



**PATIENT**

Razzle Rossell

**SPECIES**

Feline

**BREED**

Maine Coon

**SEX**

Neutered Male

**AGE**

9 Years

**WEIGHT**

23 Pounds

**INTERPRETED BY**

Eric Lindquist, DMV

DABVP, Cert. IVUSS

**IMAGING PERFORMED BY**

Shari Reffi, CVT

**HOSPITAL NAME**

Marsh AH

**REFERRING VET**

Dr. Milwicki

**INVOICE**

44157

**DATE**

1/12/23

**PRESENTING CLINICAL SIGNS**

Presented to emergency 3 days ago, moaning, wobbly, limping, seemed disoriented. No current meds. Abnormal PE/Chem/CBC/UA Results: wnl 1/9/23, pending today

**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	0.64	1.56	0.77	51	86
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	1.3	1.27		1.1	0.5	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							

**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.

Mild aortic angle deviation noted, this is an age related change, not clinically significant.

**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 pelvic urethra was imaged 2.0 cm beyond the cystourethral junction.

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



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the capsule and C/M junction. The cortices presented largely uniform texture with some increased echogenicity expected for his age patient. Medullary structure differed distinctly from that of the cortex and no evidence of pelvic dilation was present. Slight hyperechoic medullary rim sign and minor areas of mineralization noted in both kidneys. The right kidney measured 3.83 cm. Blood flow to the kidneys appeared to be adequate on power doppler assessment.

**Adrenal Glands**

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 0.32 cm.

**Spleen**

The **spleen** was mildly enlarged with scalloping contour. The spleen measured 1.0 cm in width.

**Liver**

The **liver** was diffusely hyperechoic to falciform fat. Parenchyma was uniform. The gallbladder and common bile duct were unremarkable.

**Gastrointestinal**

The **stomach** was filled with progressively shadowing material, consistent with hairball density, measuring up to 6.0 cm. Transit of chyme into the small intestine appeared to be occurring.

**Pancreas**

The base and limbs of the **pancreas** were observed to be largely isoechoic to surrounding omental fat. Some parenchymal remodeling, however, with mild deviation from curvilinear normalcy was observed. Pancreatic duct and capsular irregularities were present consistent with age related changes. If pain upon imaging (+ Murphy sign) was present or if the patient is focally painful in subxyphoid palpation then low-grade smoldering chronic pancreatitis should be suspected.

**Free Abdomen**

A mesenteric lymph node revealed minor cystic change, measuring approximately 1.0 cm.

**ULTRASONOGRAPHIC FINDINGS**

- Normal echocardiogram with largely geriatric changes, normal volume and function
- Large hairball density in the stomach
- Minor splenic enlargement
- Cystic mesenteric lymph node
- Age related renal changes with minor pinpoint mineralizations and idiopathic medullary rim sign

**INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS**

The cause of the clinical signs is not evident. However, I do recommend hairball therapy to eliminate the gastric material (presuming it's hairball). Full CNS examination indicated as well as blood pressure measurements and EKG. I cannot rule out a paroxysmal arrhythmia as potential case, or CNS episode. If CNS signs are present, then brain CT would be indicated. If any weight loss is present, FNA of the spleen indicated. Differentials include relative spleen, splenitis, mild potential for emerging round cell neoplasia.

