PATIENT

Bella Napoli

SPECIES

Canine

BREED

Cocker Spaniel

SEX

Spayed Female

AGE

13 Years

WEIGHT

38 lbs

INTERPRETED BY

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

IMAGING PERFORMED BY

Vincent Ravancho CVT

HOSPITAL NAME

All Creatures Great & Small Fairfield

REFERRING VET

Dr. Perez

INVOICE

16340

DATE

06/04/26

PRESENTING CLINICAL SIGNS

Enlarged heart on radiographs, coughing. No evidence of CHF

U/A - proteinuria, USG 1.036. TP 8.0, Glob 4.3, ALP 394, BUN/Creat Ratio 52, Phos 6.1, Cholesterol 361, Platelets 705, Neut 11376.

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	5.4	3.3	NM	1.7	49	81	0.2
CANINE CARDIAC PARAMETERS	**HR** (BPM)	**AV VMAX** (m/s)	**PV MAX** (m/s)	**BODY WEIGHT**	**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	130	1.3	1.1	38 lbs	4.0	4.5	--

Cardiac Presentation

The echocardiogram in this patient demonstrated mild increased **left atrial** dimension based on 2 different LA measurement methods. The cranial and caudal **mitral** valve leaflets presented thickening consistent with endocardiosis. Doppler revealed significant 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 tricuspid insufficiency 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 3.0 cm exhibited normal thickness and tone. Anechoic urine was present in the lumen with no uroliths or

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

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 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 6.5 cm in length. The right kidney measured 6.2 cm in length.

Adrenal Glands

The left adrenal gland was indistinctly visualized yet with no overt pathology. The left adrenal gland subjectively measured 0.6 cm width.

The right adrenal gland was uniform in size and contour with a uniformly hypoechoic parenchyma. The right adrenal gland measured 0.53 cm width 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 & Gallbladder

The liver was subjectively normal in size, structure, and contour. The liver parenchyma was mild / moderate nonuniform and hypoechoic to the spleen with a mild/ moderate coarse echotexture and subjective mild to benign parenchymal remodeling. The hepatic and portal vasculature were normal in appearance without signs of congestion. A noncapsule deforming isoechoic nonhomogenous ventrocaudal intraparenchymal nodule was present measuring 3.3 cm in diameter.

The gallbladder was non distended in size with mild nonorganized biliary sludge. The cystic duct and common bile ducts were normal without evidence of dilation. No evidence of inflammation or wall edema.

Gastrointestinal

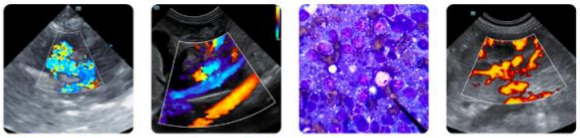
The stomach presented intact wall layering with a normal wall layer ratio. The lumen of the stomach was empty with no signs of ileus, obstruction or foreign material.

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.



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Free Abdomen

No overt lymphadenopathy or peritoneal effusion was present.

ULTRASONOGRAPHIC FINDINGS

- Chronic mitral valve disease (ACVIM stage B2).
- Tricuspid insufficiency- estimated pulmonary pressure gradient suggestive of mild pulmonary hypertension.
- Enlarged noncongested mild nonhomogenous liver with ventrocaudal intraparenchymal nodule- vacuolar, cholestatic, inflammatory hepatopathy, parenchymal remodeling, hyperplasia, granuloma, emerging to possible low-grade hepatic mass are all potentials.
- Mild gallbladder debris (non-mucocele).
- Nonspecific mild chronic renal changes.
- Overtly normal adrenal glands.

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

The cause of the murmur is chronic degenerative valvular changes with secondary primary eccentric mitral valve insufficiency and concurrent tricuspid valve insufficiency. The mild left atrial enlargement implies that the risk of complication secondary to mitral valve insufficiency is elevated, yet overall the left heart appears stable without overt congestive criteria. The estimated pulmonary pressure gradient suggests mild pulmonary hypertension yet no evidence of right chamber or pulmonary artery enlargement or hepatic congestion.

Pimobendan 0.3 mg/kg BID is recommended. Concurrent respiratory support is indicated and correlation with thoracic radiographs to assess for concurrent lower airway disease. If clinical signs are consistent with pulmonary hypertension, concurrent sildenafil trial 1-2 mg/kg BID is suggested. Prognosis is variable and sonographic monitoring is recommended.

