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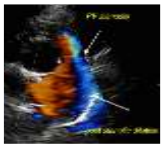
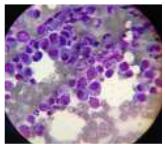
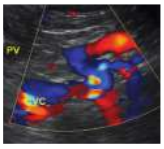




SonoPath.com
1-800-838-4268 info@sonopath.com

PATIENT

Reagan Kelsch

SPECIES

Canine

BREED

Cavalier King Charles Spaniel

SEX

FS

AGE

11 years

WEIGHT

31 lbs.

INTERPRETED BY

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

IMAGING PERFORMED BY

Shari Reffi, CVT

HOSPITAL NAME

Newton Vet

REFERRING VET

Dr. Kim

INVOICE

13423

DATE

2/25/22

PRESENTING CLINICAL SIGNS

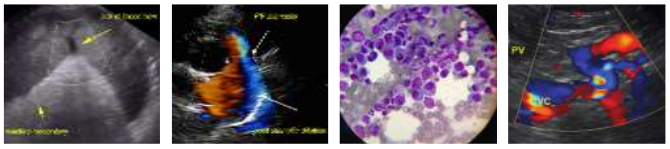
Pulmonary edema on rads. In November was in early stage B2 DMVD-was not on medications. Current meds: Lasix 1mg/kg iv q8h PRN, Pimobendan 2.5mg 1.5tabs bid
Abnormal PE/Chem/CBC/UA Results: ALT 121 (120 H); ALP 420 (140 H)

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	<1.6	28-40	40-100	<0.6
PATIENT	5.2	1.4	1.3	1.56	49.5	82.8	0.18
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	197	1.3	0.7		3.7	2.5	

Cardiac Presentation

The echocardiogram in this patient demonstrated mild to moderately enlarged **left atrial** size based on 3 different LA measurement methods. Subtle deviation of the interatrial septum towards the right atrium suggestive of probable mild elevated left atrial pressure was present. The cranial and caudal **mitral** valve leaflets presented vegetative thickening consistent with endocardiosis. No evidence of valvular prolapse or chordae tendineae rupture was noted. Doppler indicated measurable eccentric mitral valve 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 revealed concurrent mild vegetative changes with mild TR. 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, and cystourethral junction 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 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 4.8 cm in length. The right kidney measured 5.8 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 0.50 cm width at the caudal pole and 0.39 cm width at the cranial pole. The right adrenal gland was uniform in size and contour with a uniformly hypoechoic parenchyma. The right adrenal gland measured 0.65 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 presented mildly enlarged in size. The parenchyma of the liver was subjectively normal in echogenicity compared to the spleen and renal cortices. 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. The gallbladder was non-distended in size with 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 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 pancreas was normal in size and contour with heterogeneous to mildly echogenic parenchyma compared to adjacent omentum. No signs of active inflammation or neoplasia.

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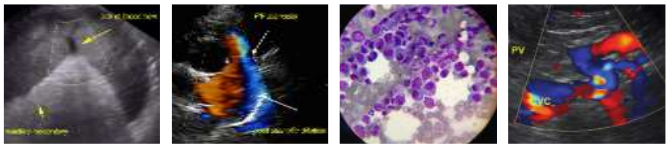

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Free Abdomen

No overt lymphadenopathy or peritoneal effusion was present.

ULTRASONOGRAPHIC FINDINGS

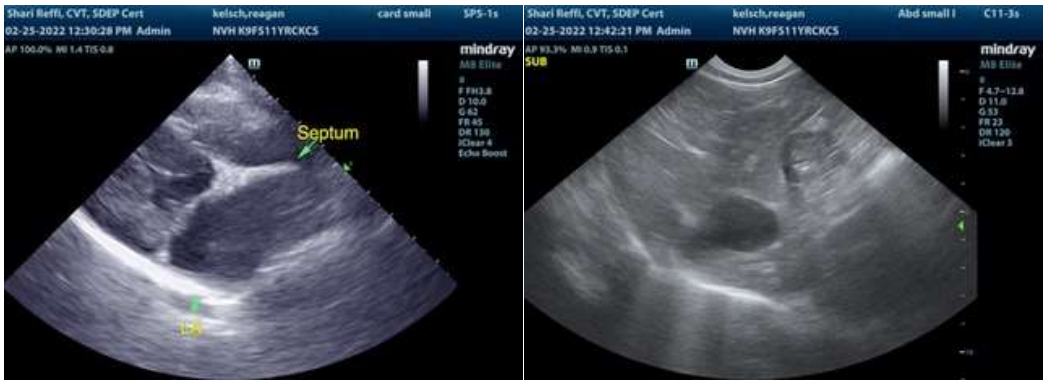
- Chronic mitral valve disease (ACVIM B2)
- Hepatopathy - subjectively benign
- Mild pancreatic remodeling
- Mild chronic renal changes

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

The degree of left atrial enlargement indicates that the current and future risk going forward is elevated. Subjectively, the degree of left atrium enlargement is not overtly consistent with cardiogenic pulmonary edema, yet this possibility cannot be excluded. Given the cardiac changes, Pimobendan 0.3 mg/kg PO BID, as well as current Lasix at lowest effective dose with assessment of clinical response is recommended. If persistent or recurrent signs of pulmonary edema, consideration for noncardiogenic causes of pulmonary edema may be indicated. Baseline monitoring of resting respiration rate once stabilized would be appropriate. Recheck echocardiogram is recommended in 6 months, sooner if continued episodes of potential cardiogenic pulmonary edema persist.

