



PATIENT

Maggie Bevacqua

SPECIES

Canine

BREED

Eskimo Spitz Mix

SEX

FS

AGE

15 years

WEIGHT

35 lbs.

INTERPRETED BY

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

IMAGING PERFORMED BY

Diane McFadden

HOSPITAL NAME

Animal Care Centers
Of Landing

REFERRING VET

Dr. Villari

INVOICE

13142

DATE

1/25/22

PRESENTING CLINICAL SIGNS

coughing, not improving on meds. On enalapril 10 mg sid and Proin

ULTRASONOGRAPHIC EXAMINATION OF THE HEART & ABDOMEN

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		2.8	1.43	1.34	35	67	0.29
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	182	1.0	0.8		3.1	2.5	

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. Mild eccentric MR was present. 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. Mild TR was present. 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, 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 was noted.



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The area of the aortic trifurcation was free of pathology.

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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 mild loss of corticomedullary symmetry and definition expected for the age of the patient. No evidence of pelvic dilation was present. The left kidney measured 5.1 cm in length. The right kidney measured 5.3 cm in length.

Adrenal Glands

The bilateral adrenal glands were mildly enlarged in size, more prominent in the left adrenal gland. Mild parenchyma heterogeneity and mild capsule asymmetry was present without suspicion for overt neoplasia. The left adrenal gland measured 1.3 cm width in the cranial pole and 1.1 cm width in the caudal pole. An indistinct area of parenchymal expansion associated with the left adrenal gland, potentially within the area of the phrenicoabdominal vein, suggestive of possible early phrenicoabdominal vein invasion, was present. No overt evidence of mineralization associated with either the left or right adrenal gland was noted. The right adrenal gland measured 1.3 cm width in the cranial pole and 0.82 cm width in 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/ Gallbladder

The liver exhibited mild enlargement with normal structure and contour. The liver parenchyma was mildly nonuniform and hypoechoic to the spleen with a moderate coarse echotexture and subjective mild to benign parenchymal remodeling. The hepatic and portal vasculature were normal in appearance without signs of congestion. The gallbladder was non-distended in size with mild gallbladder debris. The cystic and common bile ducts were normal.

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 ileus, obstruction, or foreign material.

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

Pancreas

The pancreas was normal in size and contour with isoechoic to heterogeneous parenchyma compared to adjacent omentum. No signs of active inflammation or neoplasia.

Free Abdomen

No overt lymphadenopathy or peritoneal effusion was present.

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ULTRASONOGRAPHIC FINDINGS

Primary Findings

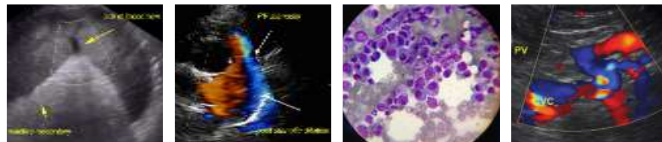
- Overtly normal cardiac structure and function for age
- Mild MR / TR
- Mild hepatomegaly with parenchymal remodeling
- Minor gallbladder debris (non-mucocele)
- Nonspecific mild chronic renal changes
- Bilateral mild adrenomegaly more prominent in the left adrenal gland with potential for early left adrenal phrenicoabdominal vein invasion

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

The hemodynamic effects of the mild MR and TR appear to be mild, while the estimated pulmonary pressure gradient based on measured TR velocity was not overtly consistent with clinical pulmonary hypertension. The lack of left or right heart chamber enlargement indicates that the risk secondary to MR and TR is relatively low. No other clinical issues such as systolic dysfunction were noted. Although the coughing in this patient may be multifactorial in origin, the overall cardiac presentation was not overtly suggestive of primary cardiogenic cough. No indication for cardiac medications was evident.

The bilateral adrenal glands may indicate adenomatous changes, benign hyperplasia, while potential emerging neoplasia, specifically in the left adrenal gland, is of concern. Emerging adenocarcinoma, pheochromocytoma, or others are possible. Screening blood pressure is recommended. Urine catecholamine levels may be considered, in light of proteinuria and elevated UPC. Screening UCCR +/- LDDST could be considered if clinical signs consistent with hyperadrenocorticism are present. Sonographic monitoring of the left adrenal gland for evidence of progression and/or Ideally Gold Standard CT would be ideal for further assessment.





