


**PATIENT**
**PRESENTING CLINICAL SIGNS**

Shika Riano-Fernandez

vomiting bile every hour past few days, not eating or drinking, lethargic wheezing

**SPECIES**
**ULTRASONOGRAPHIC EXAMINATION OF THE HEART & ABDOMEN**

Canine

**BREED**

Poodle

**SEX**

Female

**AGE**

15 Years

**WEIGHT**

22.2 Pounds

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			NM	1.2	47.4	82.3	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				
PATIENT	NM	1.0	0.9		2.3	1.9	

**Cardiac Presentation**

The echocardiogram in this patient demonstrated normal **left atrial** size and structure. Chamber volume and blood echogenicity were normal. The cranial and caudal **mitral** valve leaflets presented minor irregular age-related changes that are not clinically significant at this time with adequate extension in systole and union in diastole. 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). No dilation due to heartworm disease, cuor pulmonale, stenosis, or pulmonic hypertension was noted. No visible **pericardial** or free pleural fluid was noted. The **mediastinum** was free of masses in the visible window.

**Urinary System**

The urinary bladder exhibited variable mild to moderate generalized mural thickening with anechoic urine. No evidence of urinary bladder mural mineralization. Urinary bladder wall measured 0.67 cm in width. The urethra was normal in structure and tone to a depth of 2.0 cm.

The area of the aortic trifurcation was free of pathology.

Normal size and margination were present in the kidneys. A normal 1:3 cortex / medulla ratio was maintained. The medulla and cortices were uniform in texture with some increased echogenicity and loss of corticomedullary symmetry and definition expected for the age of the patient. No evidence of pelvic dilation was present. The left kidney measured 5.0 cm. The right kidney measured 4.3 cm.

**INTERPRETED BY**

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

**IMAGING PERFORMED BY**

Jenn

**HOSPITAL NAME**

Rockaway AH

**REFERRING VET**

Dr. Maniar

**INVOICE**

26927

**DATE**

11/8/21



**PATIENT**

Shika Riano-Fernandez

**SPECIES**

Canine

**BREED**

Poodle

**SEX**

Female

**AGE**

15 Years

**WEIGHT**

22.2 Pounds

**INTERPRETED BY**

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

**IMAGING PERFORMED BY**

Jenn

**HOSPITAL NAME**

Rockaway AH

**REFERRING VET**

Dr. Maniar

**INVOICE**

26927

**DATE**

11/8/21

**Adrenal Glands**

The bilateral adrenal glands were largely normal in size. Mild parenchyma heterogeneity and mild capsule asymmetry was present without suspicion for overt neoplasia. The left adrenal gland exhibited caudal enlargement with maintained capsule integrity. No overt evidence of left or right adrenal mineralization. The left adrenal gland measured 0.63 cm at the cranial pole and 1.2 cm at the caudal pole. The right adrenal gland measured 0.69 cm at the caudal pole.

**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.

**Liver**

The liver presented 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 moderate, echogenic, nonmineralized biliary sludge. The cystic duct and common bile ducts were normal without evidence of dilation.

**Gastrointestinal**

The stomach presented wall thickening secondary to echogenic mucosa hypertrophy. Intact wall layering was maintained and distinct. Mild gastric distension with primarily anechoic fluid was present. No overt evidence of mechanical pyloric outflow obstruction or foreign material. Pylorus wall measured 0.68 cm.

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. Jejunum wall measured 0.31 cm.

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

**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. Low-grade or chronic pancreatitis may be present, yet ultrasonographically normal.

**Free Abdomen**

No overt lymphadenopathy or peritoneal effusion was present.

**ULTRASONOGRAPHIC FINDINGS**

- Overtly normal cardiac structure and function for age
- Gastritis/gastroenteritis pattern with gastric hypomotility
- Mild subjectively benign hepatomegaly
- Mild gallbladder debris (non-mucocele)
- Variably thickened urinary bladder
- Mild caudal left adrenomegaly