**Radiographs: Chronic bronchial changes, excessive GI gas, full stomach.**



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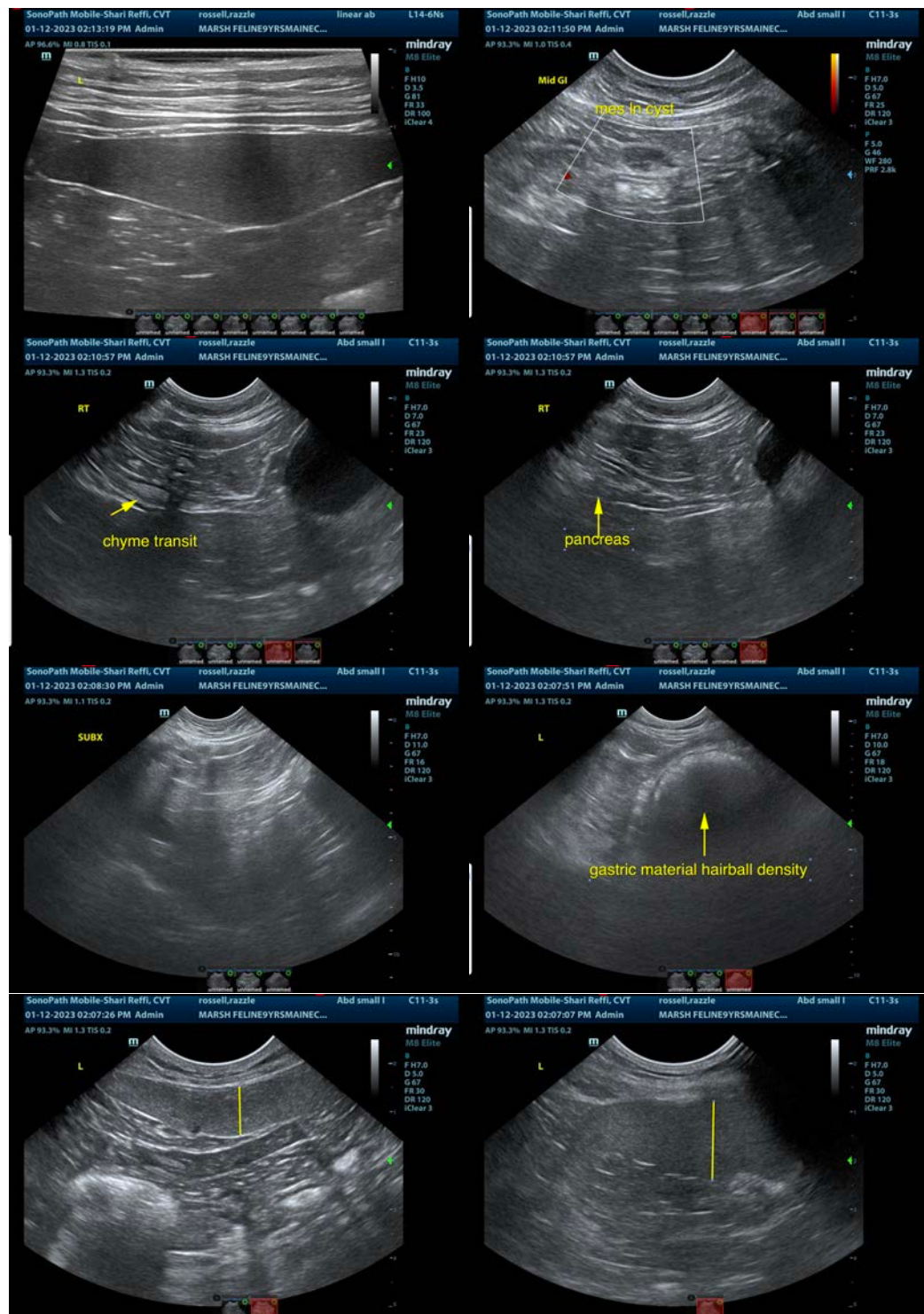
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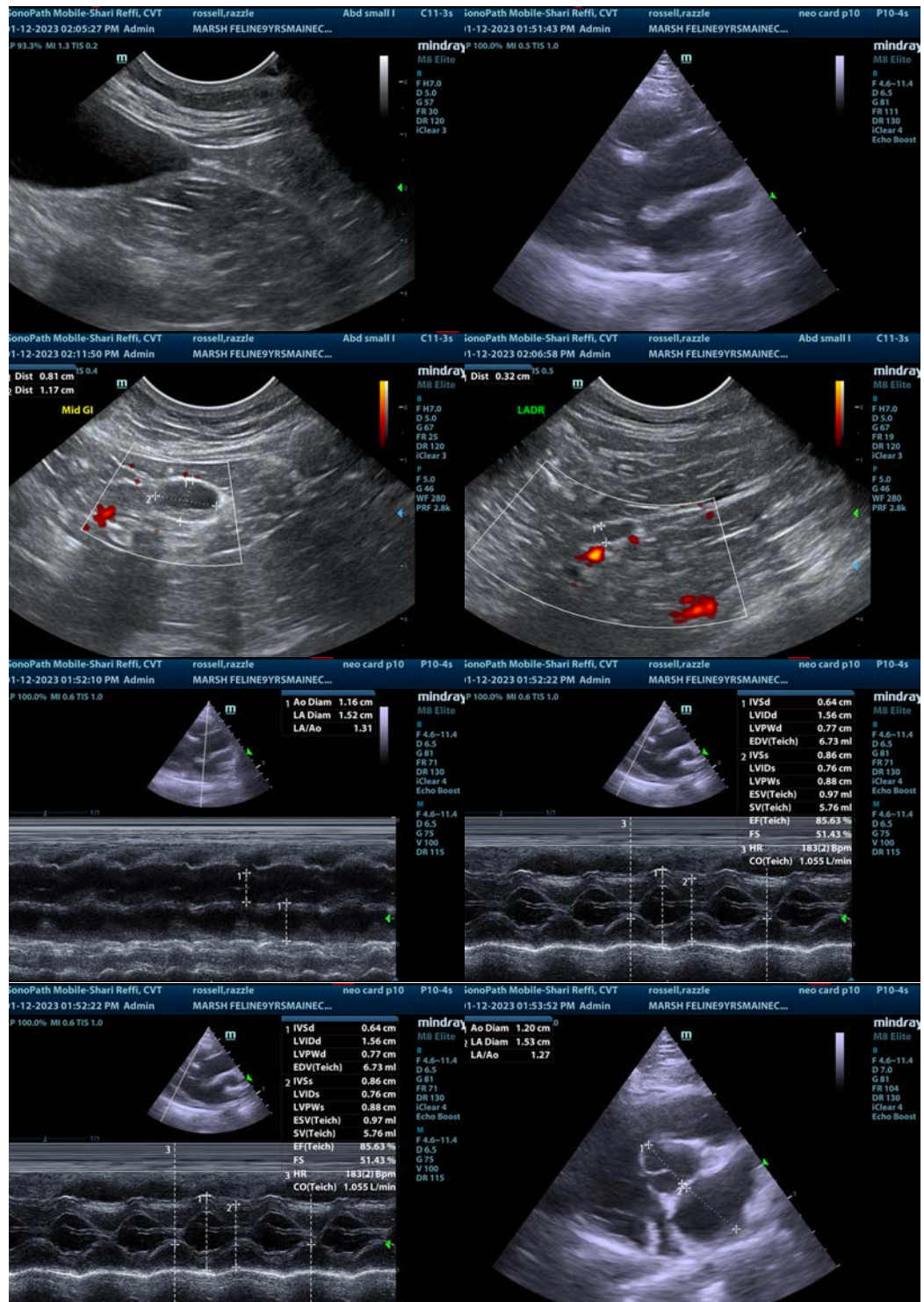
