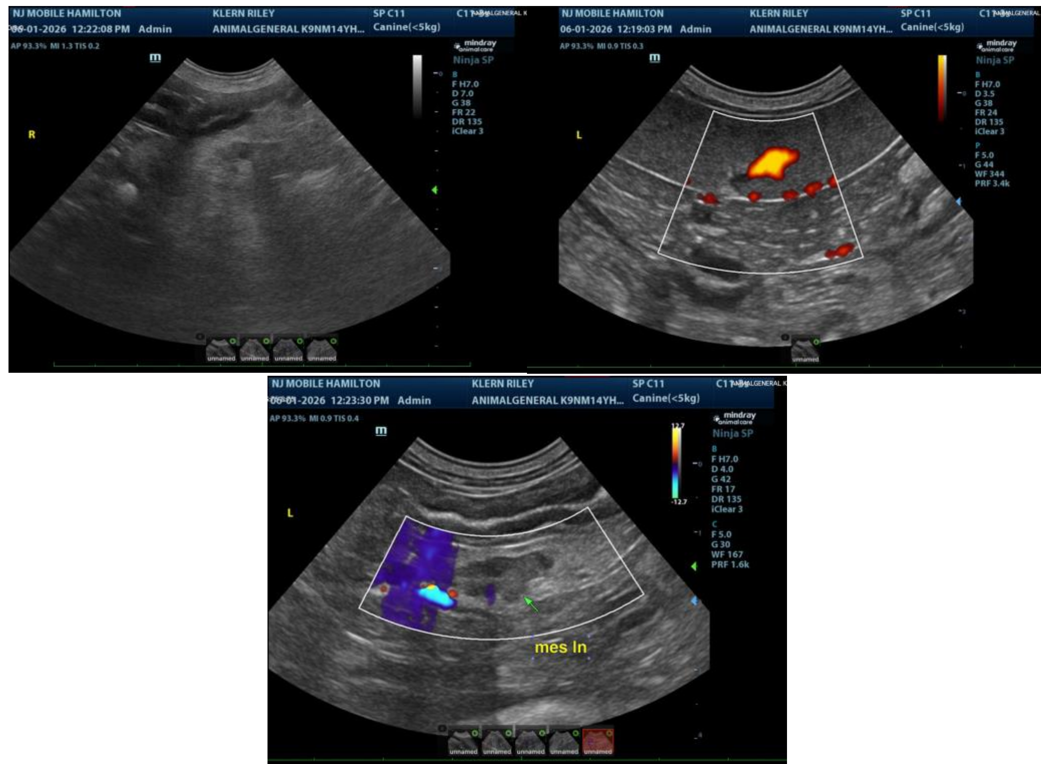

The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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.

Eric Lindquist, DMV, DABVP(CFM), Cert. IVUSS,
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info@SonoPath.com