



PATIENT PRESENTING CLINICAL SIGNS

Lulu Kaufman Echo: grade 2/6 systolic murmur, PMI right sternal border, no clinical issues. ProBNP elevated. Abd: high BUN and calcium, creatinine normal.
SPECIES Abnormal PE/Chem/CBC/UA Results: BUN 46, calcium 13.0, protein normal: TP 7.2, albumin 3.8, glob. 3.4, ProBNP 113.0.

Feline

ULTRASONOGRAPHIC EXAMINATION OF THE HEART & ABDOMEN

BREED	FELINE CARDIAC PARAMETERS	BODY WEIGHT (kg)	HR (BPM)	IVSd (cm)	LVIDd (cm)	LVWd (cm)	FS (%)	EF (%)
DMH	NORMAL PARAMETER	-----	150-240	0.3-0.6	1.0-2.1	0.25-0.6	35-67	80-100
	PATIENT		106	0.45	1.55	0.45	51.6	86.6
SEX	FELINE CARDIAC PARAMETERS	LA/AO (Boon)	LA/AO HEART BASE (Sisson)	LA 2D 4-chamber long axis AS to FW (Sisson) (cm)		LVOT VEL. (m/s)	RVOT VEL. (m/s)	IVRT (m/)
Spayed Female								
AGE	NORMAL PARAMETER	<1.5	0.88-1.79	0.7-1.7		<1.6	<1.3	40-60
9 Years	PATIENT	1.3	1.26	1.2		1.0	0.77	NM
WEIGHT	Adapted from June Boon, Veterinary Echocardiography, 1998 Sisson D et al. JVIM 1991; 5: 232, Jacobs et al. Am J Vet Res 1985; 46:1705							
9.7 Pounds								

INTERPRETED BY

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

IMAGING PERFORMED BY

Kelly Vazquez

HOSPITAL NAME

Midland Park VH

REFERRING VET

Dr. John Shokoff

Cardiac Presentation

The echocardiogram in this patient demonstrated normal **left atrial** size based on 3 separate LA measurements. The cranial and caudal **mitral valve** leaflets presented normal linear structure and kinetics. The **left ventricle** presented normal 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 and angles 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 and kinetics. 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 or extra cardiac pathology in the visible planes. The cranial **mediastinum and pericardial 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 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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The area of the aortic trifurcation was free of pathology.



PATIENT

Lulu Kaufman

Normal size and margination were present in the left kidney. 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 4.3 cm.

SPECIES

Feline

The right kidney was mildly subnormal in size compared to the left, measuring 3.2 cm. Cranial cortical infarct noted. A normal 1:3 cortex / medulla ratio was maintained. The medulla and cortices were uniform in texture with some increased echogenicity and loss of corticomedullary symmetry and definition expected for the age of the patient. No evidence of pelvic dilation was present.

BREED

DMH

Adrenal Glands

No obvious pathology in the area of the left and right adrenal glands.

SEX

Spayed Female

Spleen

The spleen exhibited a finely textured and homogenous parenchyma which was hyperechoic to the liver and renal cortical parenchyma. The spleen measured 0.82 cm in width at the level of the hilus. 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.

AGE

9 Years

Liver

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. The gallbladder was non-distended in size with thin walls and primarily anechoic luminal content. The cystic and common bile ducts were normal.

WEIGHT

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Gastrointestinal

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.

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.

Normal visible colon wall layers were present with apparent formed feces in lumen.

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Pancreas

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The left limb of the pancreas was normal in size and contour with mild uniform hypoechoic parenchyma compared to adjacent omentum.

Free Abdomen

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Several enlarged colic lymph nodes were present adjacent to the ileocolic junction. Example measured 0.46 cm diameter. These lymph nodes were homogenous, mildly hypoechoic and smoothly marginated. A normal width: length ratio was maintained (<0.5). Evidence of perilymphatic inflammation was evident.

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No free fluid.

ULTRASONOGRAPHIC FINDINGS

DATE

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- Normal echocardiogram
- Right kidney non-specific chronic renal changes with cranial cortical infarct



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- Non-specific mildly hypoechoic left pancreas – patient variant, potential for low-grade inflammation.
- Mild colic lymphadenopathy – hyperplasia secondary to potential antigenic stimulation, mild lymphadenitis possible. Lymph nodes were not overtly consistent with neoplastic criteria.

