



**PATIENT**

Bella Sauerborn

**SPECIES**

Canine

**BREED**

Morkie

**SEX**

Spayed Female

**AGE**

13 Years

**WEIGHT**

7.1 pounds

**INTERPRETED BY**

R. McKenzie Daniel,  
DVM, DABVP (Canine  
/ Feline Practice)

**IMAGING PERFORMED BY**

Kerri Becker

**HOSPITAL NAME**

Willowbrook AC

**REFERRING VET**

Dr. Bott-Wentworth

**INVOICE**

13446

**DATE**

01/29/26

**PRESENTING CLINICAL SIGNS**

- Elev. liver values, anemia, elev. UPC, Senile per Owner.

Abnormal PE/Chem/CBC/UA Results: 12/18/25 RBC-5.66 HCT-39.6 PLT-668 ALT-317 ALP-719 GGT-19 UA-ph-5.5 prot-1 USG-1.021

**ULTRASONOGRAPHIC EXAMINATION OF THE HEART & ABDOMEN**

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	--	--	NM	1.2	40	74	0.1
CANINE CARDIAC PARAMETERS	HR (BPM)	AV VMAX (m/s)	PV MAX (m/s)	BODY WEIGHT (lbs)	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	173	1.0	1.0	7.1	2.0	2.1	--

**Cardiac Presentation**

The echocardiogram in this patient demonstrated normal **left atrial** size based on 2 different LA measurement methods. The cranial and caudal **mitral** valve leaflets presented thickening consistent with endocardiosis. Doppler revealed mild eccentric MR. 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 with mild 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). No visible **pericardial** or free pleura fluid was noted. No echographically detectable evidence of cardiac / pericardial tumors was visible.

**Urinary System**

The urinary bladder, trigone, cystourethral junction, and visible pelvic urethra to a depth of 2.0 cm exhibited normal thickness and tone. Anechoic urine was present in the lumen with no urine mineral or



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calculi. The ureteral papillae were normal. The ureters were not visible which is normal. No evidence of inflammatory or neoplastic change were noted.

The area of the iliac trifurcation was free of pathology.

Normal size and margination was 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 moderate loss of corticomedullary symmetry and definition expected for the age of the patient. Areas of mild medullary mineral were present. The left kidney measured 3.0 cm in length. The right kidney measured 3.5 cm in length.

**Adrenal Glands**

The bilateral adrenal glands were mildly enlarged in size. Mild parenchyma heterogeneity and mild capsule asymmetry was present without suspicion for overt neoplasia. The left adrenal gland measured 0.74 cm width in the caudal pole. The right adrenal gland measured 0.86 cm width in the caudal pole.

**Spleen**

The spleen exhibited primarily finely textured parenchyma which was hyperechoic to the liver and renal cortical parenchyma. Mild generalized parenchyma heterogeneity was present without evidence of nodular changes. 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. The parenchymal heterogeneity is likely consistent with benign changes such as extramedullary hematopoiesis or age-related remodeling with minor potential for inflammatory or neoplastic disease.

**Liver & Gallbladder**

The liver presented mildly enlarged with symmetrical contour and nonhomogenous increased hepatic parenchyma echogenicity with intermittent mild hypoechoic intraparenchymal nodules with an example measuring 1.2 cm in diameter.

The gallbladder was non distended in size with minor biliary sludge. The cystic duct and common bile ducts were normal without evidence of dilation.

**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 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.

**Free Abdomen**

No overt lymphadenopathy or peritoneal effusion was present.



