

**PATIENT PRESENTING CLINICAL SIGNS**

Mia Difeo Problem list: 1. single seizure, no seizure Hx (suspect seizure, cannot rule out syncopal episode) 2. heart murmur (historic) 3. renal disease (historic) 4. reduced water intake over past month Differential diagnosis: electrolyte imbalance, toxin ingestion, primary neurological disease/tumour, heart disease (if syncopal episode), other Gabapentin, Benazepril, Vit. B12. Grade 5/6 heart murmur.  
Abnormal PE/Chem/CBC/UA Results: HCT 0.22 - microcytic, hypochronic anemia (however, low normal retics) - azotemia - hypochloremia, hypocalcemia, hyponatremia - mild hyperglycemia - mild monocytosis Bloodwork from rDVM done two DAYS ago was similar except HCT 0.32, Crea was higher. See attached.

**BREED**

Toy Poodle

**ULTRASONOGRAPHIC EXAMINATION OF THE HEART & ABDOMEN**

**SEX**

Spayed Female

**AGE**

14 Years

**WEIGHT**

2.06 kg

CANINE CARDIAC PARAMETERS	MR VMAX (m/s)	TR VMAX (m/s)	LA/AO (Boon method)	LA/AO (Heart Base; Swe)	FS (%)	EF (%)	EPSS (cm)
NORMAL PARAMETER	4.5-5.5	<2.7	1.3	<1.6	28-40	40-100	<0.6
PATIENT			1.1	1.3	47	81	0.2
CANINE CARDIAC PARAMETERS	HR (BPM)	AV VMAX (m/s)	PV MAX (m/s)	BODY WEIGHT (kg)	LA 2D short axis Base view (cm)	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	BELOW	BELOW	BELOW	BELOW
PATIENT	117	1.5			2.0	1.74	

**INTERPRETED BY**

Eric Lindquist, DMV

DABVP, Cert. IVUSS

**IMAGING PERFORMED BY**

Crystal Hill

**HOSPITAL NAME**

Hamilton Region  
Emergency Clinici

**REFERRING VET**

Dr. Rubino

**INVOICE**

40398

**DATE**

8/12/22

**Cardiac Presentation**

The echocardiogram in this patient demonstrated normal **left atrial** size based on 3 different LA measurement methods. Chamber volumes and echogenicity were normal. The cranial and caudal **mitral** valve leaflets presented vegetative thickening consistent with endocardiosis. Doppler indicated measurable insufficiency at 5.0 m/sec. The **left ventricle** presented significant concentric hypertrophy. 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. Minor **tricuspid** insufficiency noted at 1.7 m/sec. 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. No echographically detectable evidence of infiltrative disease was visible. The cranial **mediastinum and pericardial regions** were free of masses in the visible window.



**PATIENT** *Urinary System*

Mia Difeo 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.

**SPECIES**

Canine

The **kidneys** presented a moderate interstitial nephrosis pattern. The right kidney measured 3.67 cm with mild pyelectasia. The left kidney measured 3.47 cm with slight pyelectasia and slight areas of cortical mineralization.

**BREED**

Toy Poodle

*Adrenal Glands*

The region of the **left adrenal gland** revealed a hypochoic, irregular mass measuring up to 1.8 cm. It appears to be impinging upon the left kidney with regional inflammation obscuring the complete extent of the left adrenal gland.

**SEX**

Spayed Female

The **right adrenal gland** presented normal size and contour, measuring 0.80 cm at the cranial pole and 0.60 cm at the caudal pole.

**AGE**

14 Years

*Spleen*

The **spleen** in this patient was uniform, yet volume contracted. Hydration status should be assessed.

**WEIGHT**

2.06 kg

*Liver*

The **liver** images from right and left intercostal as well as subcostal views revealed subjectively normal liver contour and structure. Minor microhepatica. Some age-related parenchymal remodeling was noted but likely not clinically significant at this time. Vascular and biliary tracts were of normal volume and no evidence of congestion was noted. The **gallbladder** was mildly over distended with suspended and dependent debris, yet not to the level of emerging mucocele, yet sludge appears to be mildly excessive. No adjunctive inflammation was noted.

