



PATIENT

Willy Cork

SPECIES

Canine

BREED

King Charles Cavalier

SEX

Male (N)

AGE

13 years

WEIGHT

25

INTERPRETED BY

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

IMAGING PERFORMED BY

Nicole Gotfredson

HOSPITAL NAME

Buffalo VC

REFERRING VET

Dr. Teresa Bessler

INVOICE

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DATE

2/24/23

PRESENTING CLINICAL SIGNS

currently on Lasix and gabapentin. Cough has increased and lungs auscultate raspy. Abnormal PE/Chem/CBC/UA Results: HCT=31.2, Retic=126.5, RBC=5.0,

ULTRASONOGRAPHIC EXAMINATION OF THE HEART & ABDOMEN

CANINE	MR	TR	LA/AO	LA/AO	FS	EF	EPSS
CARDIAC PARAMETERS	VMAX (m/s)	VMAX (m/s)	(Boon method)	(Heart Base; Swe)	(%)	(%)	(cm)
NORMAL PARAMETER	4.5-5.5	<2.7	1.3	<1.3	28-40	40-100	<0.6
PATIENT			2.2	2.3	40	75	0.40
CANINE	HR	AV	PV	BODY WEIGHT	LA	LVIDd	LVIDs
CARDIAC PARAMETERS	(BPM)	VMAX (m/s)	MAX (m/s)	(kg)	2D short axis Base view (cm)	Avg; 2D and m-mode short axis (cm)	Avg; 2D and m-mode short axis (cm)
NORMAL PARAMETER	50-100	0.7-1.7	0.7-1.6				
PATIENT	NM	1.0	0.8		5.7	4.9	

Cardiac Presentation

The echocardiogram in this patient demonstrated marked increased **left atrial** size based on 3 different LA measurement methods. Deviation of the interatrial septum towards the right atrium, indicative of increased left atrial pressure, was present. The cranial and caudal **mitral** valve leaflets presented mild thickening consistent with endocardiosis with mild anterior leaflet prolapse and lack of normal valvular coaptation. The **left ventricle** presented normal thicknesses with linear contour with marked increased LV volume. 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 adequate linear morphology. 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. No evidence of arrhythmia was noted.



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Urinary System

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The urinary bladder, trigone, and cystourethral junction exhibited normal thickness and tone. Anechoic urine was present in the lumen with no uroliths or sediment. No mineral or calculi was noted. 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 residual prostate was free of overt pathology.

The area of the aortic trifurcation was free of pathology.

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Normal size and asymmetrical 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 moderate loss of corticomedullary symmetry and definition expected for the age of the patient. No evidence of pelvic dilation was present. Minor medullary mineral was noted along with bilateral renal cysts. The left kidney measured 4.2 cm in length. The right kidney measured 4.8 cm in length.

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Adrenal Glands

The left adrenal gland was uniform in size and contour with a uniformly hypoechoic parenchyma. The left adrenal gland measured 0.29 cm width at the caudal pole. The right adrenal gland was not definitively visualized.

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Spleen

The spleen was not definitively visualized. No overt pathology was noted in the area of the spleen.

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Liver/ Gallbladder

The liver presented enlarged in size. The parenchyma of the liver was subjectively normal in echogenicity. 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. Normal hepatic vascular volume was noted with no congestive criteria. The gallbladder was non-distended in size containing anechoic content with moderate, congealed, nonorganized, hyperechoic gallbladder debris. No evidence of inflammatory criteria was noted. The cystic and common bile ducts were normal.

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Gastrointestinal

The stomach presented intact wall layering with a normal wall layer ratio. The lumen of the stomach contained mild echogenic, nonshadowing ingesta without signs of obstruction or foreign material.

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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.

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



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Pancreas

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The pancreas was normal in size and contour with isoechoic to heterogeneous parenchyma compared to adjacent omentum, consistent with age-related pancreatic changes. No signs of active inflammation or neoplasia.

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Free Abdomen

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No overt lymphadenopathy or peritoneal effusion was present.

