



**PATIENT**

Cody Huang

**SPECIES**

Canine

**BREED**

Shih Tzu

**SEX**

MN

**AGE**

12

**WEIGHT**

15

**PRESENTING CLINICAL SIGNS**

Splenectomy

Abnormal PE/Chem/CBC/UA Results: Heart murmur 2-3/6

**ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN AND HEART**

CANINE CARDIAC PARAMETERS	MR VMAX (m/s)	TR VMAX (m/s)	LA/AO M-mode	LA/AO (Heart Base; Swe)	FS (%)	EF (%)	EPSS (cm)
NORMAL PARAMETER	4.5-5.5	<2.7	1.3	Up to 1.6	28-40	40-100	<0.6
PATIENT	--	--	--	1.3	40	74	0.1
CANINE CARDIAC PARAMETERS	HR (BPM)	AV VMAX (m/s)	PV MAX (m/s)	BODY WEIGHT	LAD LA MAX 4 Chamber	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				
PATIENT	NM	NM	2.5	15	2.8	2.6	--

**Cardiac Presentation**

**INTERPRETED BY**

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

**IMAGING PERFORMED BY**

Dr Sharkawy

**HOSPITAL NAME**

Union Vet Animal Hospital

**REFERRING VET**

Dr Lara

**INVOICE**

24323

**DATE**

03/27/2026

The echocardiogram in this patient demonstrated normal left atrial size based on 2 different LA measurement methods. Chamber volumes and echogenicity were normal. The cranial and caudal mitral valve leaflets presented vegetative thickening consistent with endocardiosis. 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 adequate and in normal range for this patient evidenced by the fractional shortening measurement and 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 or chamber overload. Tricuspid valvular assessment demonstrated mild thickening without significant 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). Increased measured RVOT velocity. No visible pericardial or free pleura fluid was noted. No echographically detectable evidence of infiltrative disease was visible. The cranial mediastinum and pericardial regions were free of masses in the visible window.

**Urinary System**



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The urinary bladder, trigone, cystourethral junction, and visible pelvic urethra exhibited normal tone. Potential for two adjacent small calculi were present in the dependent lumen. An example of a calculi measured 0.5 cm in diameter. The bladder was otherwise normal.

## SPECIES

Canine

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. Bilateral medullary mineral to small renoliths were present. The left kidney measured 4.0 cm in length. The right kidney measured 3.7 cm in length.

## BREED

Shih Tzu

The area of the aortic trifurcation was free of pathology.

### *Adrenal Glands*

## SEX

The left and right adrenal glands were not definitively visualized. No obvious pathology was present in the area of the bilateral adrenal glands.

## MN

### *Spleen*

## AGE

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The spleen was not visualized. No evidence of pathology in the area of the previous spleen.

### *Liver/Gallbladder*

## WEIGHT

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The liver presented mildly 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 mild non-organized debris. The cystic and common bile ducts were normal.

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(Canine and Feline)

### *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 mechanical/metabolic ileus, obstruction or foreign material.

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

## IMAGING PERFORMED BY

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### *Pancreas*

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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.

## REFERRING VET

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### *Free Abdomen*

No omental masses, overt lymphadenopathy or peritoneal effusion was present.

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## ULTRASONOGRAPHIC FINDINGS

### *Primary*

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- Normal cardiac structure / function with mild mitral valve endocardiosis
- Mild increased measured RVOT velocity
- Small cystic calculus
- Chronic renal changes with medullary mineral/small renoliths
- Absent spleen-previous splenectomy
- Hepatomegaly-subjective benign
- Mild gallbladder debris (non-mucocele)

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## INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

Compensated mitral valve insufficiency given normal LA dimension is suspected. A contributing factor to the murmur may include mild increased measured RVOT velocity, which without evidence of structural or valvular pathology may classify as a flow murmur. Regardless of classification, the hemodynamic effects of the murmur remain low. No other indication for cardiac medication. Anesthetic risk is considered mild.

Correlation with full lab work, UA and suggested urine C/S on sterile urine sample is recommended. Hepatosupportive medications may be considered if evidence of cholestasis. No evidence of abdominal neoplastic criteria.

Suggested anesthetic protocol may include opioid or Benzodiazepine pre-med, induction with Propofol or Alfaxalone, and appropriate gas anesthesia with avoidance of alpha 2 agonists.