**INTERPRETED BY**

Eric Lindquist, DMV

DABVP, Cert. IVUSS

*Gastrointestinal*

There was some residual chyme and gas was noted in the **stomach**, yet not pathological. This is consistent with end post prandial presentation. Transit of chyme into the small intestine was normal. Curvilinear patterns were maintained throughout the GI tract. No evidence of pathology. Small and large intestine demonstrated normal luminal chyme and stool consistency respectively. No obstructive or overt infiltrative disease was noted. No associated abnormal lymphatic activity was noted.

**IMAGING PERFORMED BY**

Crystal Hill

**HOSPITAL NAME**

Hamilton Region  
Emergency Clinici

*Pancreas*

The base and limbs of the **pancreas** were observed to be largely isochoic to surrounding omental fat. Pancreatic duct and capsular contour were acceptably normal and parenchyma respected normal curvilinear patterns. No overt evidence of active inflammatory or neoplastic disease was noted.

**REFERRING VET**

Dr. Rubino

**ULTRASONOGRAPHIC FINDINGS**

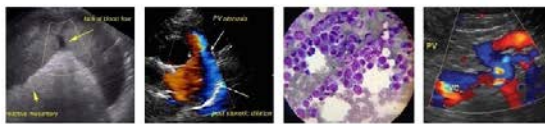
**INVOICE**

40398

- Moderate to severe concentric left ventricular hypertrophy with mitral insufficiency, no left atrial enlargement, and minor tricuspid insufficiency. Stage B1 valvular disease.
- Left adrenal mass
- Moderate chronic degenerative renal changes
- Age related hepatic changes with minor excessive gallbladder debris

**DATE**

8/12/22



**PATIENT INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS**

**Mia Difeo** I feel that the left ventricular hypertrophy is excessive for this patient. This may be owing to systemic hypertension.

**Canine** The left adrenal mass appears to be potentially resectable. However, no obvious caval invasion noted, yet some of the region was obscured by reactive mesentery. Recommend blood pressure measurements, as I am strongly concerned for systemic hypertension, given the left ventricular concentric hypertrophy that is excessive for the minor mitral insufficiency that is present. Systemic hypertension can do this. If hypertension is present, then urine catecholamine warranted. Left adrenal differentials include pheochromocytoma or adenocarcinoma. No evidence of metastatic disease. It may be resectable. CT evaluation for surgical planning would be appropriate.

