



PATIENT PRESENTING CLINICAL SIGNS

Cutie Rivera

History:

- Investigate progression of heart murmur and elevated kidney values
- Grade II/VI HM auscultated

SPECIES

Canine

Abnormal PE/Chem/CBC/UA Results: From 3/28: Diag - BUN 76, Cre 2.8, CBC: HCT 31.78, RBC 4.92, CPL - Normal, From 3/30: CBC - PLT 634, HCT 30.4, HBG 11, Lym 0.82, SDMA 22

BREED

Shih Tzu

ULTRASONOGRAPHIC EXAMINATION OF THE HEART & ABDOMEN

SEX

FS

AGE

13 y, 4 m

WEIGHT

10.77 lbs.

INTERPRETED BY

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

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	-	-	-	1.2	45	78	0.2
CANINE CARDIAC PARAMETERS	HR (BPM)	AV VMAX (m/s)	PV MAX (m/s)	BODY WEIGHT	LAD LA MAX4 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	1.2	1.1	10.77 lbs.	2.0	1.8	-

IMAGING PERFORMED BY

Vincent Ravancho, CVT

HOSPITAL NAME

Animal Paradise Hospital

REFERRING VET

Dr. Elshafie

INVOICE

10747

DATE

4/1/26

Cardiac Presentation

The echocardiogram in this patient demonstrated normal **left atrial** size and structure. The cranial and caudal **mitral** valve leaflets presented mild thickening consistent with endocardiosis without evidence of valvular prolapse. Doppler revealed mild to moderate eccentric MR. The **left ventricle** presented normal free wall and septal thicknesses with linear contour. The **myocardium** presented some echogenic remodeling consistent with expected age-related change. **Contractility** of the ventricular walls was adequate and in normal range for this breed and patient size. The **left ventricular outflow** tract demonstrated normal laminar flow with subjectively unremarkable structure. Subjective assessment of the **right atrium** and auricle revealed normal size, structure and content. No evidence of masses was noted. **Tricuspid** valvular assessment demonstrated expected findings for this age patient. The **right ventricle** was of normal size (1/3 diameter of LV), echogenicity and thickness. **Pulmonic** tract assessment revealed normal valve structure, laminar flow, and diameter (approx.1:1 pa/ao ratio). Minor pulmonic valve insufficiency was noted on Doppler. No visible **pericardial** or free pleural fluid was noted. The **mediastinum** was free of masses in the visible window.



PATIENT

Urinary System

Cutie Rivera

The urinary bladder, trigone, and cystourethral junction 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.

SPECIES

Canine

The area of the iliac trifurcation was free of pathology.

BREED

Shih Tzu

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. Loss of corticomedullary border demarcation was also present. Pinpoint to focal areas of medullary mineral and intermittent cortical cysts were noted. The left kidney measured 3.6 cm in length. The right kidney measured 3.5 cm in length.

SEX

FS

Adrenal Glands

AGE

13 y, 4 m

The left and right adrenal glands were mildly enlarged in size. Mild parenchyma heterogeneity and mild capsule asymmetry were present without suspicion for overt neoplasia. The left adrenal gland measured 0.66 cm width in the caudal pole. The right adrenal gland measured 1.9 cm length x 0.78 cm width in the caudal pole.

WEIGHT

10.77 lbs.

Spleen

INTERPRETED BY

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

The spleen exhibited primarily finely textured and homogenous parenchyma which was hyperechoic to the liver and renal cortical parenchyma. Intermittent, well-defined, symmetrical, hyperechoic nodules were present, with an example measuring 0.62 cm in diameter. 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 or neoplastic changes were not noted. The echogenic nodules tend to trend benign and are most consistent with benign hyperplasia or myelolipomas.

IMAGING PERFORMED BY

Liver/ Gallbladder

Vincent Ravancho, CVT

The liver was subjectively normal in size, structure, and contour. Normal hepatic vascular volume was present. 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.

HOSPITAL NAME

Animal Paradise
 Hospital

Gastrointestinal

REFERRING VET

Dr. Elshafie

The stomach presented intact wall layering with a normal wall layer ratio. The lumen of the stomach contained mild, nonshadowing ingesta, consistent with food echogenicity without signs of obstruction or foreign material.

INVOICE

10747

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.