**PATIENT**

Shika Riano-Fernandez

**SPECIES**

Canine

**BREED**

Poodle

**SEX**

Female

**AGE**

15 Years

**WEIGHT**

22.2 Pounds

**INTERPRETED BY**

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

**IMAGING PERFORMED BY**

Jenn

**HOSPITAL NAME**

Rockaway AH

**REFERRING VET**

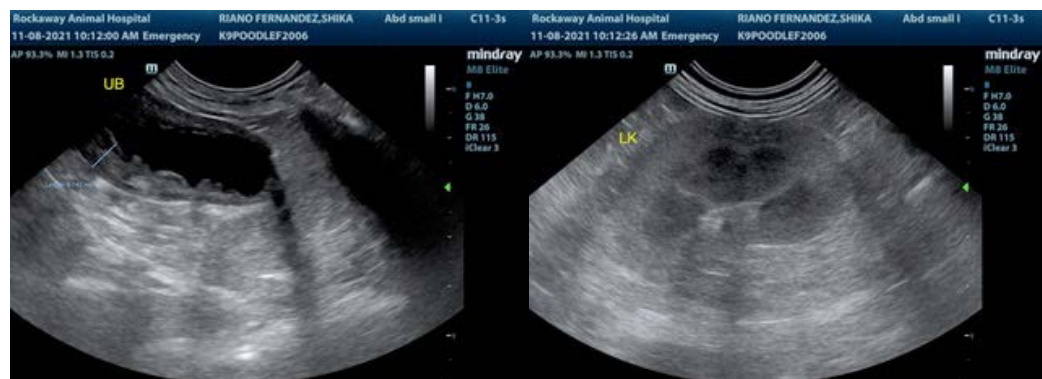
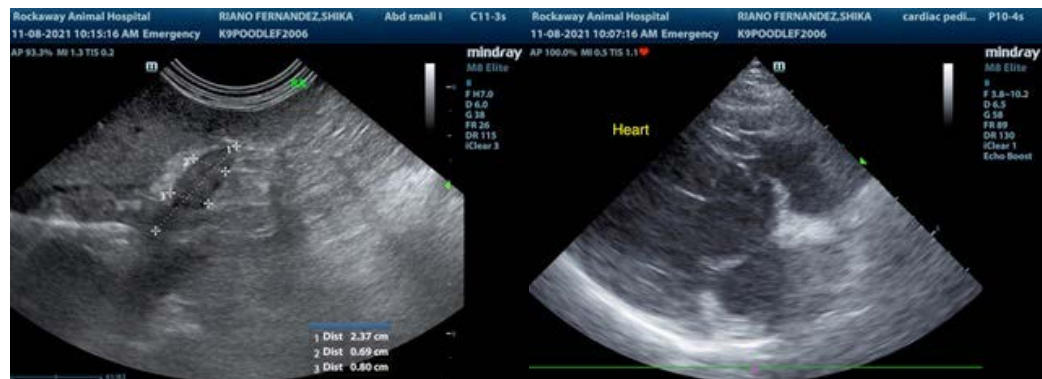
Dr. Maniar

**INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS**

Acute gastrointestinal insult/dietary indiscretion or potential structurally insignificant inflammatory bowel episode possible with metabolic gastric stasis. Gastrointestinal supportive care, which may include hospitalization with IV fluids (if evidence of dehydration or electrolyte abnormalities) recommend. The appearance of the bilateral adrenal glands may indicate age related or adenomatous change, although potential for emerging left adrenal neoplasia (i.e., pheochromocytoma or adenocarcinoma) cannot be definitively excluded. Sonographic monitoring of the adrenal glands as well as screening blood pressure recommended. Correlation with full CBC/Chem panel and urinalysis (if not already done) suggested.

The variably thickened urinary bladder may indicate age related bladder changes or cystitis, while the possibility of emerging neoplasia cannot be excluded. screening BRAF assay could be considered if evidence of stranguria.

The lack of structural or functional cardiomyopathy as well as lack of evidence of clinical pulmonary hypertension indicate that the wheezing in this patient is most likely non-cardiogenic in origin. 3-view chest radiographs recommended if not done. No indication for cardiac medications.



**INVOICE**

26927

**DATE**

11/8/21



**PATIENT**

Shika Riano-Fernandez

**SPECIES**

Canine

**BREED**

Poodle

**SEX**

Female

**AGE**

15 Years

**WEIGHT**

22.2 Pounds

**INTERPRETED BY**

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

**IMAGING PERFORMED BY**

Jenn

**HOSPITAL NAME**

Rockaway AH

**REFERRING VET**

Dr. Maniar

**INVOICE**

26927

**DATE**

11/8/21



The information and recommendations provided are based on the images presented by the referring veterinarian. 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