Recheck echo in six months, sooner if progressive clinical signs. Elective anesthesia is not advised pending further cardiac monitoring. If required, the following protocol is suggested with limited anesthetic time and judicious IV fluid use with close clinical monitoring 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.

Assuming normal clotting status, hepatic parenchymal and ventrocaudal nodule FNA cytology are warranted for further clarification. Sonographic monitoring of the liver nodule for evidence of progression would be more conservative.

Further renal staging to include urine C/S and protein: creatinine ratio on sterile urine sample may be considered. Current urine specific gravity is not overtly suggestive of significant renal insufficiency or PU/PD. Adrenal screening could be considered if clinical signs consistent with Cushing syndrome are non-reported or arise despite lack of adrenal pathology and given thrombocytosis.

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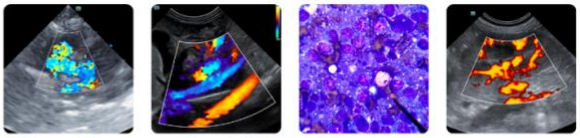

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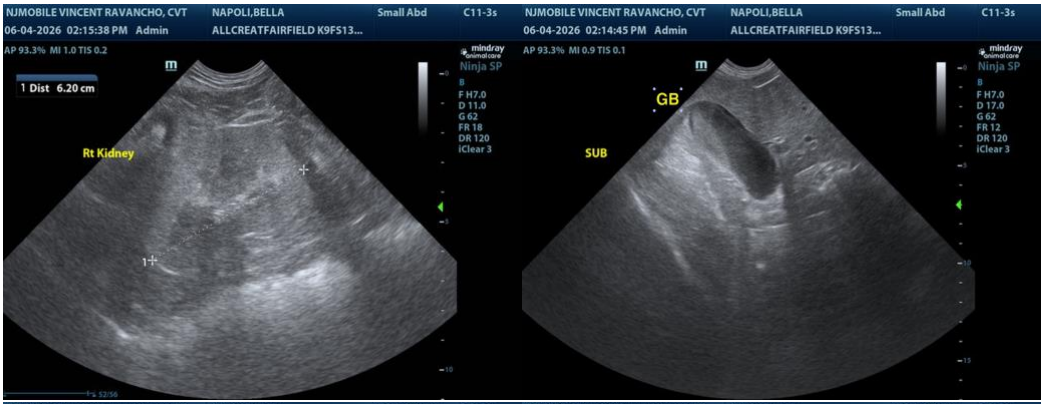

