


PATIENT

Stout Becker

SPECIES

Canine

BREED

Pug

SEX

MN

AGE

8yr

WEIGHT

13

INTERPRETED BY

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

IMAGING PERFORMED BY

Tasha

HOSPITAL NAME

Dillsburd VC

REFERRING VET

Dr. Hlatky

INVOICE

12740ag

DATE

01/23/2023

PRESENTING CLINICAL SIGNS

PLE with diarrhea since October 2022. Lost 30% of body weight. Responded well to Pred initially. Weight loss plateaued until January 2023 then began again. Corneal ulcer appeared in combination with neutrophilia and worsening PLE. Pred increased to 7.5 mg BID, Atopica added, ocular topicals introduced, oral doxycycline added. Intermittent vomiting over past three weeks became severe last night. Pet presented limp, 10% weight loss over 4 days. Repeat labs show hypoglobulinemia increased, new, severe lymphopenia, neutrophilia unchanged. Chem revealed new hepatopathy, pancreatitis and worsening hypoproteinemia. Rads reveal curious heart base density. I am suspicious of GI lymphoma.

Abnormal PE/Chem/CBC/UA Results: see attached

ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN AND HEART

	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				1.3		25	50	0.2
	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	NM	NM		2.8	2.6	

Cardiac Presentation

The echocardiogram in this patient demonstrated normal left atrial size based on 2 separate methods of LA evaluation. The cranial and caudal mitral valve leaflets presented normal linear structure, extension in systole, and union in diastole with normal kinesis. No overt MR on Doppler. 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 subjectively mild subnormal as 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. The right atrium and auricle revealed normal size, structure and content. No evidence of masses was noted. Tricuspid valvular assessment demonstrated adequate linear morphology and kinesis. No overt TR on Doppler. The right ventricle was of normal size (1/3 diameter of LV), chordae structure, myocardial echogenicity and thickness. Pulmonary outflow tract assessment revealed normal valve structure, laminar flow, and diameter (approx.1:1 pa/ao ratio). Normal measured RVOT velocity. No visible pericardial or free pleural fluid was noted. The cranial mediastinum and pericardial and extra-cardiac regions were free of masses in the visible window. No overt arrhythmia.

Urinary System



PATIENT	
Stout Becker	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.
SPECIES	
Canine	Normal size and margination were present in the left kidney. A normal 1:3 cortex / medulla ratio was maintained. The medulla and cortex 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. Discrete left kidney medullary mineral was present. The left kidney measured 4.1 cm in length. The right kidney was indistinctly visualized.
BREED	
Pug	The area of the aortic trifurcation was free of pathology. The area of the residual prostate appeared normal and free of pathology.
SEX	Adrenal Glands
MN	The bilateral adrenal glands were not definitively visualized potentially owing to subnormal adrenal size or suppression secondary to the prednisone therapy.
AGE	Spleen
8yr	The spleen was not overtly visualized, potentially owing to volume contraction. No obvious splenic pathology.
WEIGHT	Liver/Gallbladder
13	The liver presented borderline to mildly enlarged in size. The parenchyma of the liver was subjectively normal in echogenicity compared to the spleen and renal cortices. The liver parenchyma was uniform with a mildly coarse echotexture. The capsule of the liver was symmetrically rounded to mildly swollen in margination. The hepatic and portal vasculature were normal in appearance without signs of congestion. The gallbladder was non-distended in size with primarily anechoic luminal content. The cystic and common bile ducts were normal.
INTERPRETED BY	Gastrointestinal
R. McKenzie Daniel, DVM, DABVP (Canine and Feline)	The stomach presented wall thickening secondary to echogenic mucosa hypertrophy. Intact wall layering was maintained and distinct. Potential for gastric wall edema was present. Mild gastric distension with moderate retained primarily anechoic fluid was present.
IMAGING PERFORMED BY	HOSPITAL NAME
Tasha	The small intestine presented generalized to variable thickened walls with variably distinct wall layering along with variable duodenojejunal mucosal hyperechogenicity to fogging. Minor non-obstructive duodenojejunal ileus was present. No overt intestinal masses were visualized.
HOSPITAL NAME	REFERRING VET
Dillsburg VC	Normal visible colon wall layers were present with apparent semi formed to soft feces in lumen.
REFERRING VET	Pancreas
Dr. Hlatky	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.
INVOICE	Free Abdomen
12740ag	Mild volume peritoneal free fluid was present. No overt lymphadenopathy or omental masses were present.
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ULTRASONOGRAPHIC FINDINGS