DATE

4/1/26

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



PATIENT

Pancreas

Cutie Rivera

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 were evident.

SPECIES

Canine

Free Abdomen

BREED

Shih Tzu

No overt lymphadenopathy or peritoneal effusion was present.

SEX

FS

AGE

13 y, 4 m

ULTRASONOGRAPHIC FINDINGS

- Compensated mitral valve disease (B1) with mild myocardial remodeling
- Chronic renal changes exhibiting medullary mineral and cortical cysts
- Bilateral mild adrenomegaly – more prominent in right adrenal gland
- Hyperechoic splenic nodules – most consistent with benign myelolipomas

WEIGHT

10.77 lbs.

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

The cause of the murmur is chronic degenerative valvular changes with secondary eccentric mitral valve insufficiency. The lack of left atrial enlargement implies that the risk of complications secondary to mitral valve insufficiency is low at this time and, without current clinical signs, indicates that medical therapy is not required. Prognosis is considered variable and sonographic monitoring is recommended. Recheck echocardiogram is suggested in 6-12 months, sooner if clinical signs arise.

INTERPRETED BY

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

Anesthetic risk is considered mild: due to mild left atrial enlargement as noted on images presented, along with heart murmur.

IMAGING PERFORMED BY

Vincent Ravancho, CVT

1. However, judicious fluid administration is advised with careful RR/RE monitoring to screen for fluid overload.

HOSPITAL NAME

Animal Paradise
 Hospital

Monitoring of blood pressure, SpO2, CO2, and auscultation of heart and lungs during anesthesia should be done during every procedure.

REFERRING VET

Dr. Elshafie

Correlation of azotemia with urinary workup including urinalysis +/- C/S or UPC level, if clinically indicated, for renal staging is suggested. Monitoring of systemic blood pressure, given nephropathy and primarily right adrenomegaly, is recommended. Sonographic monitoring of the right adrenal gland for evidence of progression / progressive enlargement, would be ideal with initial recheck in 4-6 weeks. CKD therapy would be appropriate.

INVOICE

10747

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.

DATE

4/1/26



PATIENT

Cutie Rivera

SPECIES

Canine

BREED

Shih Tzu

SEX

FS

AGE

13 y, 4 m

WEIGHT

10.77 lbs.

