



PATIENT

Snickers Russell

SPECIES

Feline

BREED

DSH

SEX

Neutered Male

AGE

9 Years

WEIGHT

8 Pounds

PRESENTING CLINICAL SIGNS

Enlarged liver, icteric, anorexic, hypoglycemic-resolved, previously diabetic, mass cranial thorax. Current meds Unasyn, baytril, denamarin, ursodiol, Andansetron
Abnormal PE/Chem/CBC/UA Results: alb 2.2, alt 188, ggt 33, Tbili 9.7

ULTRASONOGRAPHIC EXAMINATION OF THE HEART & ABDOMEN

FELINE CARDIAC PARAMETERS	BODY WEIGHT (kg)	HR (BPM)	IVSd (cm)	LVIDd (cm)	LVWd (cm)	FS (%)	EF (%)
NORMAL PARAMETER	-----	150-240	0.3-0.6	1.0-2.1	0.25-0.6	35-67	80-100
PATIENT		NM					
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/)	
NORMAL PARAMETER	<1.5	0.88-1.79	0.7-1.7	<1.6	<1.3	40-60	
PATIENT	1.1	1.16			0.91	NM	
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							

INTERPRETED BY

Eric Lindquist, DMV

DABVP, Cert. IVUSS

IMAGING PERFORMED BY

Shari Reffi, CVT

HOSPITAL NAME

Newton Vet Hospital

REFERRING VET

Dr. Kim

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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, 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 **kidneys** revealed largely normal size and structure, corticomedullary definition and ratio (cortex 1/3 of medulla) were essentially maintained with some age-related loss of curvilinear patterns regarding the capsule and C/M junction. The cortices presented largely uniform texture with some increased



PATIENT	echogenicity expected for his age patient. Medullary structure differed distinctly from that of the cortex and no evidence of pelvic dilation was present. The left kidney measured 4.67 cm with slight pyelectasia noted. The right kidney measured 4.84 cm. Hyperechoic medullary rim sign noted in both kidneys.
Snickers Russell	
SPECIES	Adrenal Glands
Feline	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 left adrenal gland measured 0.35 cm.
BREED	Spleen
DSH	The spleen presented a smooth homogeneous parenchyma hyperechoic to liver and renal cortical parenchyma. The spleen measured 0.77 cm. 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.
SEX	Liver
Neutered Male	The liver presented generalized enlargement, swollen contour, coarse architecture and hypoechoic parenchyma. The gallbladder was slightly thickened with minor excessive debris noted.
AGE	Gastrointestinal
9 Years	The gastric wall was thickened and hypoechoic with loss of detail, measuring 0.7 cm.
WEIGHT	An epigastric lymph node presented abnormal length to width ratio with distorted, swollen, irregular contour, measuring 1.1 cm. Parenchymal detail was indiscernible. This is most consistent with lymphoproliferative disease such as lymphoma/round cell neoplasia, metastatic disease, or an aggressive inflammatory process. FNA, cytology and culture are warranted.
8 Pounds	
INTERPRETED BY	Pancreas
Eric Lindquist, DMV	The pancreas was hypoechoic with undulating contour and enhanced surrounding mesentery.
DABVP, Cert. IVUSS	Free Abdomen
IMAGING PERFORMED BY	Free fluid noted in the abdomen.
Shari Reffi, CVT	
HOSPITAL NAME	ULTRASONOGRAPHIC FINDINGS
Newton Vet Hospital	<ul style="list-style-type: none"> • Infiltrative gastric and hepatic patterns with regional inflammation • Secondary pancreatitis • Age related renal changes • Multifocal lymphadenopathy • Normal echocardiogram
REFERRING VET	INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS
Dr. Kim	Multicentric lymphoma suspected. FNA of the liver recommended and accessible lymph nodes. Coagulation panel warranted. Prognosis is poor. Mild potential for gastritis, cholangiohepatitis.
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PATIENT Potential Causes of Diabetic Dysregulation

Snickers Russell This is a suggestive checkoff list when faced with an unregulated diabetic patient:

SPECIES UTI

Feline Dietary indiscretion/intolerance

Pancreatitis

BREED Hyperthyroidism/hypothyroidism

DSH Exogenous steroids (including topical eye meds)