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ULTRASONOGRAPHIC FINDINGS

SEX

- Progressive severe chronic mitral valve disease exhibiting marked LA/LV enlargement and abnormal mitral valve coaptation

Male (N)

- Bilateral chronic degenerative to polycystic kidneys

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- Static vacuolar hepatopathy pattern and gallbladder debris (non-mucocele)

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

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Significant progression in left side chamber enlargement compared to the previous study, indicative of ACVIM Stage C chronic mitral valve disease. No overt evidence of concurrent clinical pulmonary hypertension with adequate LV function.

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Pimobendan 0.3 mg/kg PO BID and combination Lasix/Spironolactone both 1.0-2.0 mg/kg PO BID, are recommended. Given this presentation, the coughing and associated atypical lung auscultation is likely consistent with cardiogenic congestion with a contribution to the cough potentially secondary to mainstem bronchi irritation compression owing to LA enlargement +/- concurrent lower airway disease. Antitussive hydrocodone may prove beneficial. Long-term prognosis is likely poor, given the degree of LA/LV enlargement, yet assessment to combination diuretic protocol and Pimobendan with as-needed respiratory support is suggested. Recheck echocardiogram is recommended in 4 months, sooner if clinically indicated.

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Monitoring of renal parameters on diuretic therapy, as well as assessment of systemic BP is recommended.

