

PATIENT PRESENTING CLINICAL SIGNS

PATIENT Max Stewart recheck echo from July 31/21 was diagnosed with stage 3 mitral valve disease and minor pulmonary insufficiency. Also has history of pancreatitis and chronic low grade hepatopathy and azotemia. Current meds include Ursodial, Zentoni, Gabapentin, Omeprazole and Sulcrate.

SPECIES Abnormal PE/Chem/CBC/UA Results: CBC - WNL and M1 elevation in Creatinine, BUN, AST, CK, M2 elevation in Spec CPL, Lipase and Amylase.

Canine

ULTRASONOGRAPHIC EXAMINATION OF THE HEART & ABDOMEN

BREED

Schnoodle

SEX

Neutered Male

AGE

13 Years 5 Months

WEIGHT

10 kg

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	6.0	2.2	NM	1.24	50	83.5	0.2
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	150	1.2	1.0		3.0	2.6	

INTERPRETED BY

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

IMAGING PERFORMED BY

Crystal Hill

HOSPITAL NAME

Nelson Animal Hospital

REFERRING VET

Dr. Frederick

INVOICE

35958

DATE

3/8/22

Cardiac Presentation

The echocardiogram in this patient demonstrated normal **left atrial** size based on 3 different LA measurement methods. Chamber volumes and echogenicity were normal. The cranial and caudal **mitral** valve leaflets presented vegetative thickening consistent with endocardiosis. Doppler indicated measurable eccentric insufficiency. 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 subjective thickening with mild TV insufficiency. 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 with previously noted minor PV insufficiency. 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.

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



PATIENT

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

The area of the aortic trifurcation was free of pathology.

SPECIES

Canine No overt pathology in the area of the residual prostate.

BREED

Schnoodle 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 loss of corticomedullary symmetry and definition expected for the age of the patient. No evidence of pelvic dilation was present. The left kidney measured 4.4 cm. The right kidney measured 5.6 cm. Variably sized cysts were present in both kidneys. Example of cyst in left kidney measured 1.9 cm, example of cyst in right kidney measured 2.9 cm.

SEX

Neutered Male **Adrenal Glands**
The bilateral adrenal glands were normal in size. Mild parenchyma heterogeneity and mild capsule asymmetry was present without suspicion for overt neoplasia. The left adrenal gland measured 1.7 cm x 0.58 cm at the caudal pole. The right adrenal gland measured 1.9 cm length x 0.67 cm at the caudal pole.

AGE

13 Years 5 Months **Spleen**
The spleen exhibited primarily finely textured and homogenous parenchyma which was hyperechoic to the liver and renal cortical parenchyma. Multifocal, uniformly hyperechoic, non-shadowing nodules were present primarily in the mid to medial parenchyma and around the hilus, non-expansive with indistinct margins. 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 or neoplastic changes were not noted. The echogenic nodules tend to trend benign and are most consistent with benign hyperplasia or myelolipomas.

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Liver

The liver exhibited subjective normal size and contour. Potential for mild subnormal overall liver size, yet not definitive. Uniform hepatic parenchyma noted, exhibiting normal echogenicity with mild coarse echotexture. The gallbladder was non-distended in size with thin walls and primarily anechoic luminal content. 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 mild echogenic, nonshadowing ingesta/chyme. This non-specific, yet suggestive of probable recent meal ingestion.

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.

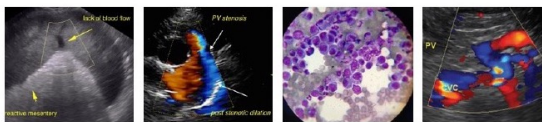
Normal visible colon wall layers were present with apparent formed feces in lumen.