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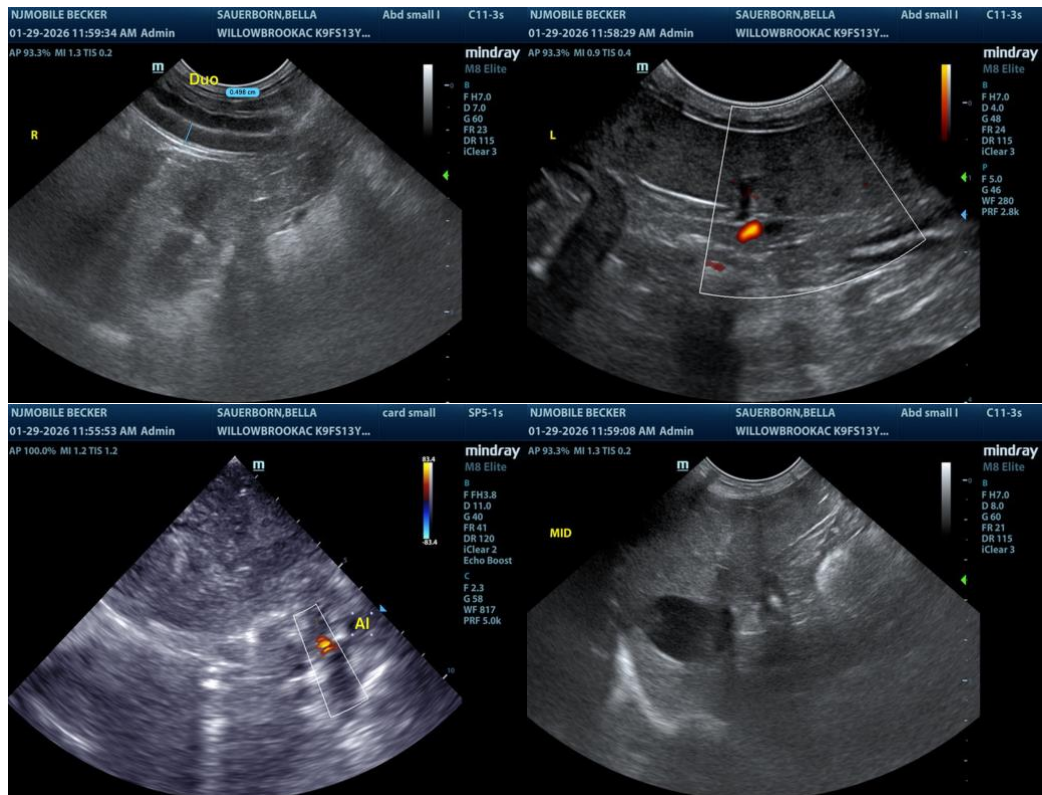
**ULTRASONOGRAPHIC FINDINGS**

- Compensated mitral valve insufficiency (B1).
- TV insufficiency- no evidence of clinical pulmonary hypertension.
- Hepatopathy exhibiting nonhomogenous increased to subtle nodular parenchyma- chronic vacuolar or cholestatic hepatopathy, inflammation, mild areas of nodular hyperplasia or hematopoiesis, fibrosis, hepatic neoplasia (thought less likely) are all possible.
- Minor gallbladder debris (non-mucocele).
- Mild heterogeneous spleen- subjective benign.
- Bilateral mild adrenomegaly- subjective benign.
- Nonspecific chronic renal changes exhibiting medullary mineral.

**INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS**

Further assessment of the liver may include (assuming normal clotting status and using a 25-gauge needle) FNA cytology in combination with adrenal testing if clinical signs are consistent with Cushing's syndrome and given thrombocytosis. Hepatosupportive medications may be considered. ACE inhibitor medication is warranted if evidence of systemic BP or UPC greater than 2.0.

The lack of left or right heart chamber enlargement indicates the current and future risk of complications secondary to MR/TR is low. No indication for cardiac medication. Echocardiographic monitoring is recommended for further prognosis. Recheck echo is suggested in six months or sooner if clinically indicated. Cardiac anesthetic risk considered mild. 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.





