



PATIENT

Loki Hamarlund

SPECIES

Canine

BREED

Yorkie

SEX

M

AGE

7 months

WEIGHT

4

INTERPRETED BY

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

IMAGING PERFORMED BY

Tasha

HOSPITAL NAME

Dillsburg VC

REFERRING VET

Dr. Crow

INVOICE

12422

DATE

10/21/21

PRESENTING CLINICAL SIGNS

The heart sounds are crisp, but there is a background whoosh which may be blood moving through the aortic arch. Tachycardia only on EKG.

Abnormal PE/Chem/CBC/UA Results: BW WNL; Accuplex negative; No x-rays done

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	1.48	50.6	85.6	0.1
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	BELOW	BELOW	BELOW	BELOW
PATIENT	NM	NM	NM		1.5	1.8	

Cardiac Presentation

The echocardiogram in this patient demonstrated normal **left atrial** size based on 3 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. 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. **Tricuspid** valvular assessment demonstrated adequate linear morphology and kinesis. 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). No visible **pericardial** or free pleura fluid was noted. The cranial **mediastinum and pericardial and extra-cardiac regions** were free of masses in the visible window.

Urinary System

The urinary bladder, trigone, cystourethral junction, and visible pelvic urethra to a depth of 2.0 cm exhibited normal thickness and tone. Anechoic urine was present in the lumen with no uroliths or



PATIENT	sediment. The ureteral papillae were normal. The ureters were not visible which is normal. No evidence of inflammatory or neoplastic changes was noted.
Loki Hamarlund	
SPECIES	The prostate was of expected size and presentation for a young, intact, male canine.
Canine	The area of the aortic trifurcation was free of pathology.
BREED	Normal size and margination were present in the kidneys. A normal 1:3 cortex / medulla ratio and normal corticomedullary definition were maintained. The echogenicity of the cortex was similar to or slightly less than normal liver parenchyma while the medulla echogenicity was hypoechoic to the cortex with no evidence of pelvic dilation. The left kidney measured 2.7 cm in length. The right kidney measured 3.0 cm in length.
Yorkie	
SEX	Adrenal Glands
M	No overt pathology was noted in the area of the left or right adrenal glands.
AGE	Spleen
7 months	The spleen exhibited a finely textured and homogenous parenchyma which was hyperechoic to the liver and renal cortical parenchyma. 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. Acute to chronic inflammatory, neoplastic, or benign parenchyma changes were not noted.
WEIGHT	Liver/ Gallbladder
4	The liver was subjectively normal in size, structure, and contour. The liver parenchyma was uniform and hypoechoic to the spleen with a mild coarse echotexture. The hepatic and portal vasculature were normal in appearance without signs of congestion. No evidence of a portosystemic vascular anomaly. The gallbladder was non-distended in size with thin walls and 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 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.
IMAGING PERFORMED BY	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.
Tasha	Normal visible colon wall layers were present with apparent formed feces in lumen.
HOSPITAL NAME	Pancreas
Dillsburg VC	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 were evident.
REFERRING VET	Free Abdomen
Dr. Crow	Intermittent mesenteric lymph nodes were present. The lymph nodes were essentially isoechoic to adjacent omentum without evidence of peripheral inflammation and maintaining a normal width: length ratio (<0.5). No effusion was noted.
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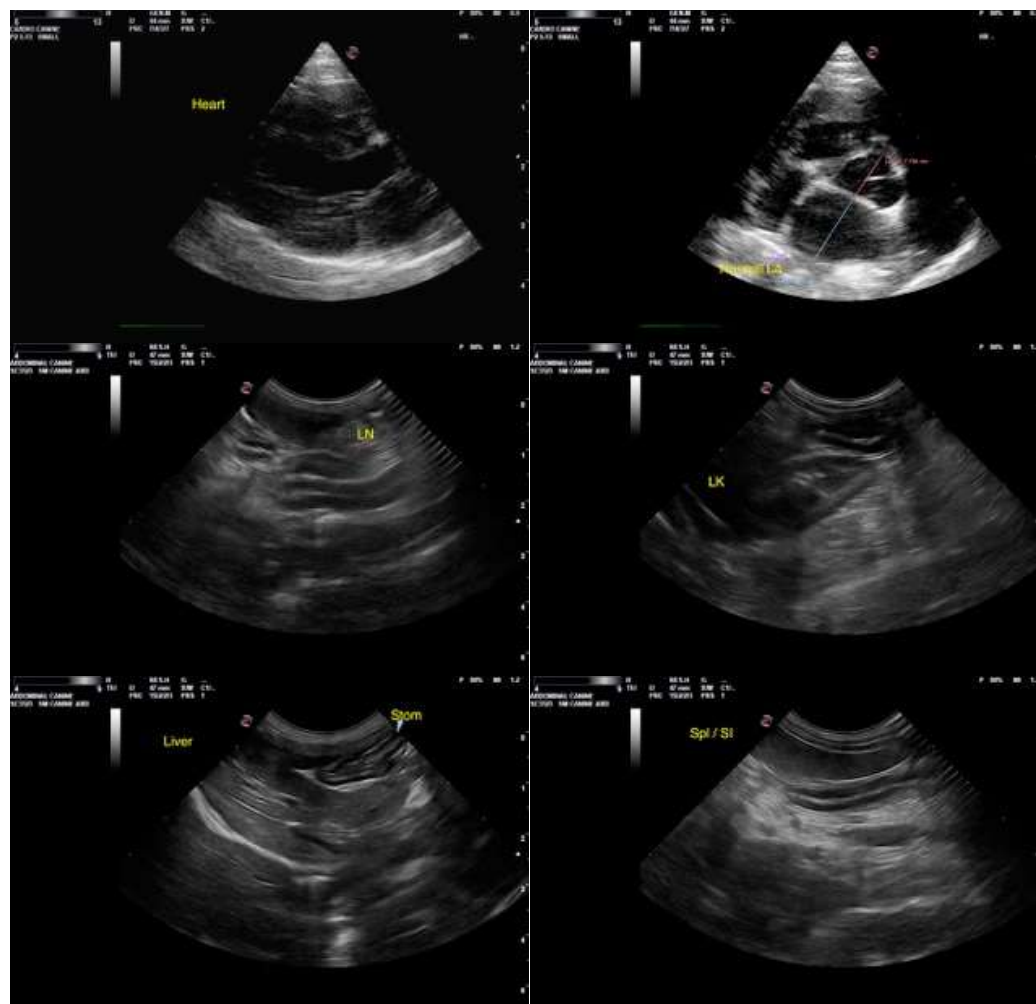
ULTRASONOGRAPHIC FINDINGS