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- Normal echocardiogram with subjective mild subnormal LV contractility-patient variant, systemic disease, metabolic disease or athletic state possible. DCM criteria was not met
- Mild hypomotile gastritis pattern
- Chronic enteropathy exhibiting variable wall thickening, variably indistinct wall layer detail including duodenojejunal mucosa hyperechogenicity/fogging and segmental non-obstructive ileus
- Non-specific yet subjective benign hepatopathy
- Mild gallbladder debris (non-mucocele)
- Mild volume peritoneal free fluid

SEX

MN

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

AGE

8yr

The chronic enteropathy presentation may be consistent with chronic to progressive PLE (IBD, lymphangiectasia, etc.) although infiltrative neoplasia is a potential. Intestinal biopsies may be required for a definitive diagnosis yet would be contraindicated if ALB < 2.0. No overt sonographic evidence of significant pancreatitis was present although mild concurrent pancreatitis could be possible. A GI panel to include PLI/TLI/Cobalamin/Folate is recommended.

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No overt evidence of cardiac or pericardial neoplastic criteria. Some or all of the following protocol may be considered empirically. Part or all of this protocol may be considered based on your clinical impression of the patient:

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OBJECTIVE: keep albumin levels > 2 g/dl, avoid thromboembolism and cavitory effusions, monitor concurrent PLN (Wheaton Terrier PLE/PLN) and liver disease:

Plasma 10 mL / kilogram IV over 4 hours

Or **Human albumin** 2 ml/kg/h over 10 hours. Total daily volume 20.l/kg/day

And Colloids/Hetastarch

10 to 20 mL per kilogram per day and dogs

10 to 15 mL per kilogram per day cats

(Can bolus first 1/3 of dose over 15 minutes)

& maintain on LRS maintenance otherwise.

Metronidazole (10-20 mg/kg po bid)

Famotidine 1 mg/kg lv Im po dc Sid /bid

Sucralfate 0.5-1 g po tid dogs, 0.5 g bid cats in slurry Or **Misoprostol** 1-5 ug/kg po tid

Diet: Highly digestible high quality protein, low fiber, low fat diet (< 15% of dry matter). Hydrolyzed protein or novel protein. Purina HA or Royal Canine HP or similar.

Prednisone or prednisolone 2 mg/kg bid x 3-5 days then 2 mg/kg sid. **Chlorambucil** in refractive severe IBD/alimentary lymphoma cases (monitor cbc for rare bone marrow suppression) 4 mg/m²Q 24-48 hours.

Cobalamin (B12) 250-1500 ug/dog weekly x 6 weeks.

Calcium supplementation if necessary.

Aspirin 0.5-1 mg/kg/day or **Clopidogrel** (Plavix) 1-5 mg/kg/day.

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For an additional charge, internal medicine consult can be utilized through SonoPath.com. You can select the internal medicine drop down at <http://spa.sonopath.com/>.

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One of the world's top internists & SonoPath associate Dr. Remo Lobetti BVSc, MMedVet, PhD, DECVIM can evaluate your case through SonoPath. <https://sonopath.com/resources/sonopath-services/internal-medicine-teleconsultation-service>