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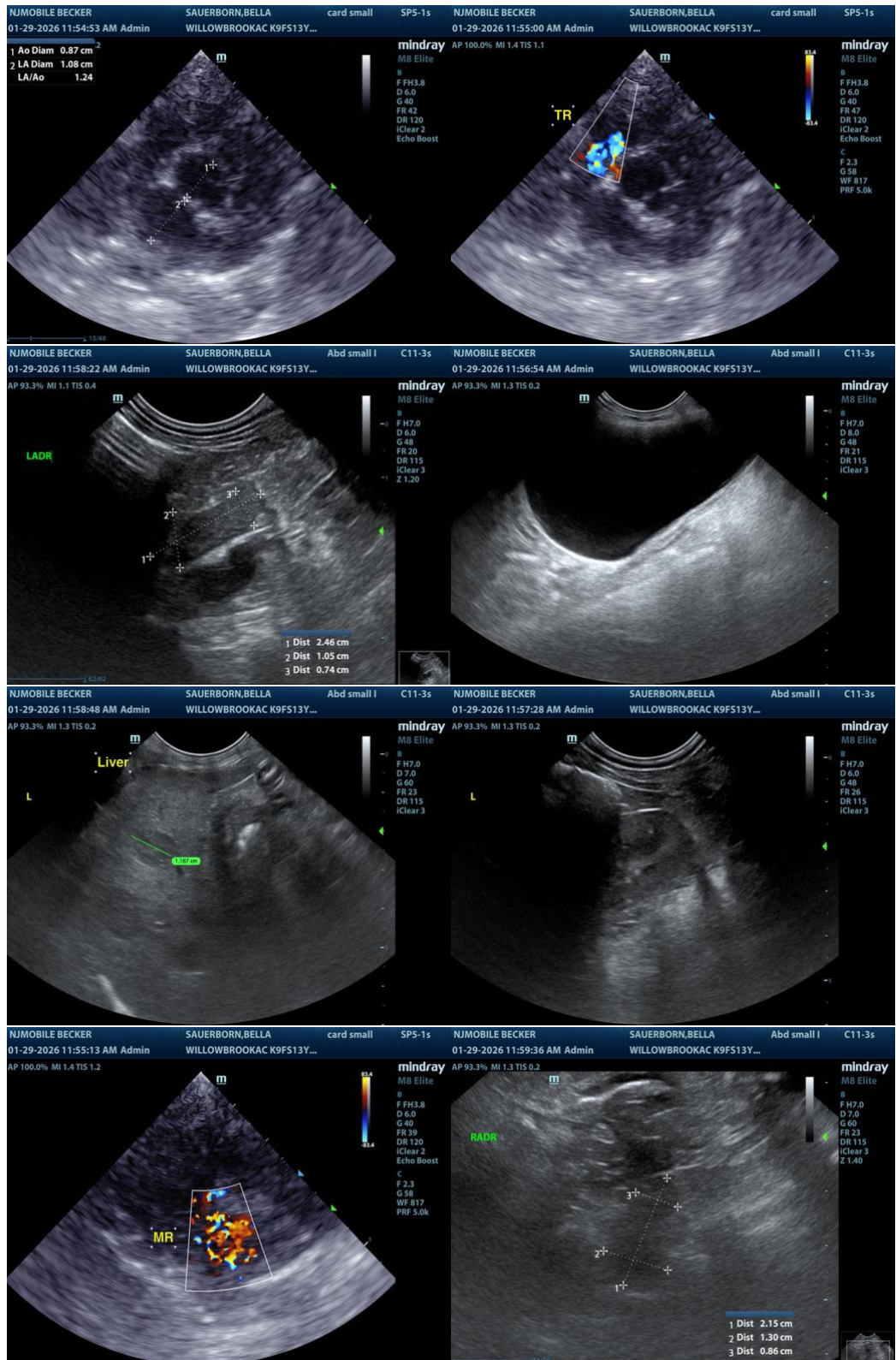
Dr. Bott-Wentworth

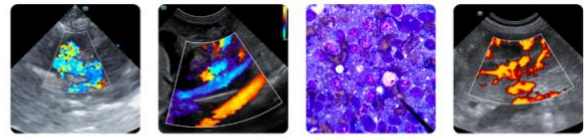
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The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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)