Cushing's

SEX Acromegaly

Neutered Male Owner compliance

AGE Insulin quality issues

9 Years Antibodies to insulin

Underlying Neoplasia

WEIGHT Diffuse liver disease

8 Pounds

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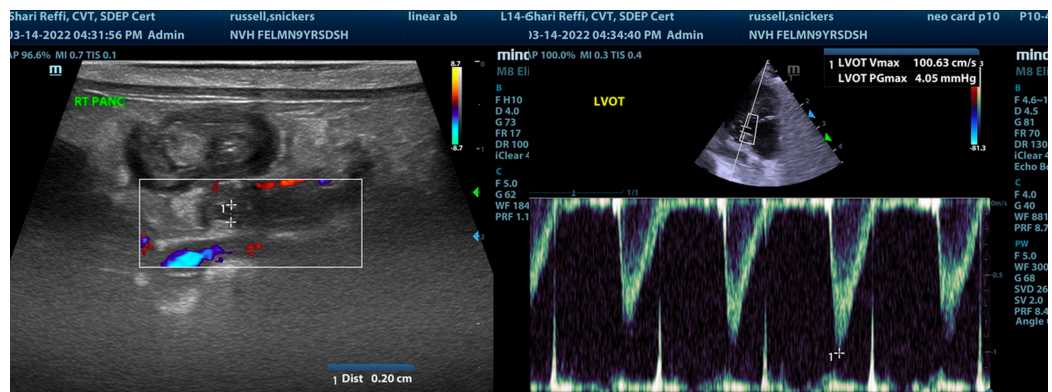
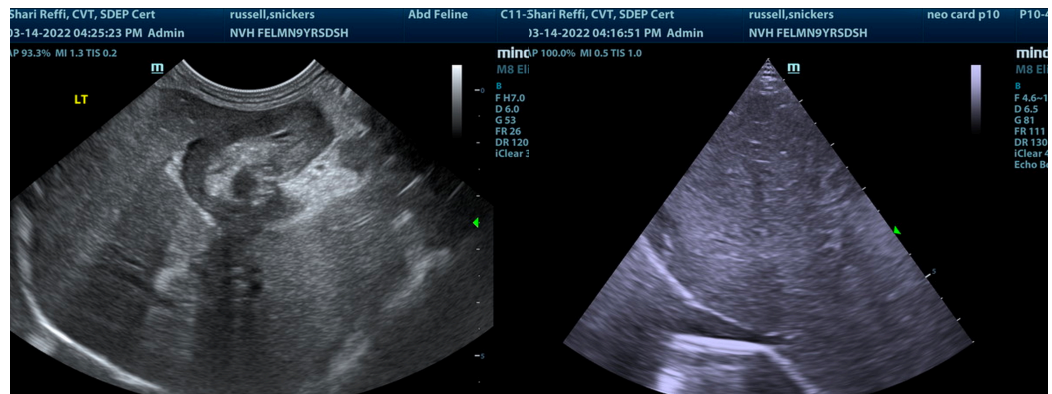
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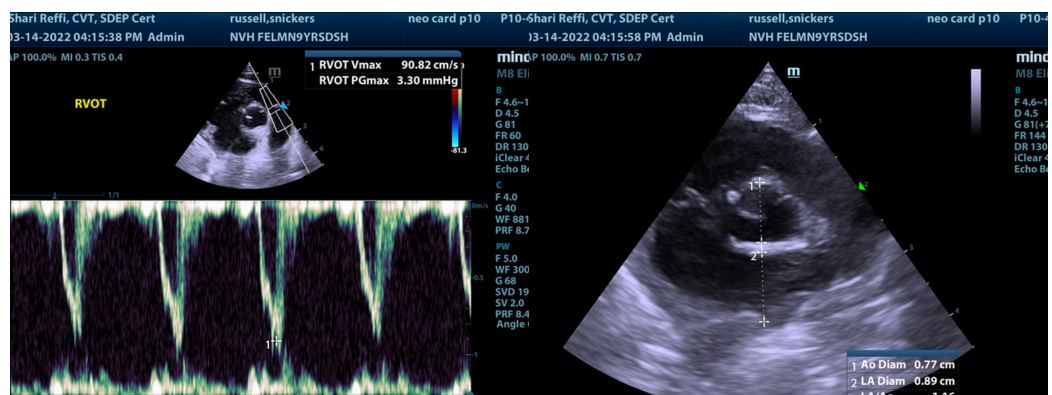
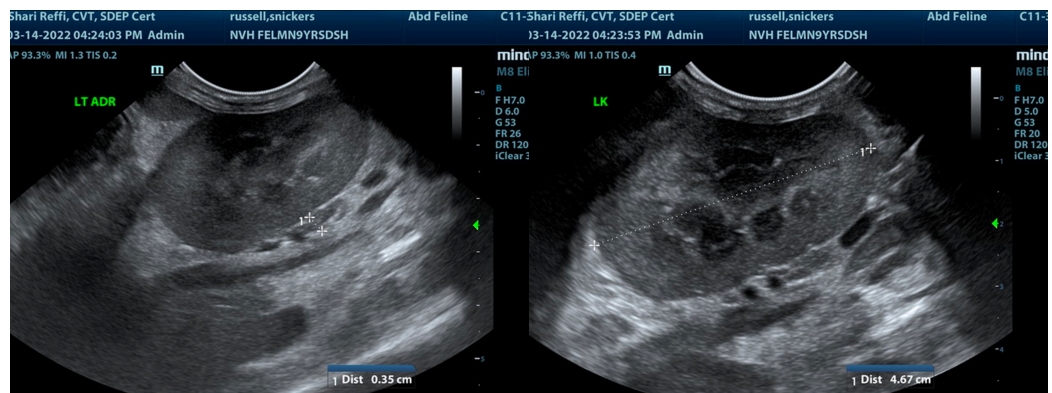
