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Clinical Sonography & Telecytology
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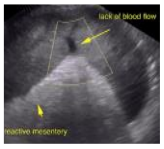
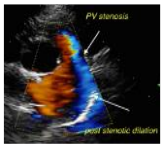
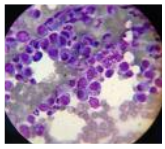
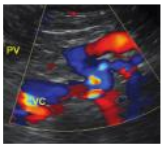





SonoPath.com
1-800-838-4268 info@sonopath.com

PATIENT
Willy Cork

SPECIES
Canine

BREED
King Charles Cav

SEX
Male (N)

AGE
13 years

WEIGHT
24

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

IMAGING PERFORMED BY
Nicole Gotfredson

HOSPITAL NAME
Buffalo VC

REFERRING VET
Teresa Bessler

INVOICE
14772

DATE
8/31/22

PRESENTING CLINICAL SIGNS

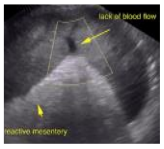
repeat echo, previously done 5/31/22. Currently on 5mg vetmedin 1/2 BID, put on lasix 8/3/22. Currently is coughing.
Abnormal PE/Chem/CBC/UA Results: CHEM/CBC done 8/16/22: BUN 31, ALKP=484, HCT=33, RETICS=121.7, RBC=5.41

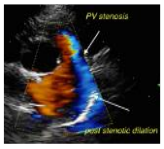
ULTRASONOGRAPHIC EXAMINATION OF THE HEART & ABDOMEN

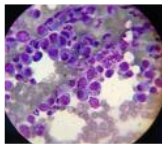
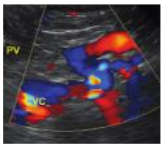
CANINE CARDIAC PARAMETERS	MR VMAX (m/s)	TR VMAX (m/s)	LA/AO (Boon method)	LA/AO (Heart Base; Swe)	FS (%)	EF (%)	EPSS (cm)
NORMAL PARAMETER	4.5-5.5	<2.7	1.3	<1.3	28-40	40-100	<0.6
PATIENT				2.0	37.5	71	0.38
CANINE CARDIAC PARAMETERS	**HR** (BPM)	**AV VMAX** (m/s)	**PV MAX** (m/s)	**BODY WEIGHT** (kg)	**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	1.4	1.0		5.1	4.0	

Cardiac Presentation

The echocardiogram in this patient demonstrated enlarged **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 vegetative thickening consistent with endocardiosis. Doppler indicated eccentric insufficiency. The **left ventricle** presented thicknesses with maintained linear contour with increased left ventricle 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.





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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 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.

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 moderate loss of corticomedullary symmetry and definition expected for the age of the patient. No evidence of pelvic dilation was present. Multiple cortical cysts were present in both kidneys. The left kidney measured 4.6 cm in length. The right kidney measured 5.3 cm in length.

Adrenal Glands

The left adrenal gland was uniform in size and contour with a uniformly hypoechoic parenchyma. The left adrenal gland measured 0.63 cm width at the caudal pole and 0.5 cm width at the cranial pole. The right adrenal gland was not definitively visualized.

Spleen

The spleen was not visualized. No evidence of pathology was noted in the area of the likely previous spleen.

Liver/ Gallbladder

The liver was subjectively normal in size, structure, and contour. The liver parenchyma was mildly nonuniform and hypoechoic 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 containing moderate, non-dependent, mildly congealed, hyperechoic 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 contained moderate, nonshadowing ingesta/chyme most consistent with post prandial presentation without signs of ileus, obstruction or foreign material.

The small intestine presented intact wall layering with 1:3 muscularis/mucosa ratio. Segmental nonshadowing ingesta / chyme was present.

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.