SPECIES

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INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

Overtly normal cardiac structure and function without evidence of clinical issue such as systolic dysfunction, left or right heart chamber enlargement, or significant valvular insufficiencies noted. No evidence of infiltrative cardiac neoplasia or tumors. An obvious cause of the murmur was not definitively evident. Assuming no evidence of volume changes such as dehydration or anemia, a physiologic flow murmur or potential small flow abnormality not visualized are possible.

Regardless, the normal overall cardiac presentation indicates that the risk secondary to the low-grade murmur is low. No indication for cardiac medications. Conservative monitoring at this stage would be appropriate. Recheck echocardiogram suggested if clinical issues consistent with cardiac disease arise, or if murmur intensity progresses.

Assessment for evidence of cranial abdominal or subxiphoid discomfort on palpation associated with the pancreas and/or spec fPL could be considered. Overt evidence of neoplastic criteria within the abdomen was not present. Further renal staging to include urine C/S and protein: creatinine ratio on sterile urine sample may be considered. If persistent hypercalcemia, hypercalcemia panel may be considered for further clarification.

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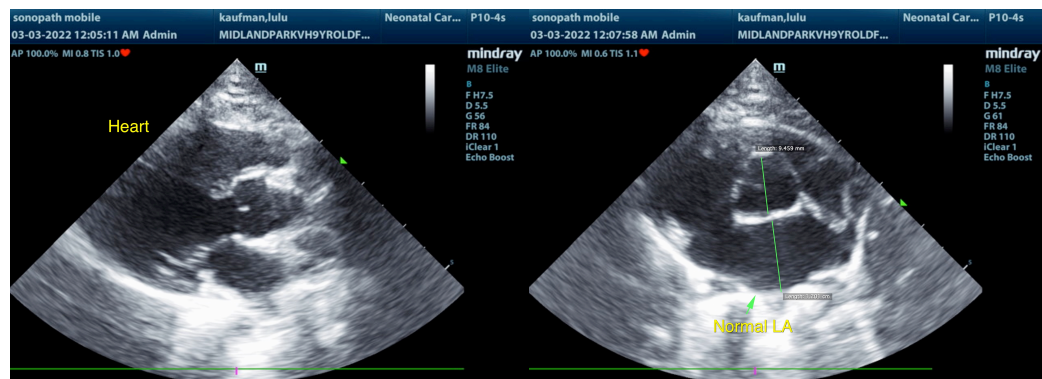
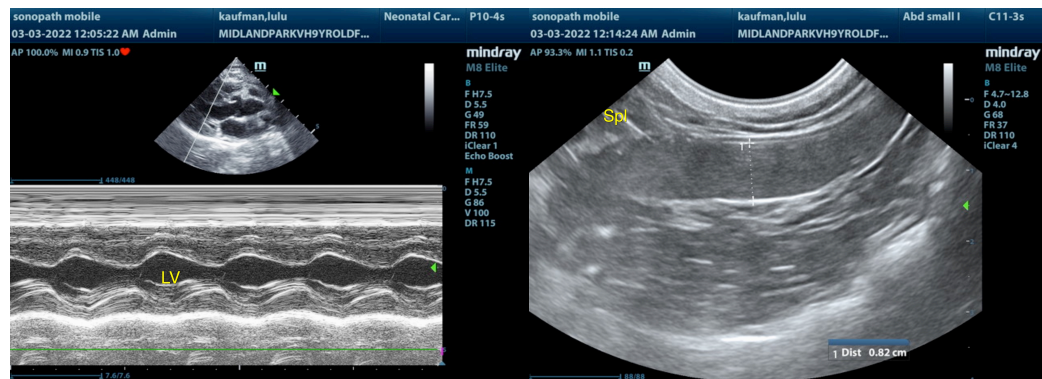
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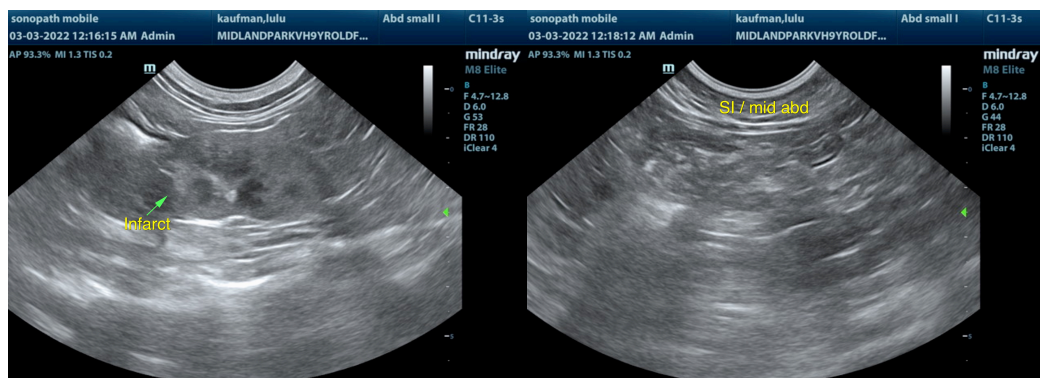
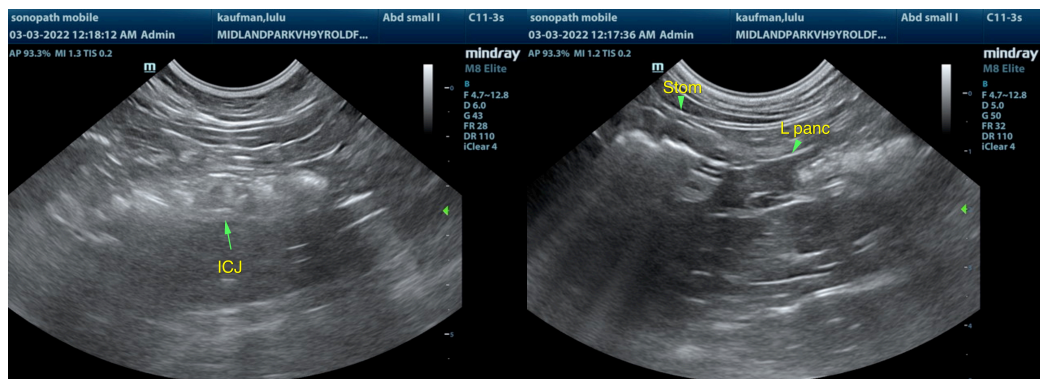
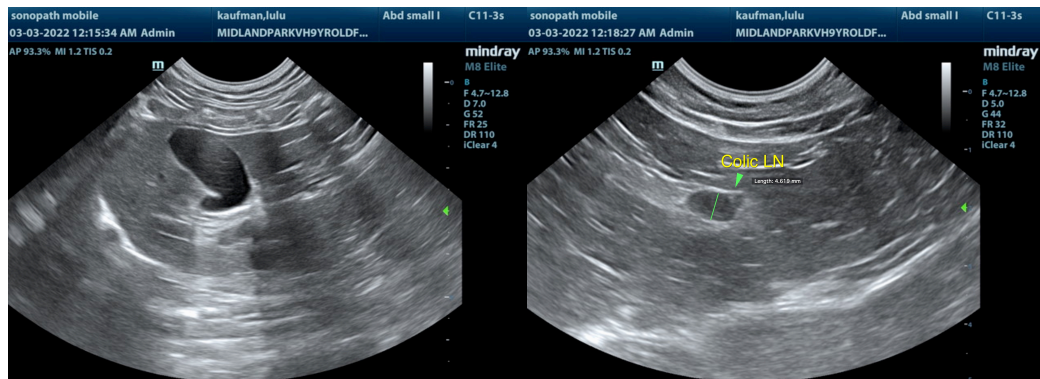
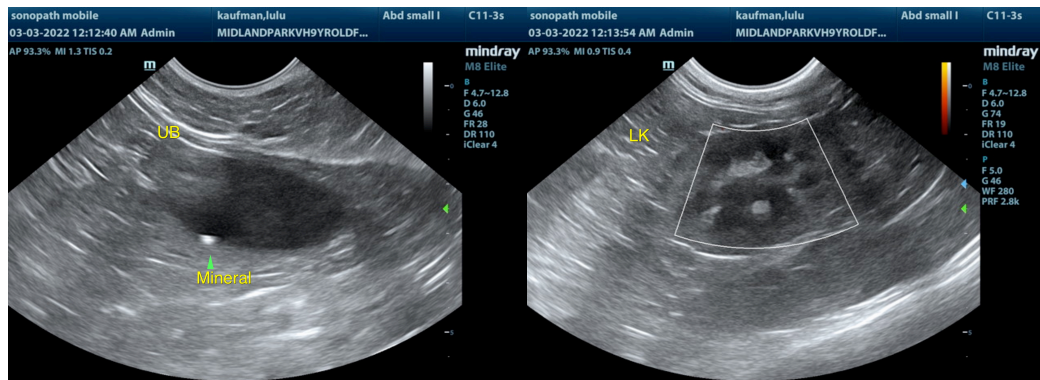
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The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

SPECIES

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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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