## INTERPRETED BY

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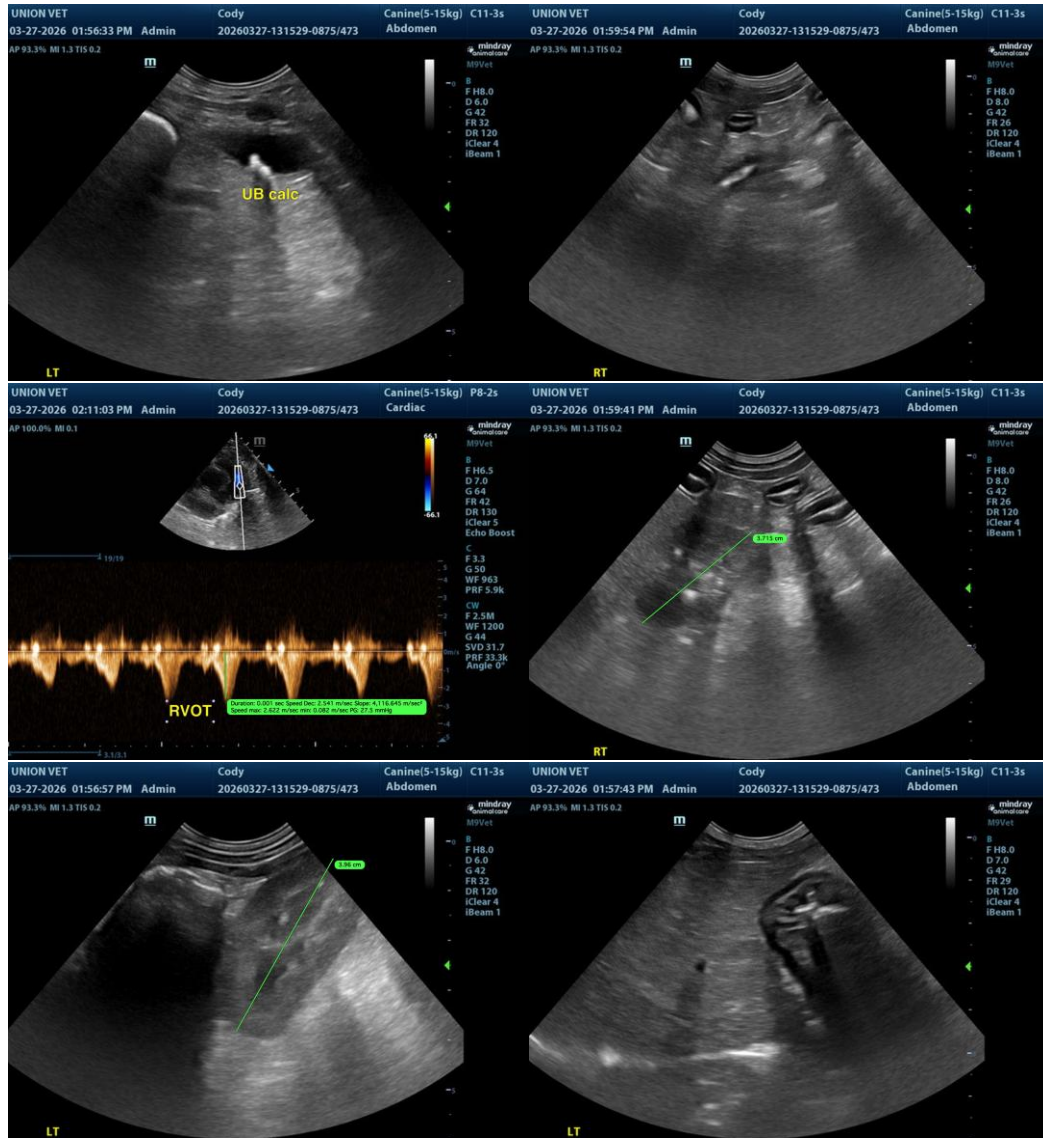
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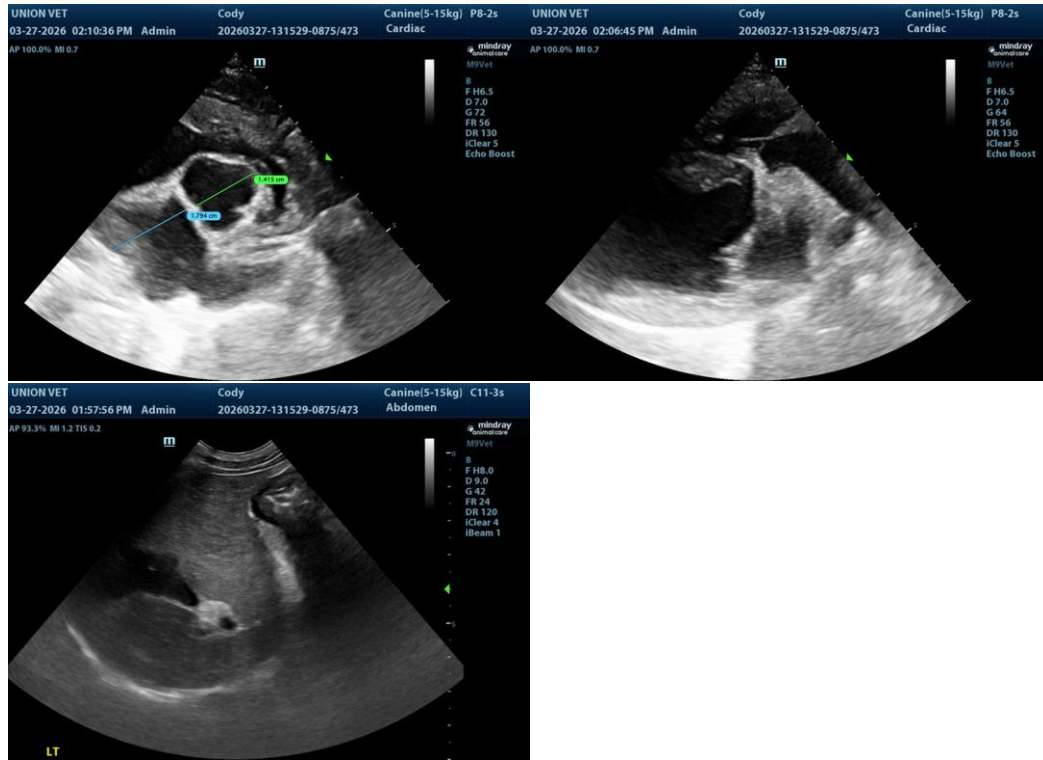
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The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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](mailto:info@sonopath.com)