



## PATIENT

Jojo Quis

## SPECIES

Feline

## BREED

DSH

## SEX

MN

## AGE

17yr

## WEIGHT

13lb

## PRESENTING CLINICAL SIGNS

Weight loss History of PU surgery heart murmur grade 3/6. Dental disease vomiting on and off Mild anorexia

Abnormal PE/Chem/CBC/UA Results: PE-heart murmur grade 3/6, predental disease, NS OU. BW-mild elevated BUn/creatinine. Total T4-normal UA sp. gravity 1.014, bacteriuria VHS-7.81

## ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN AND HEART

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	0.45	1.55	0.5	55	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		1.25	1.3		0.88		
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

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(Canine and Feline)

## IMAGING PERFORMED BY

Dr.Sharkaway

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## Cardiac Presentation

The echocardiogram in this patient demonstrated enlarged left atrial size based on 2 separate LA measurements. The cranial and caudal mitral valve leaflets presented normal linear structure and kinetics. No obvious MR on Doppler. The left ventricular septum and free wall revealed normal thicknesses, reduced contractility and mildly reduced left ventricular volume with subjective reduced diastolic filling. Some echogenic remodeling of the septum and free wall was present. This is most consistent with some level of myocardial fibrosis. The left ventricular outflow tract demonstrated normal laminar flow and subjective structural integrity. Mild aortic insufficiency present on Doppler. The right atrium and auricle revealed increased size and normal content. No evidence of masses was noted or chamber overload. Tricuspid valvular assessment demonstrated adequate linear morphology and kinetics. No TR on Doppler. 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). Normal measured RVOT velocity. 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 cm exhibited normal thickness and tone. Anechoic urine was present in the lumen with minor particulate



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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 renal size with asymmetrical margination was present in both kidneys. The renal cortex presented uniformly increased in echogenicity with uniform echotexture. The renal cortex appeared to be hypertrophied resulting in an altered cortex: medulla ratio. Mild loss of corticomedullary distinction was also present. The renal medullary volume was subjectively reduced. The left kidney measured 3.7 cm in length. The right kidney measured 3.4 cm in length.

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The area of the aortic trifurcation was free of pathology.

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**Adrenal Glands**

The left adrenal gland was overtly normal in size, position and shape. The left adrenal gland measured 0.3 cm width. The right adrenal gland was not definitively visualized.

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**Spleen**

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. The spleen measured 0.9 cm in width at the level of the hilus.

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**Liver/Gallbladder**

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. Normal vascular volume. 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.

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**Gastrointestinal**

The stomach presented intact wall layering with a normal wall layer ratio. The lumen of the stomach contained mild variably echogenic non-shadowing ingesta sonographically consistent with food with no signs of ileus, obstruction or foreign material.

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The small intestine presented intact wall layering with segmental to generalized mildly prominent muscularis layer. No evidence of loss of intestinal wall layering or intestinal masses. The lumen of the small intestine contained generalized similar appearing ingesta with no signs of ileus, obstruction or foreign material.

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

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**Pancreas**

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 was evident.

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**Free Abdomen**

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**ULTRASONOGRAPHIC FINDINGS**

- Normal echocardiogram with mild LV myocardial remodeling.
- Mild aortic insufficiency.
- Bilateral chronic renal changes.
- GI ingesta, sonographically consistent with food.
- Subjective mildly prominent intestinal muscularis layer without overt intestinal wall thickening.
- Mild urinary bladder sediment.

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**INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS**

A definitive cause of the patient's murmur was not evident without evidence of structural or functional cardiomyopathy. Audibility of the aortic insufficiency is questionable. Assessment of systemic BP for evidence of hypertension given aortic insufficiency is suggested. If no volume changes such as dehydration or anemia are present, a benign physiologic flow murmur or small flow abnormality is suspected. Regardless, the lack of left or right heart chamber enlargement indicate that the hemodynamic effects of the murmur are low with little risk for complication. No indication for cardiac medications.