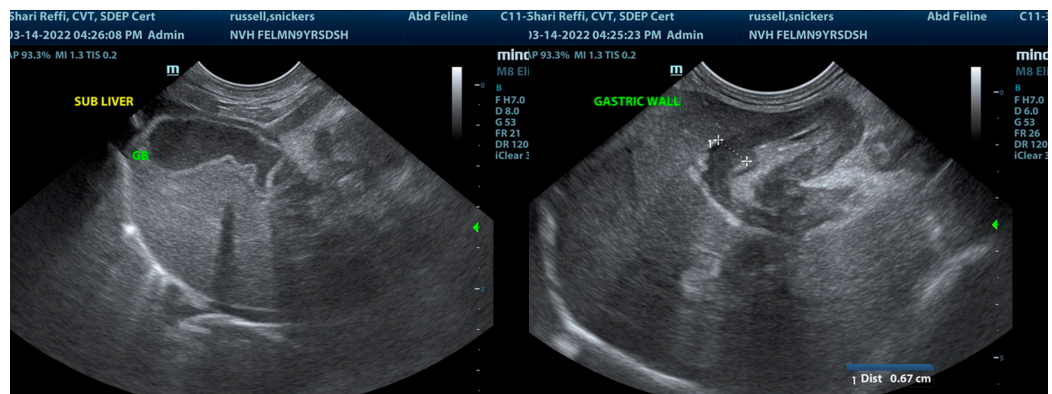
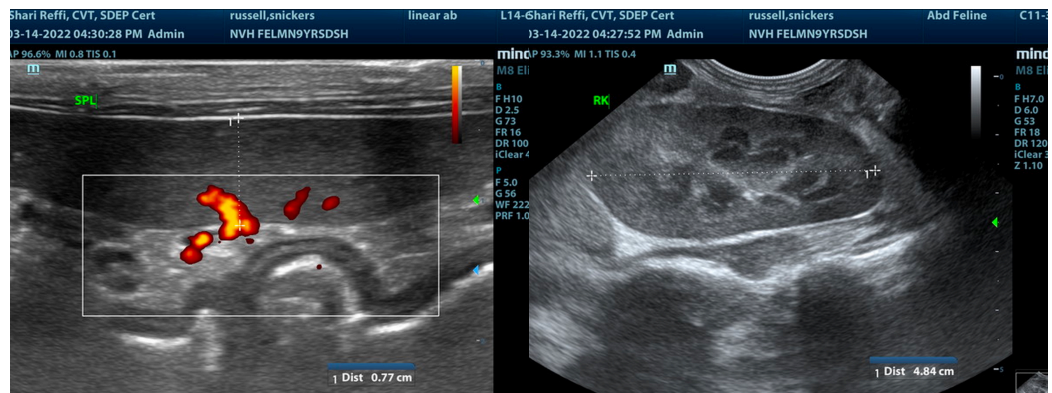
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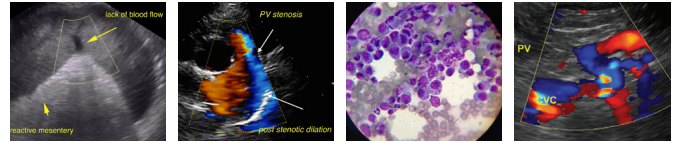
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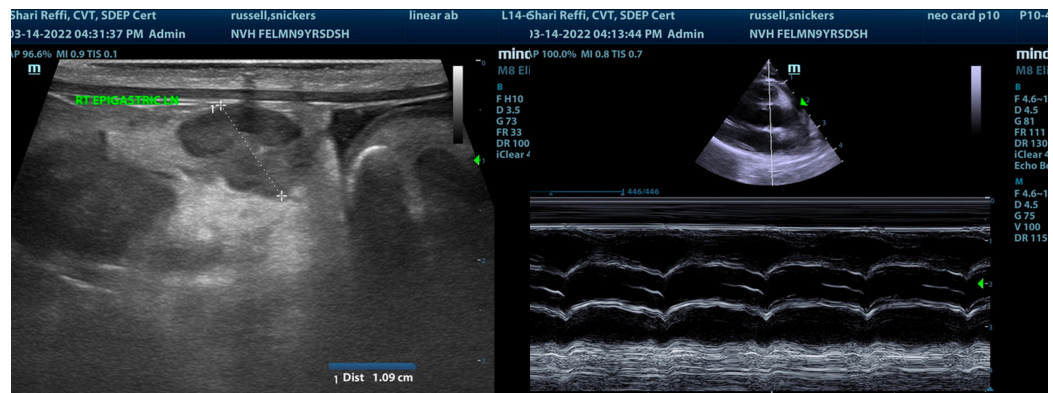
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The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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, Cert. IVUSS, CEO of SonoPath.com

info@SonoPath.com