**SEX**

Spayed Female

**AGE**

14 Years

**WEIGHT**

2.06 kg

**INTERPRETED BY**

Eric Lindquist, DMV  
DABVP, Cert. IVUSS

**IMAGING PERFORMED BY**

Crystal Hill

**HOSPITAL NAME**

Hamilton Region  
Emergency Clinici

**REFERRING VET**

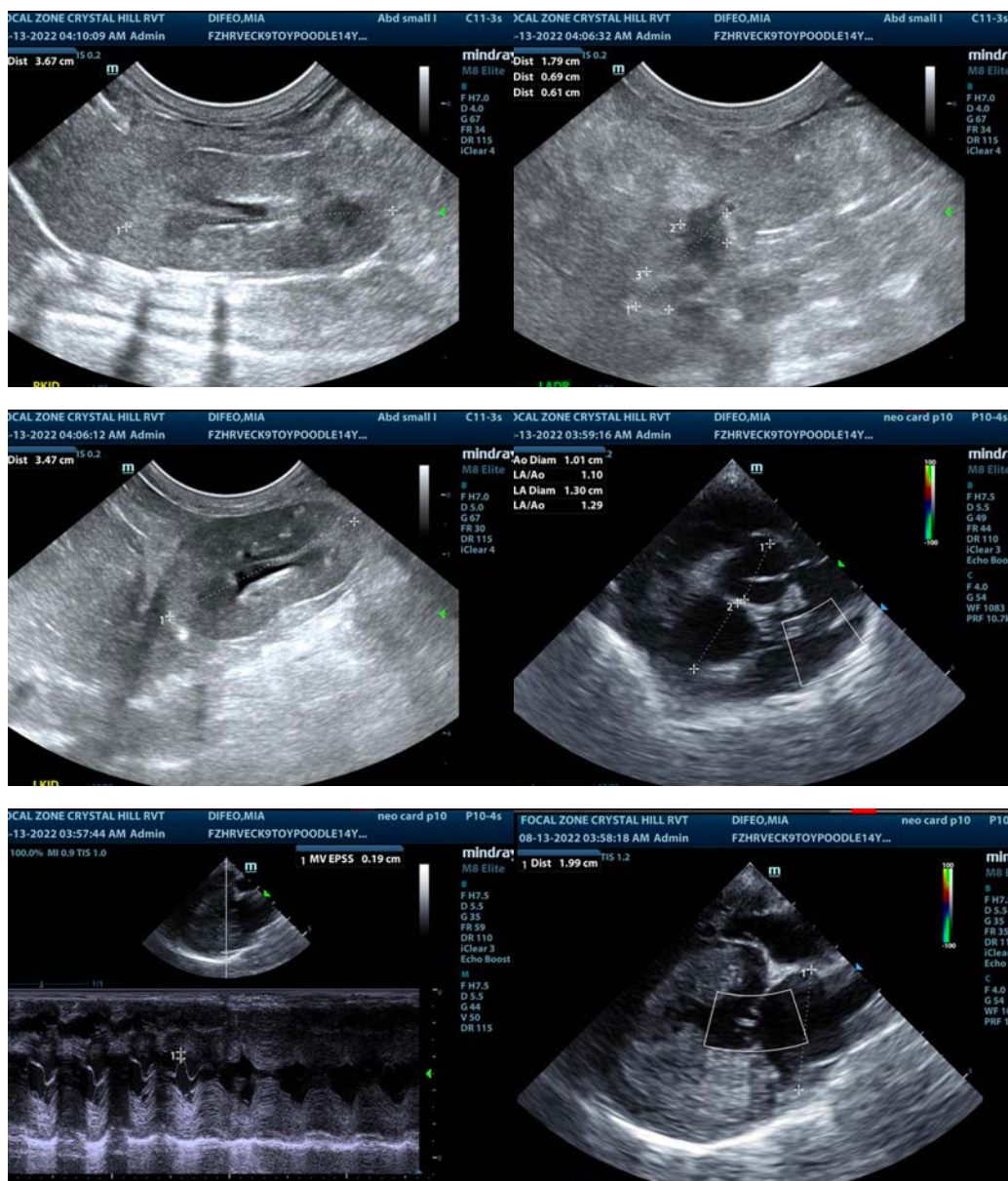
Dr. Rubino

**INVOICE**

40398

**DATE**

8/12/22





**PATIENT**

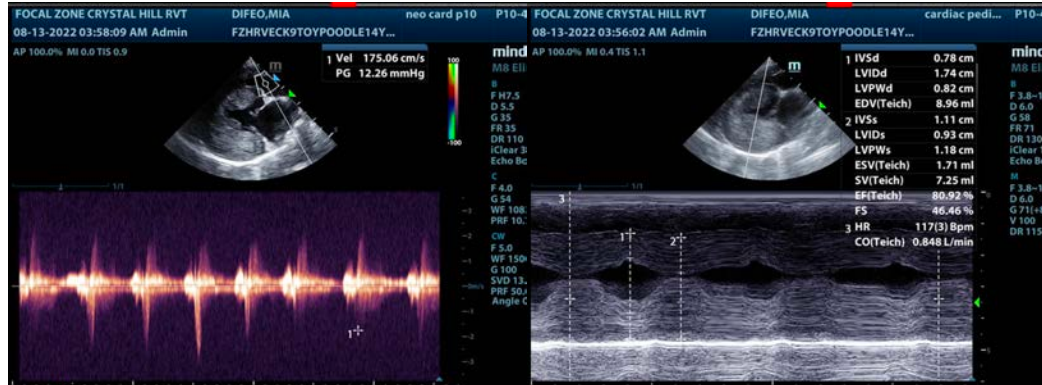
Mia Difeo

**SPECIES**

Canine