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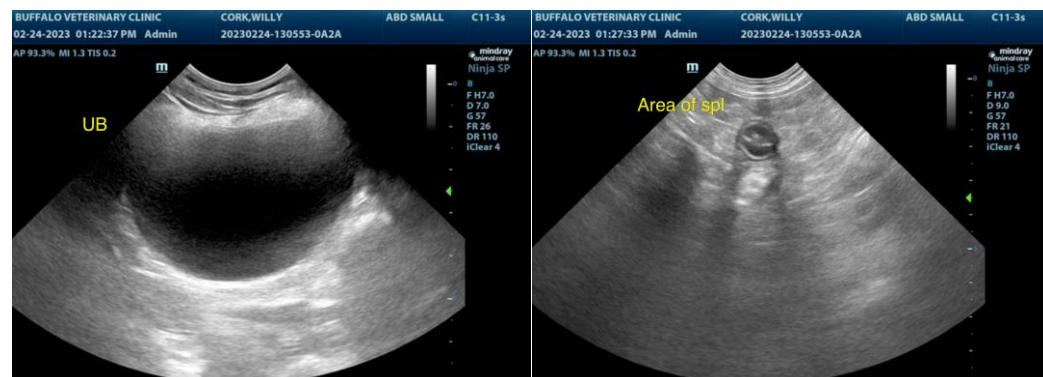
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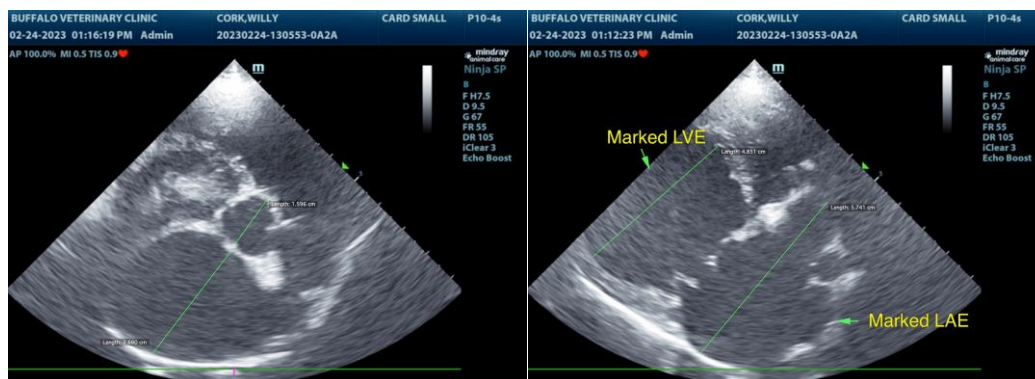
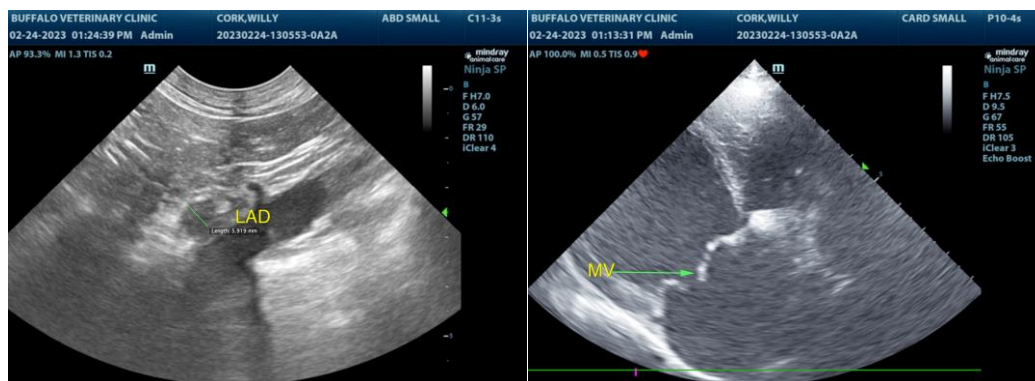
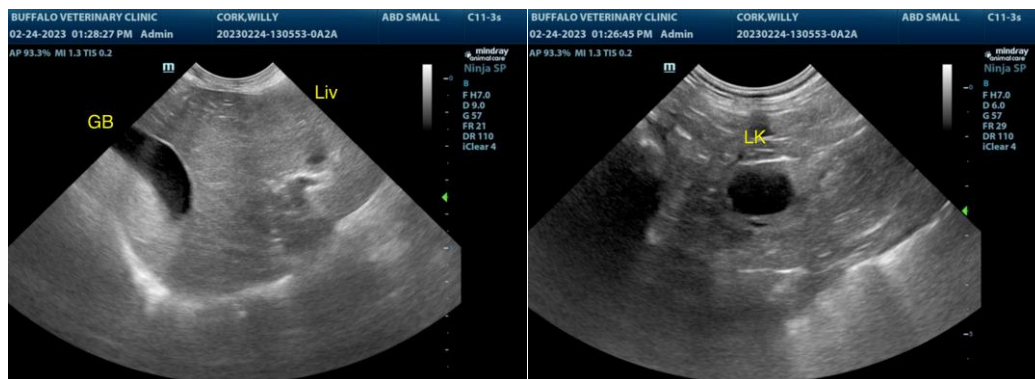
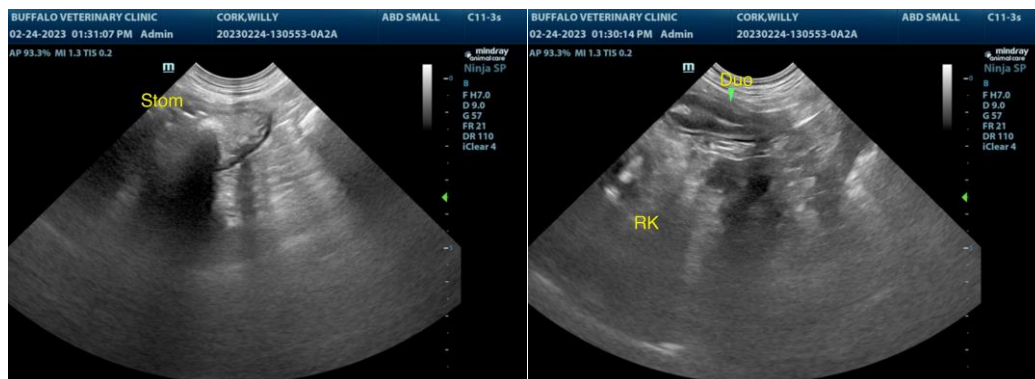
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The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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.

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