Primary Findings

- Overtly normal cardiac structure and function
- Sonographically unremarkable abdomen for age - minor mesenteric lymphadenopathy likely indicative of immunologic immaturity or minor hyperplasia

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

No evidence of structural or functional cardiomyopathy, including no overt evidence of valvular Insufficiencies, stenotic disease, shunt (given the lack of left heart volume overload), or systolic dysfunction. A physiologic flow murmur, potentially only present at elevated heart rates, or if definitive murmur, small flow abnormality not visualized in this study are possible. However, given the lack of left or right heart chamber enlargement, conservative monitoring of the abnormal heart sound would be reasonable at this time. Recheck echocardiogram is suggested in 3-4 months if abnormal heart sounds or murmur persist with potential cardiology referral.





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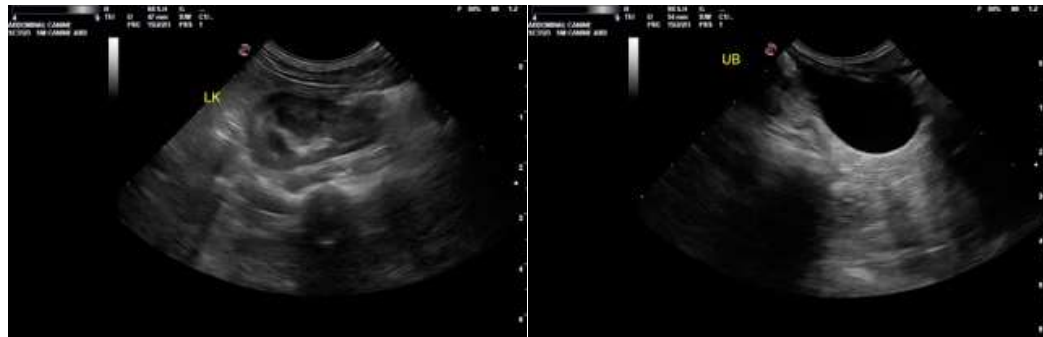
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The information and recommendations provided are based on the images presented by the referring veterinarian. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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.

R. McKenzie Daniel, DVM, DABVP (Canine / Feline Practice)
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