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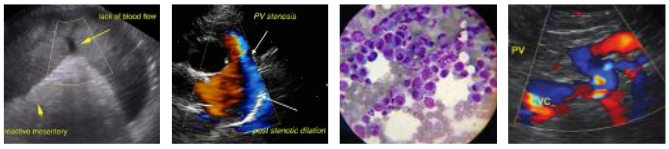

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Free Abdomen

No overt lymphadenopathy or peritoneal effusion was present.

ULTRASONOGRAPHIC FINDINGS

- Mildly progressive chronic mitral valve disease (ACVIM B2, possible emerging Stage C)
- Static chronic renal changes with cortical cysts
- Mild vacuolar hepatopathy pattern
- Moderate congealed gallbladder debris (non-mucocele)
- Overtly normal gastrointestinal tract with gastrointestinal ingesta - likely post prandial presentation

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

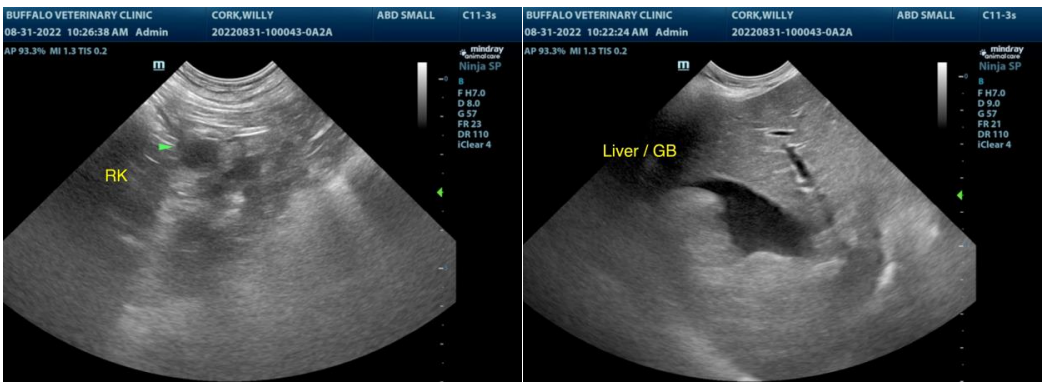
The echocardiogram revealed mild progressive left atrium enlargement with essentially static left ventricle volume. No other clinical issues such as LV systolic dysfunction or overt evidence of clinical pulmonary hypertension were present. The progressive LA enlargement indicates that the current and future risk going forward of complication is increased.

Continued Vetmedin 0.3 mg/kg PO BID, along with current Lasix at the lowest effective dose, and monitoring of clinical response is recommended. Potentially, the coughing in this patient may be multifactorial in origin owing to potential early congestion, mainstem bronchi irritation or compression owing to progressive LA enlargement, +/- lower airway disease as a contributing factor. A Hydrocodone trial may be beneficial. Baseline monitoring of resting respiration rate is recommended. Recheck echocardiogram is recommended in 4- 6 months, sooner if progressive clinical signs develop.

Overall, static abdomen compared to the previous ultrasound with largely geriatric changes.

Further renal staging to include urine C/S and protein: creatinine ratio on sterile urine sample may be considered.

Hepatosupportive medications including Denamarin and Ursodiol may prove beneficial.



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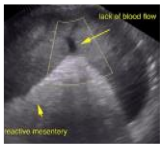
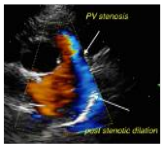
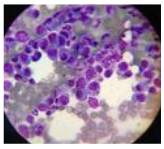
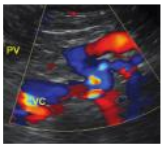

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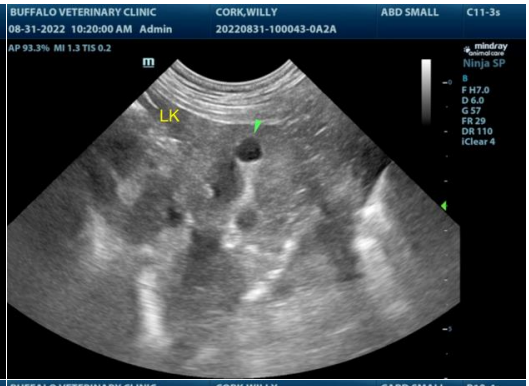