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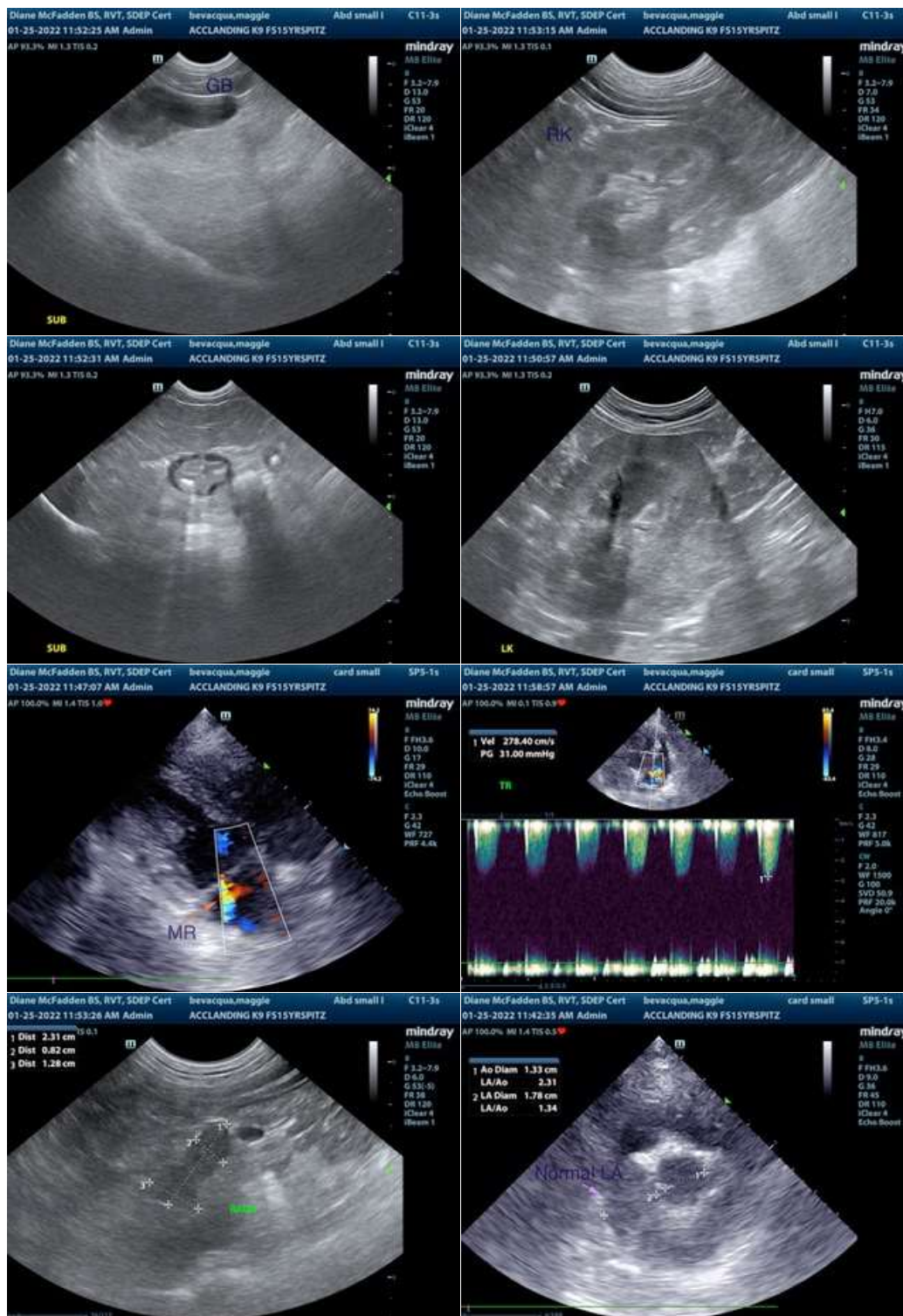
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The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.



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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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