The overall appearance of the liver was consistent with benign hepatopathy. Considerations may include vacuolar hepatopathy and nonclinical cholestasis, given the ALP elevation, with potential for primary or concurrent Inflammatory hepatopathy given the ALT elevation. Hepatosupportive medications including Ursodiol may prove beneficial.

Potential for low-grade to chronic pancreatitis may be suspected if evidence of cranial abdominal or subxiphoid discomfort on palpation. Correlation with a Spec cPL may be considered.



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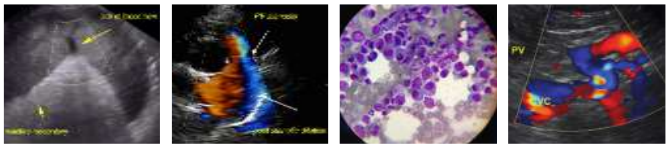

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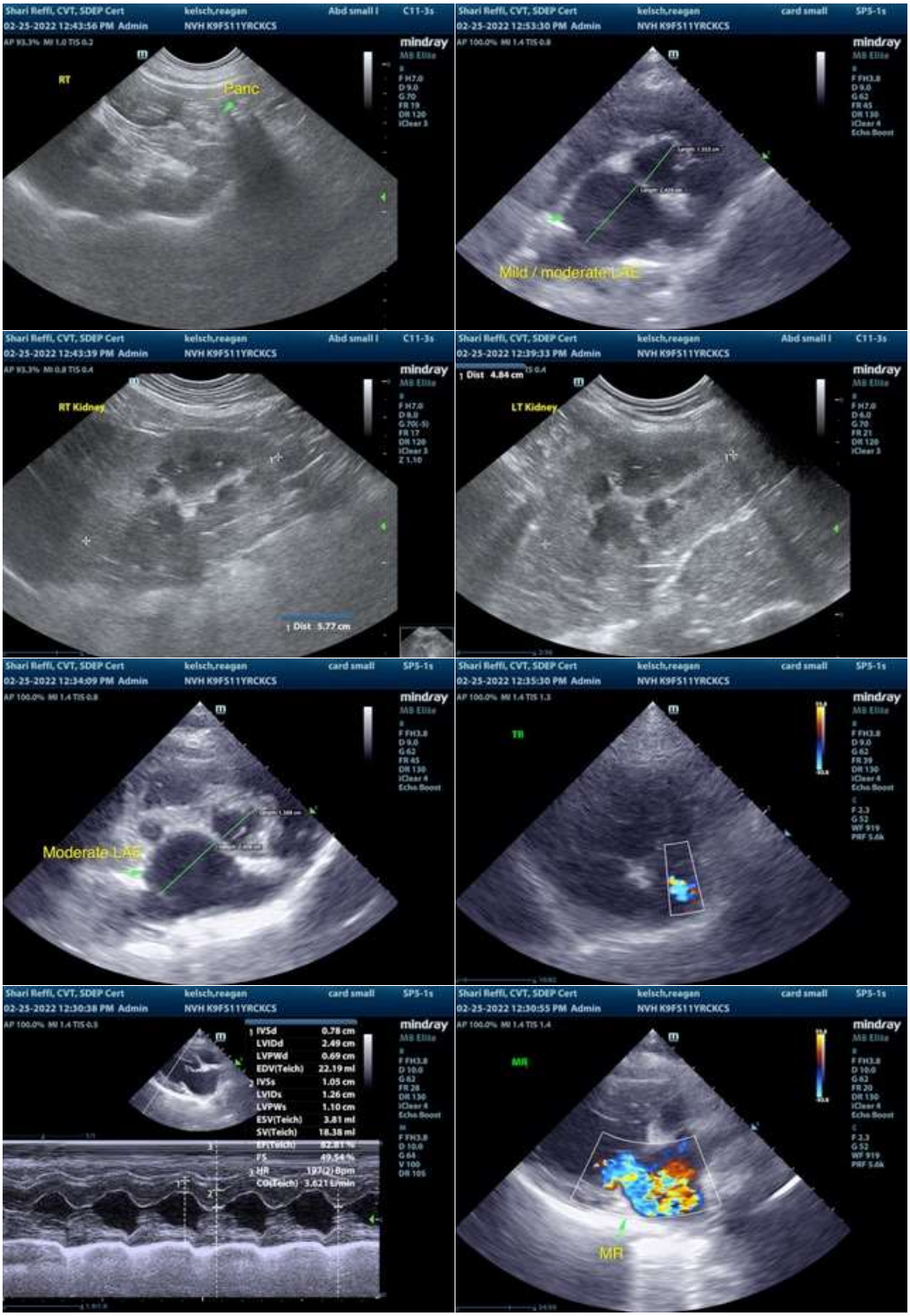

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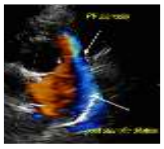
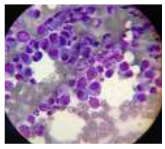
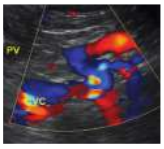

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The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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