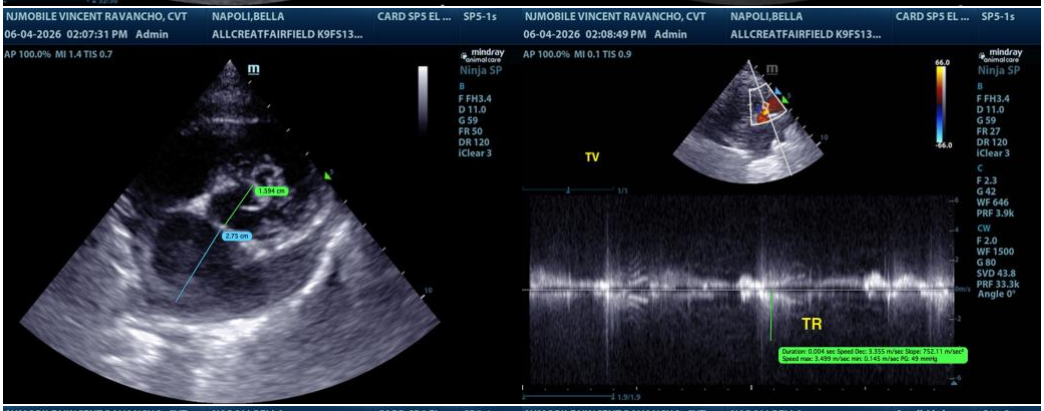

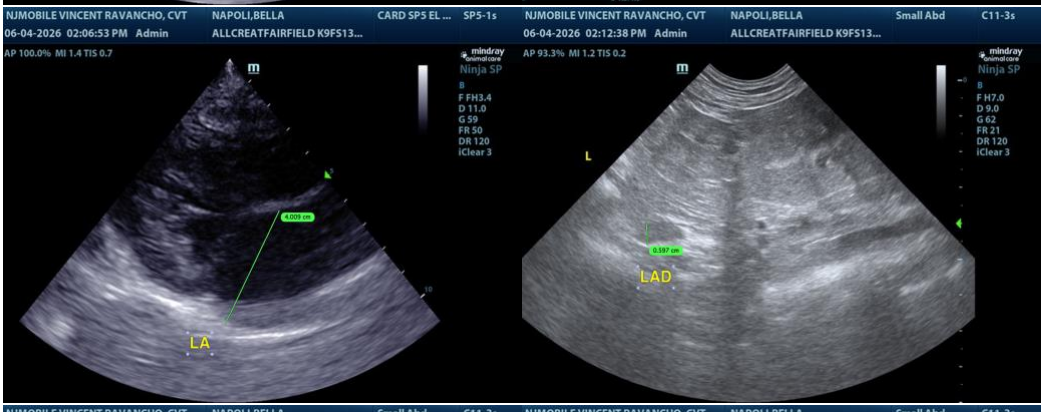

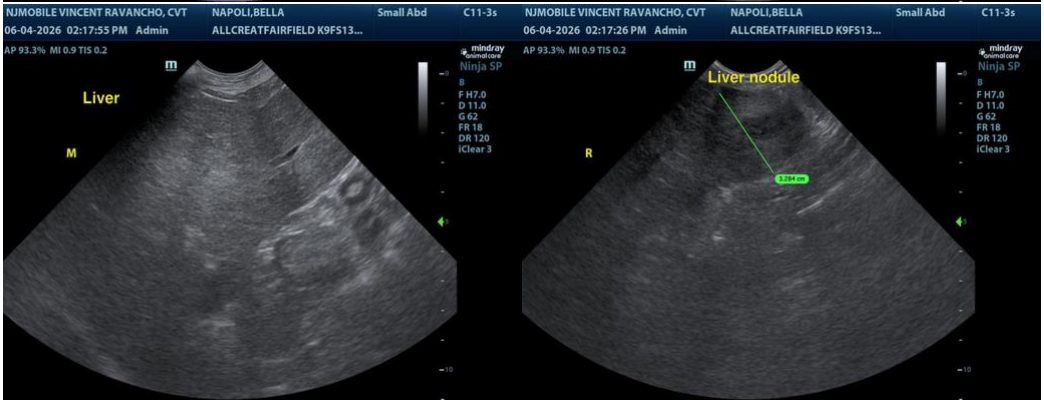

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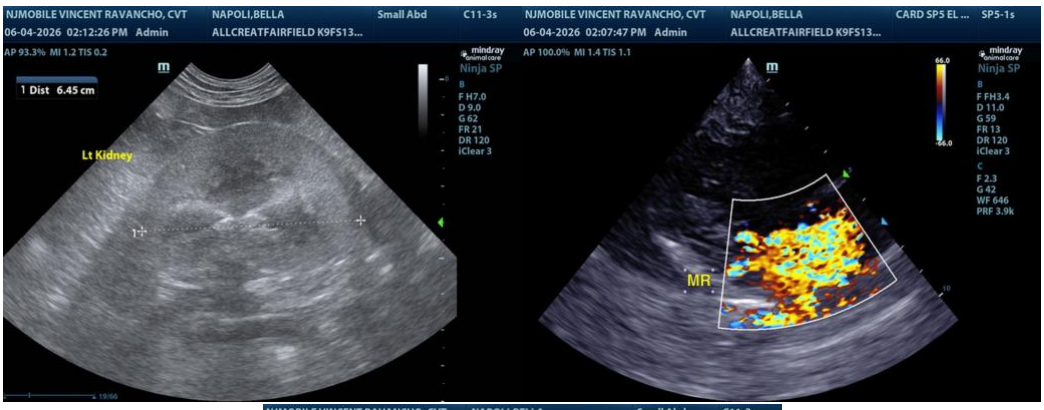

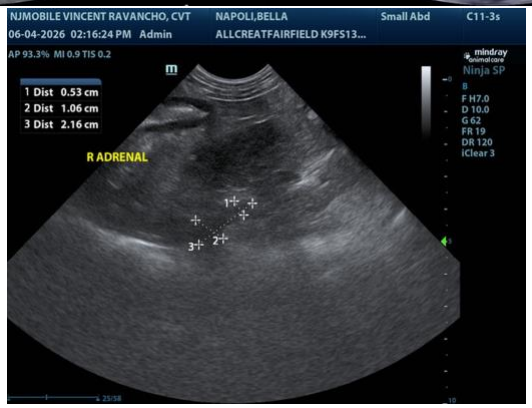

The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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