INTERPRETED BY

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

IMAGING PERFORMED BY

Vincent Ravancho, CVT

HOSPITAL NAME

Animal Paradise
 Hospital

REFERRING VET

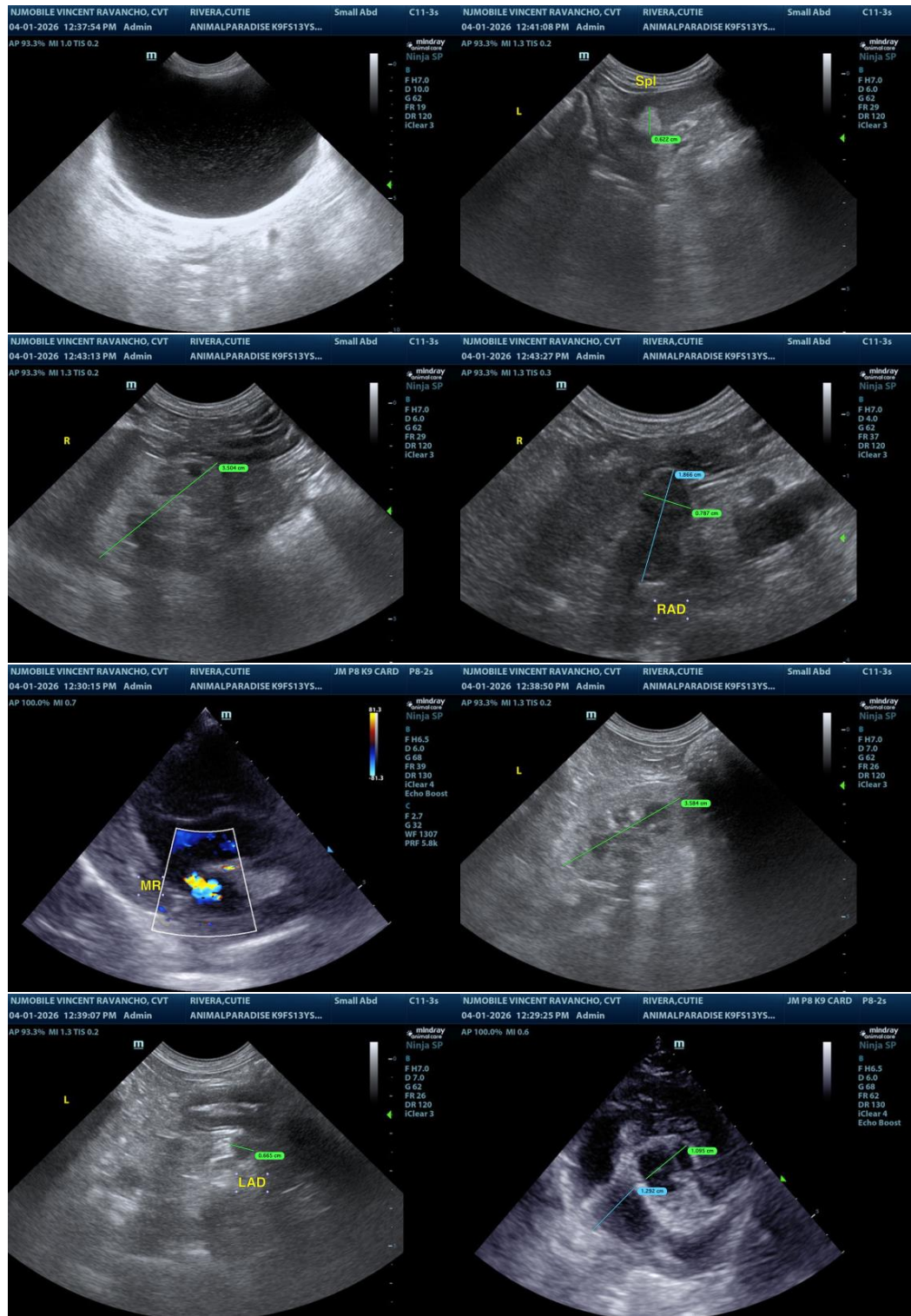
Dr. Elshafie

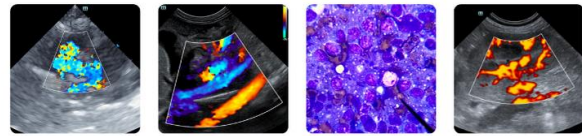
INVOICE

10747

DATE

4/1/26





PATIENT

Cutie Rivera

SPECIES

Canine

BREED

Shih Tzu

SEX

FS

AGE

13 y, 4 m

WEIGHT

10.77 lbs.

INTERPRETED BY

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

IMAGING PERFORMED BY

Vincent Ravancho, CVT

HOSPITAL NAME

Animal Paradise
 Hospital

REFERRING VET

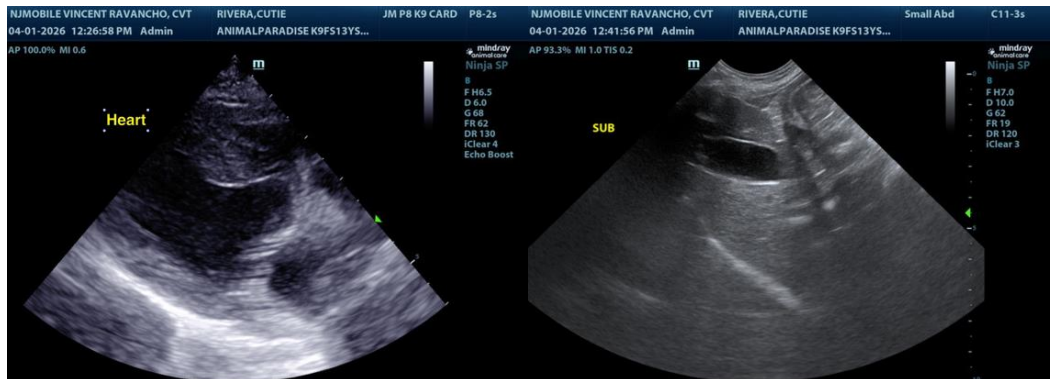
Dr. Elshafie

INVOICE

10747

DATE

4/1/26



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