**BREED**

Toy Poodle



**SEX**

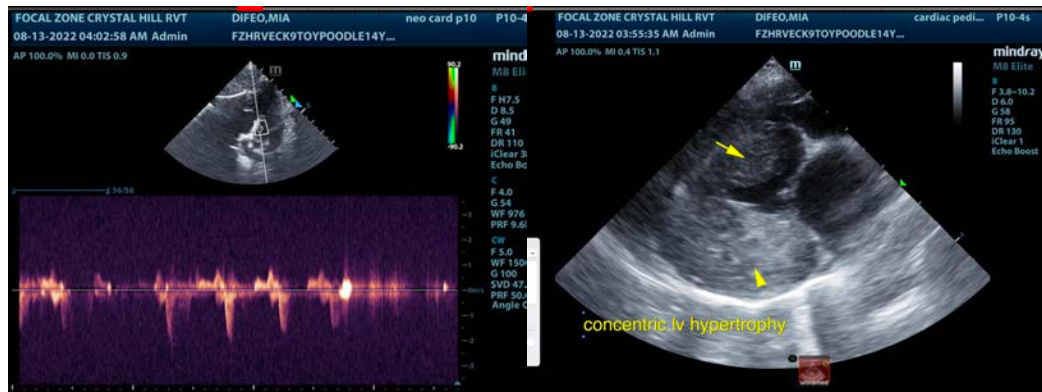
Spayed Female

**AGE**

14 Years

**WEIGHT**

2.06 kg



**INTERPRETED BY**

Eric Lindquist, DMV  
DABVP, Cert. IVUSS

**IMAGING PERFORMED BY**

Crystal Hill

**HOSPITAL NAME**

Hamilton Region  
Emergency Clinici

**REFERRING VET**

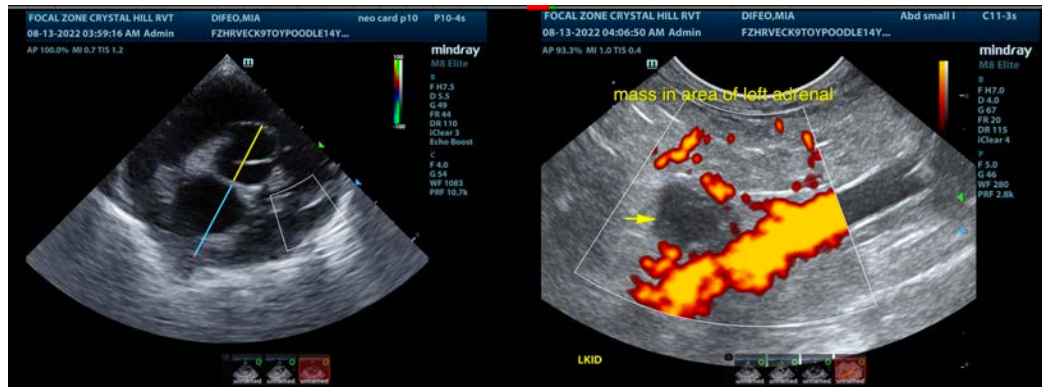
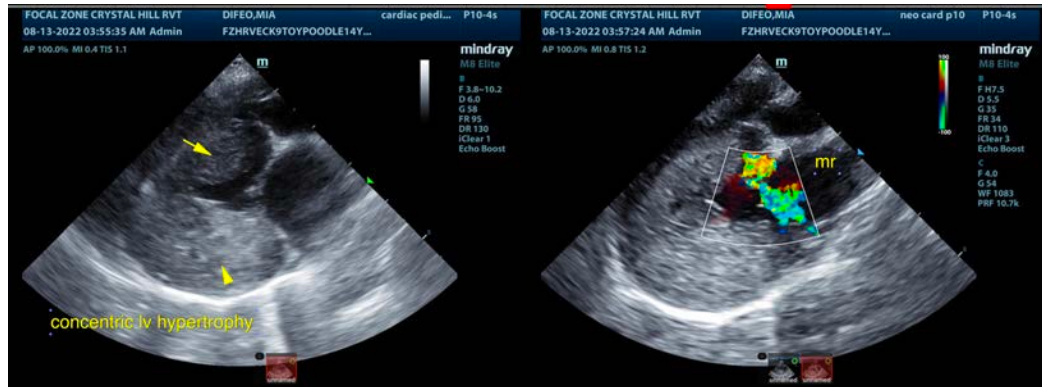
Dr. Rubino