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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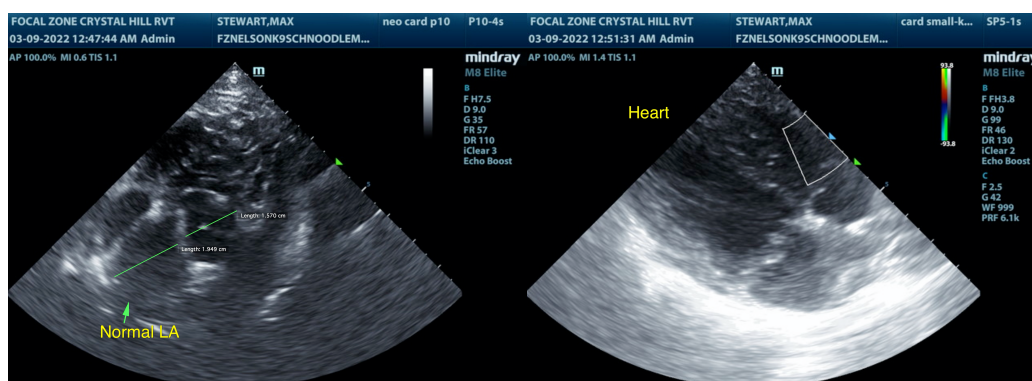
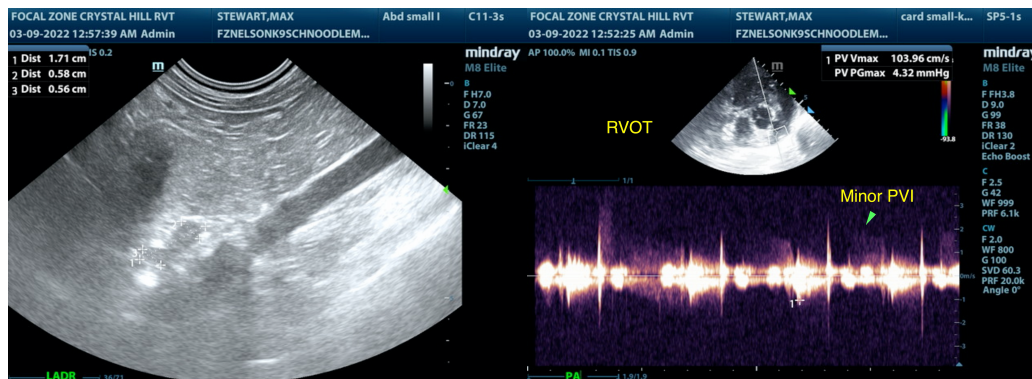
ULTRASONOGRAPHIC FINDINGS

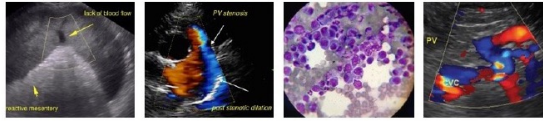
- Compensated chronic mitral valve disease – ACVIM B1
- Minor TV/PV insufficiency
- Moderate chronic renal changes with variably sized cysts
- Benign splenic nodules – consistent with probable myelolipomas
- Chronic hepatopathy – subjectively benign, sonographically normal gallbladder.
- Sonographically unremarkable pancreas – potential for low-grade or chronic pancreatitis, which may present sonographically normal, no evidence of active pancreatitis.

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

Similar cardiac presentation compared to previous echo without evidence of progressive cardiac changes and consistent with compensated chronic mitral valve disease. In a non-clinical patient without evidence of significant chamber enlarged, cardiac medications are not specifically indicated. Continued monitoring at this stage would be appropriate with recheck echocardiogram suggested in 6 months. No other clinical issues such as systolic dysfunction or clinical pulmonary hypertension were noted.

Further renal staging to include urine C/S and protein: creatinine ratio on sterile urine sample may be considered. Monitoring of systemic blood pressure could be considered if evidence of proteinuria or progressive azotemia. Empirically, CKD therapy as well as continued hepatosupportive medications would be reasonable.