Continued conservative monitoring of the murmur is recommended. Recheck echocardiogram recommended in 6 months, sooner if murmur intensity increases or clinical signs suggestive of heart disease arise.

The small intestine exhibited subtle to mild mural changes which may suggest low grade enteropathy. A GI panel to include PLI/TLI/Cobalamin/Folate is recommended. No overt evidence of abdominal or cardiac neoplastic criteria.

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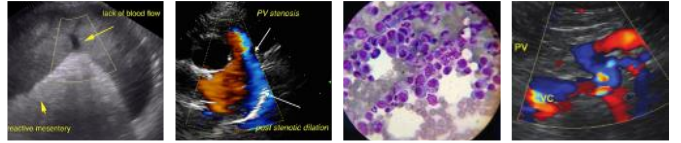
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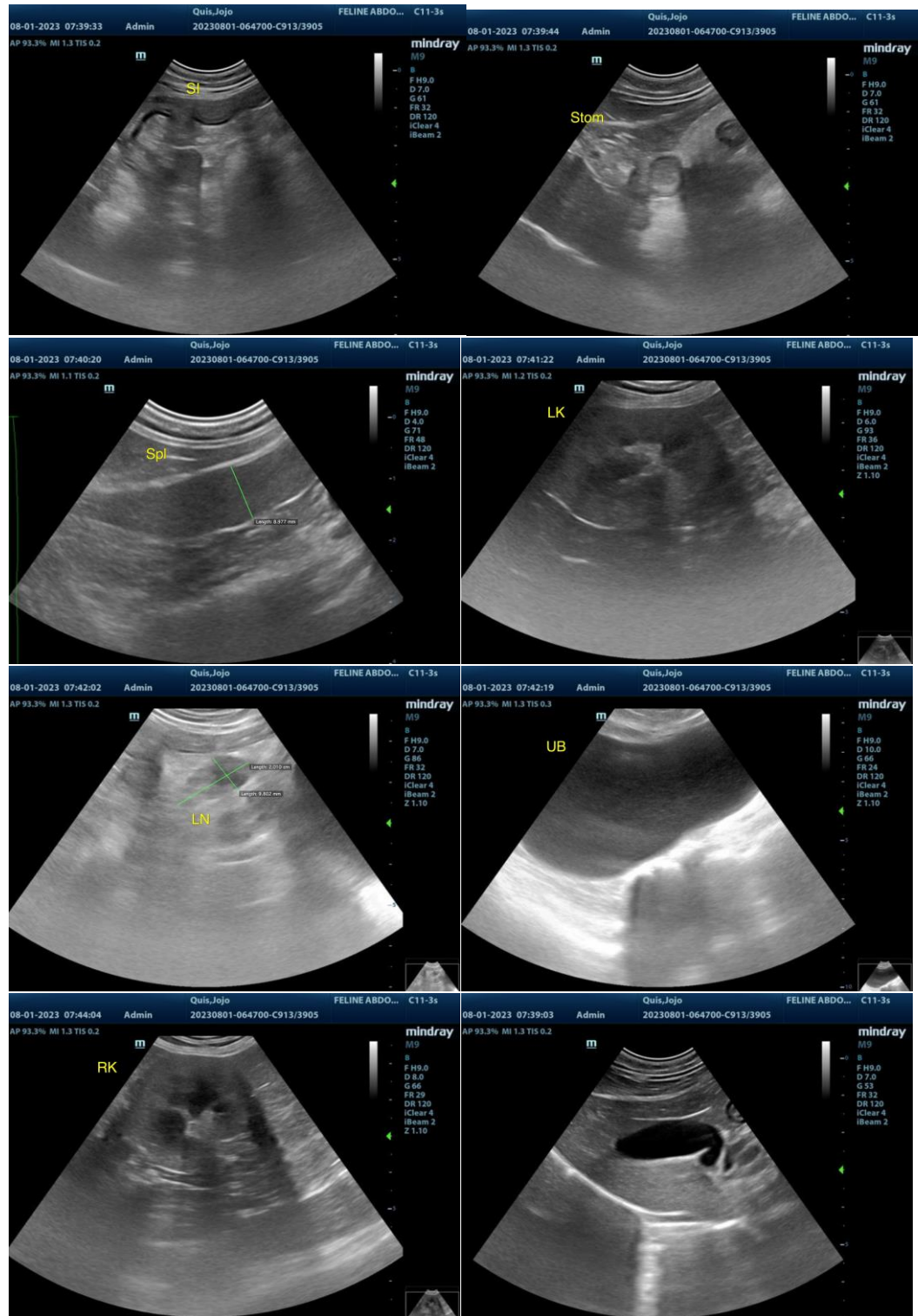
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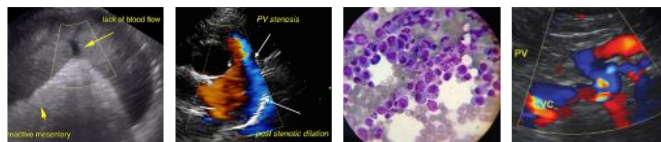
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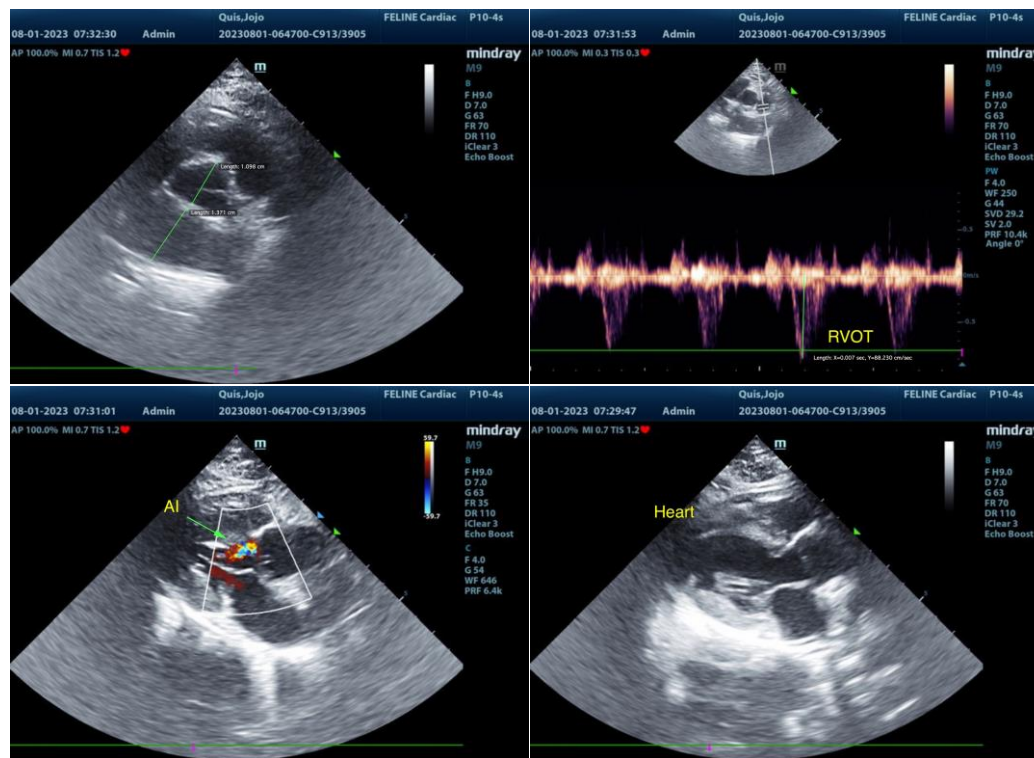
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The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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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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