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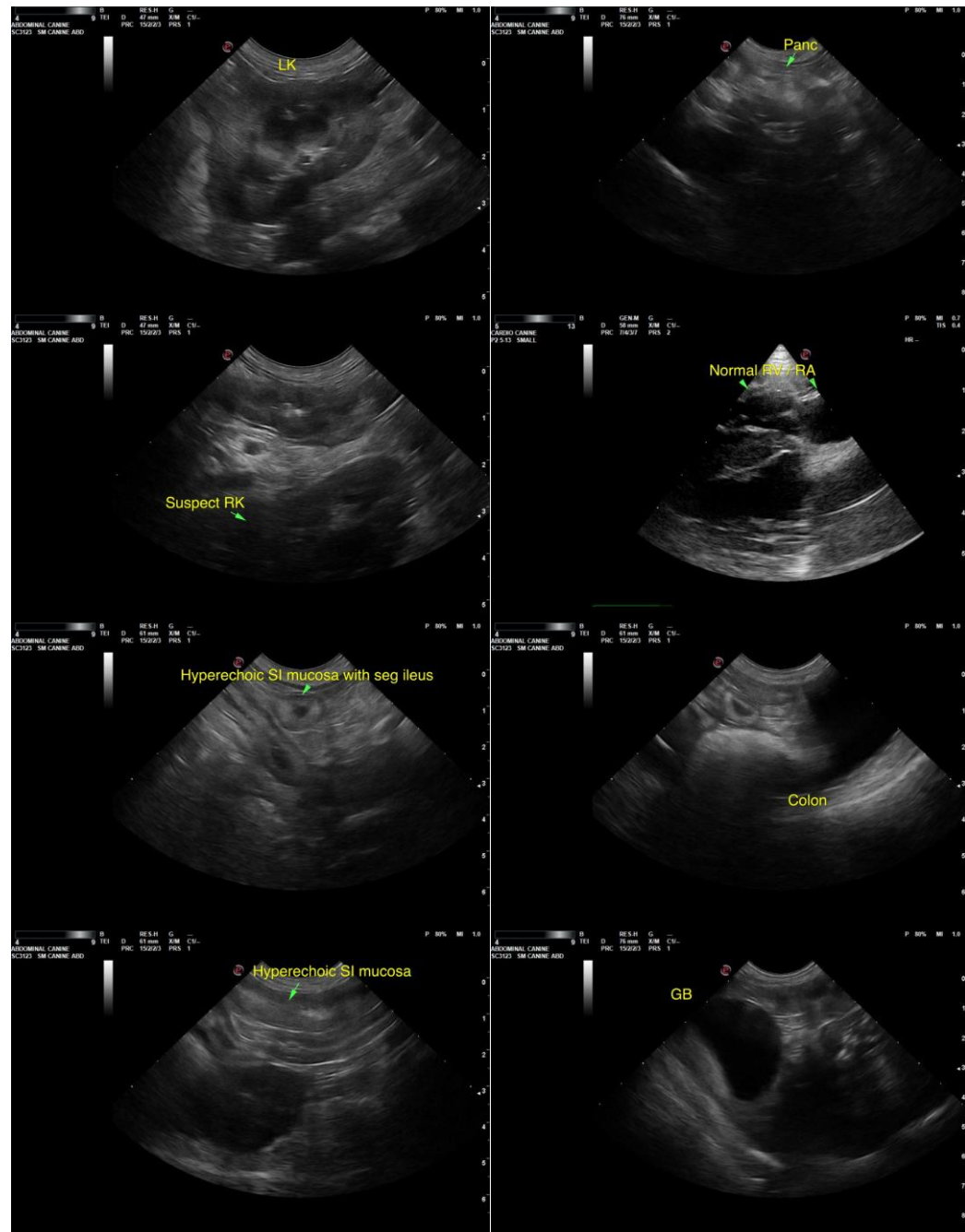
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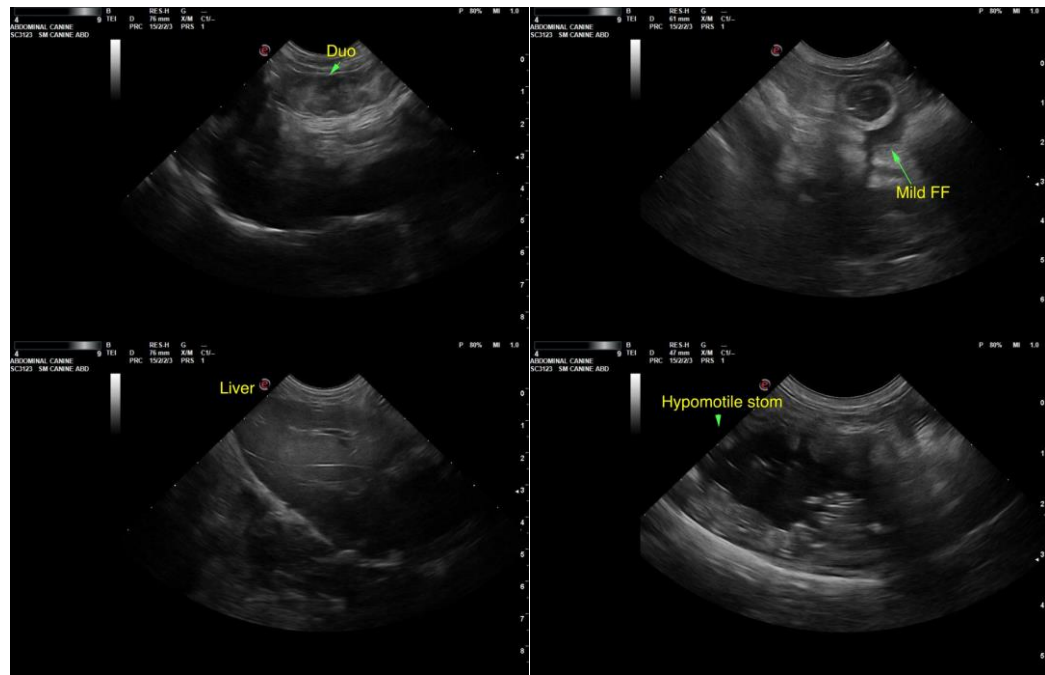
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The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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(Canine and Feline)

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.

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