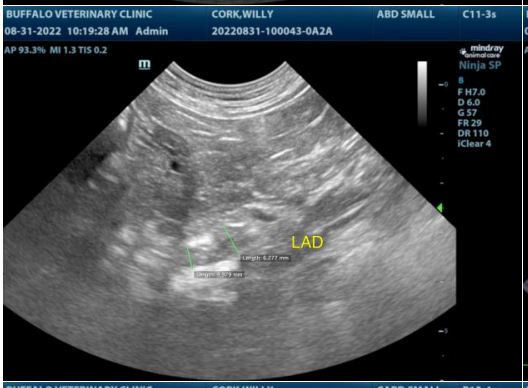

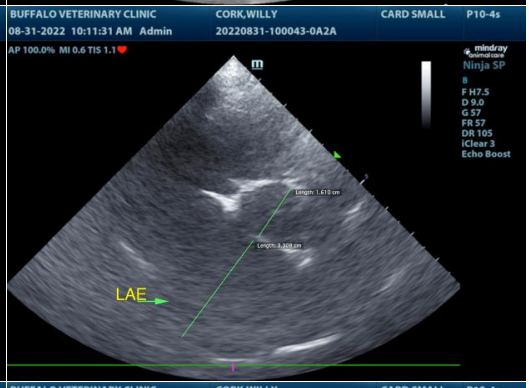

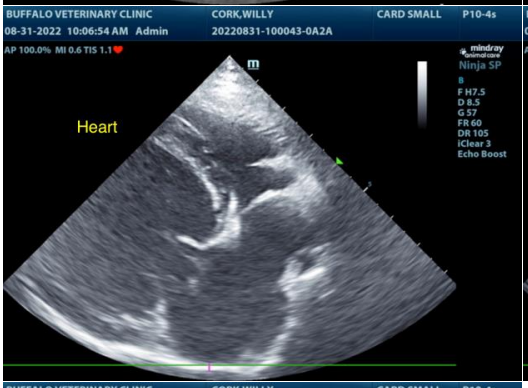

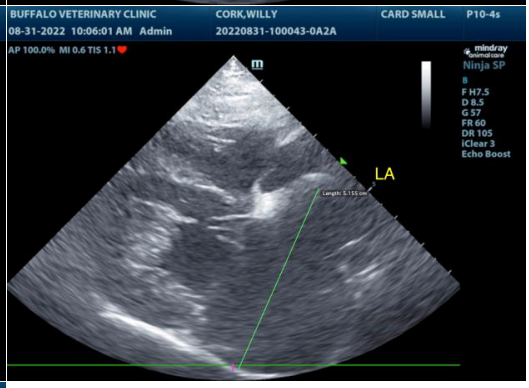

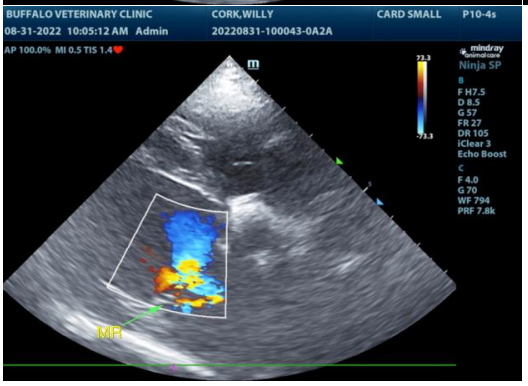

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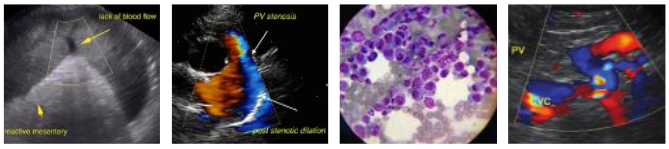

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The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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