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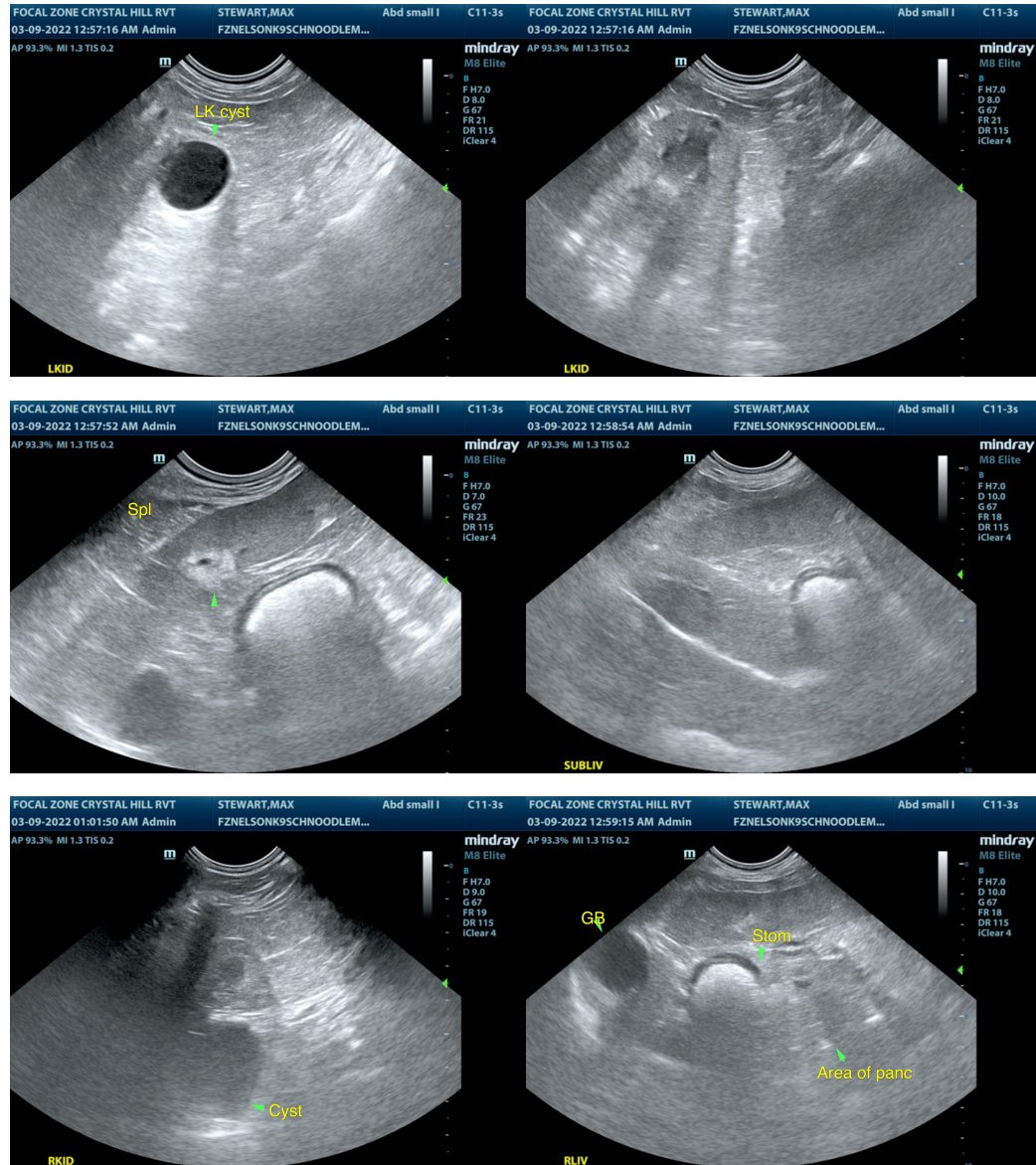
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The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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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