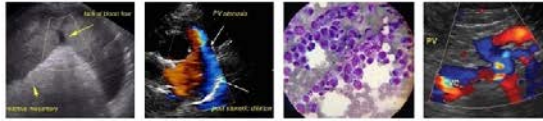
**INVOICE**

40398

**DATE**

8/12/22





**PATIENT**

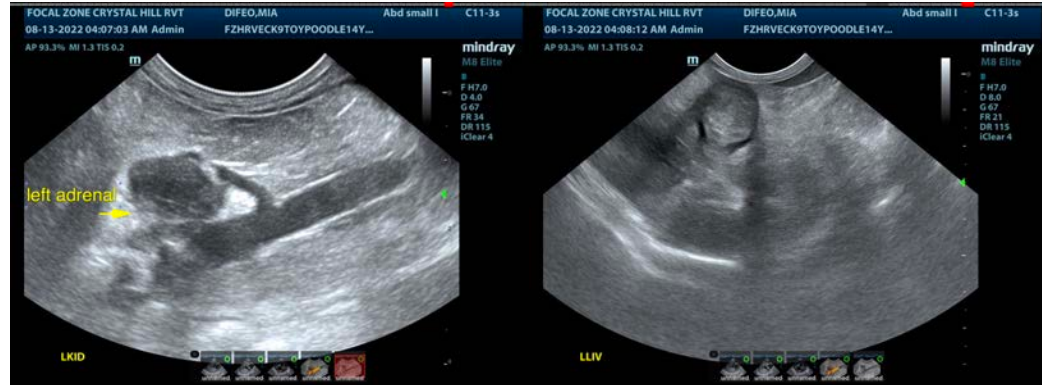
Mia Difeo

**SPECIES**

Canine

**BREED**

Toy Poodle



**SEX**

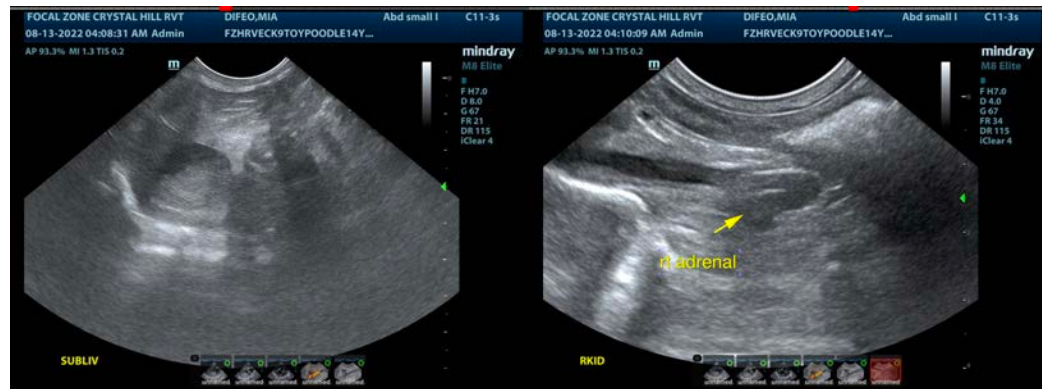
Spayed Female

**AGE**

14 Years

**WEIGHT**

2.06 kg



**INTERPRETED BY**

Eric Lindquist, DMV  
DABVP, Cert. IVUSS

**IMAGING PERFORMED BY**

Crystal Hill



**HOSPITAL NAME**

Hamilton Region  
Emergency Clinic

**REFERRING VET**

Dr. Rubino

**INVOICE**

40398

**DATE**

8/12/22

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](mailto:info@SonoPath.com)