


PATIENT

Lilly Leavitt

PRESENTING CLINICAL SIGNS

No BM or urination since Sat, lethargic

SPECIES

Canine

BREED

Pug X

SEX

Spayed Female

AGE

8 Years

WEIGHT

32 Pounds

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	1.31	30.8	87	0.30
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	1.0	0.9		2.4	2.6	

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 mildly subnormal as evidenced by the fractional shortening measurement below and the 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.

INTERPRETED BY

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

IMAGING PERFORMED BY

Jenn

HOSPITAL NAME

Rockaway AH

REFERRING VET

Dr. Maniar

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 sediment. The ureteral papillae were normal. The ureters were not visible which is normal. No evidence of inflammatory or neoplastic changes were noted.

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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 4.7 cm. The right kidney measured 4.9 cm.



PATIENT	<i>Adrenal Glands</i>
Lilly Leavitt	The left adrenal gland was uniform in size and contour with a uniformly hypoechoic parenchyma. The left adrenal gland measured 1.8 cm length x 0.65 cm at the caudal pole.
SPECIES	The right adrenal gland was not definitively visualized.
Canine	<i>Spleen</i>
BREED	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.
Pug X	
SEX	<i>Liver</i>
Spayed Female	The liver presented 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.
AGE	
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WEIGHT	<i>Gastrointestinal</i>
32 Pounds	The stomach presented wall thickening secondary to echogenic mucosa hypertrophy. Intact wall layering was maintained and distinct. The stomach was primarily empty with minor retained anechoic fluid, yet without evidence of mechanical pyloric outflow obstruction. Gastric body wall measured 0.37 cm.
INTERPRETED BY	The duodenum exhibited intact yet indistinct thickened wall layering with minor duodenal ileus, yet without evidence of duodenal obstructive pattern. Duodenal wall measured up to 0.64 cm directly adjacent to the right pancreatic limb.
R. McKenzie Daniel, DVM, DABVP (Canine and Feline)	Normal visible colon wall layers were present with apparent formed feces in lumen.
IMAGING PERFORMED BY	<i>Pancreas</i>
Jenn	Diffuse enlargement of the pancreas with ill-defined, hypoechoic to heterogeneous parenchyma and asymmetrical contour was present. Regional hyperechoic mildly non-uniform mesentery and intermittent scant pocket of peripancreatic free fluid noted.
HOSPITAL NAME	<i>Free Abdomen</i>
Rockaway AH	No overt pathology in the area of the uterine remnant or iliac trifurcation.
REFERRING VET	ULTRASONOGRAPHIC FINDINGS
Dr. Maniar	<ul style="list-style-type: none"> • Normal echocardiogram with mild LV hypocontractility – systemic disease, hypothyroidism, athletic state (if clinically applicable) may present in this manner. • Active moderate to severe pancreatitis with regional peritonitis • Moderate to marked gastroduodenitis • Sonographically unremarkable urinary bladder
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INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

The lack of left atrial enlargement in the face of mild LV hypocontractility and without additional clinical issues such as overt clinical pulmonary hypertension indicate that the current and future risk of complication, given the cardiac presentation, is low. Assessment of T4 levels may be considered if clinically indicated.

Minor potential for pancreatic or upper gastrointestinal emerging mural neoplasia, which may present in similar sonographic manner as pancreatic and upper gastrointestinal inflammation, considered less likely yet cannot be definitively excluded.

Assuming normal clotting status, ultrasound guided FNA of the pancreas could be considered for screening cytology. Aggressive medical therapy for acute pancreatitis, which may include as needed gastrointestinal support, plasma expanders, antibiotics, with assessment of clinical response, as well as further assessment include spec cPL as well as full CBC/Chem panel and urinalysis would be reasonable. Recheck sonogram may be considered in 3-5 days pending clinical response to therapy.