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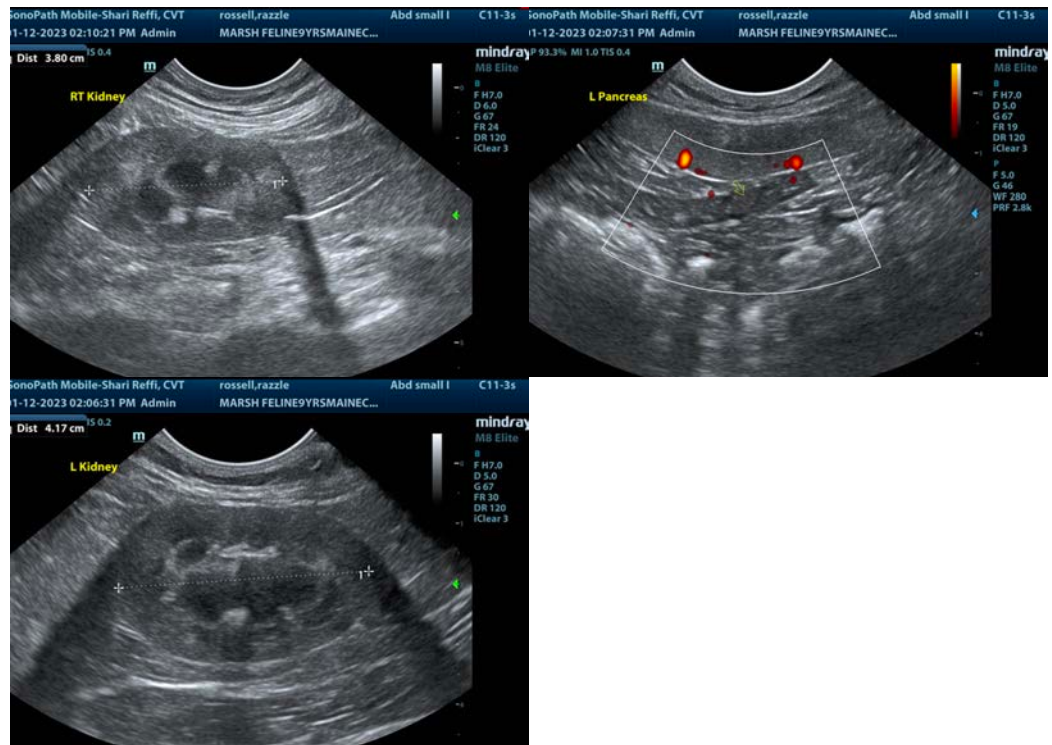
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The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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**

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