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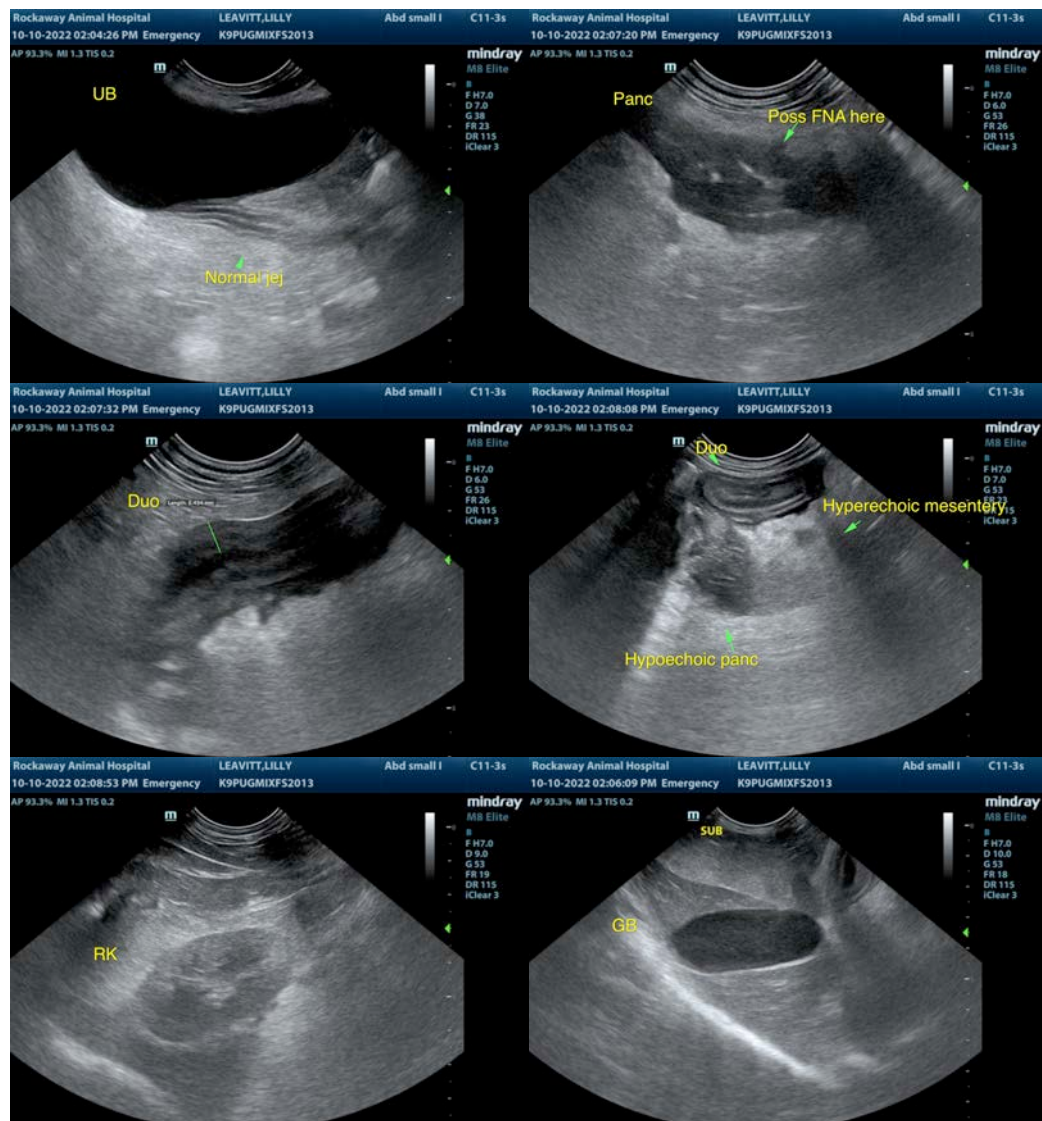
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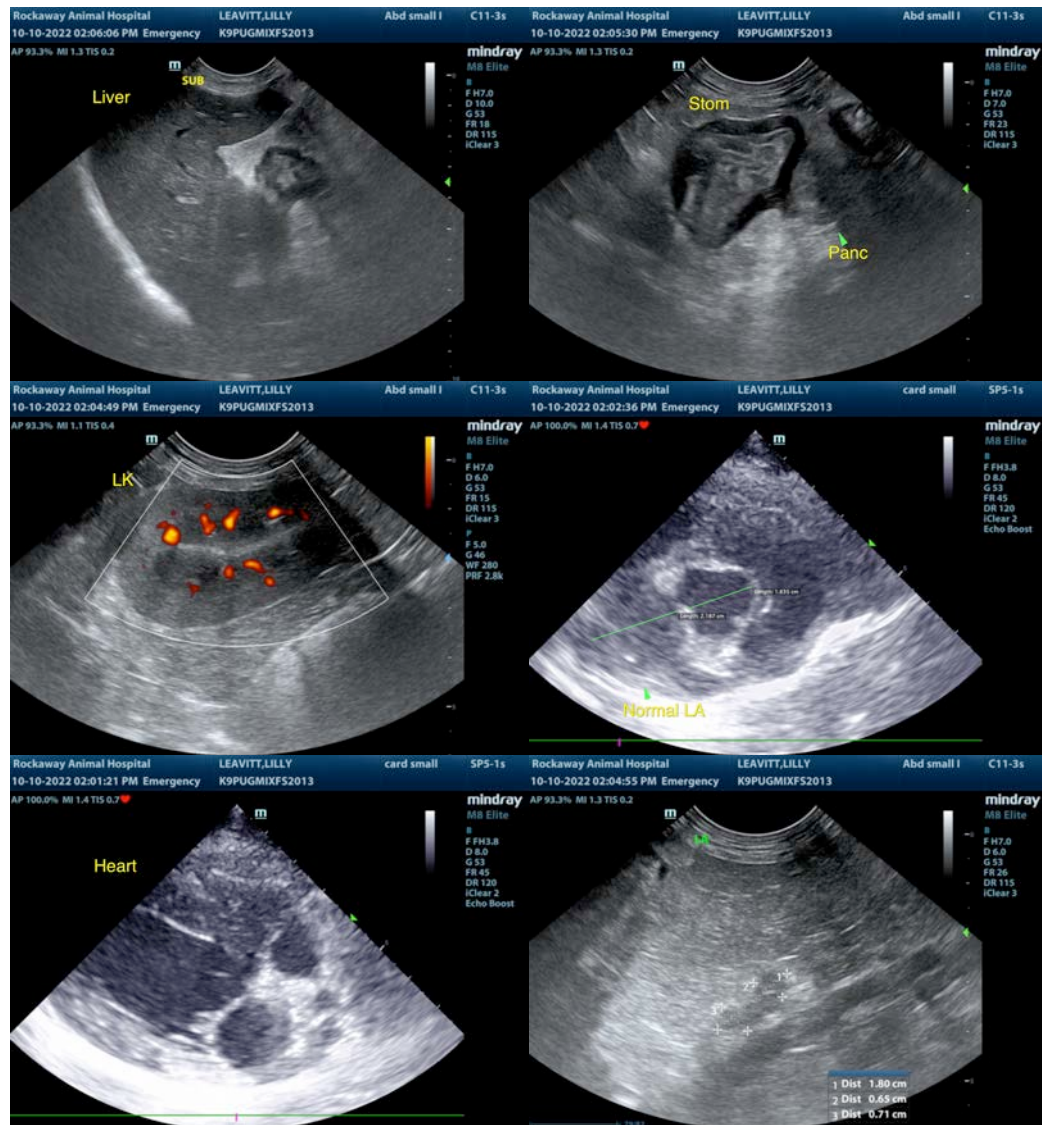
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The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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.

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

info@SonoPath.com