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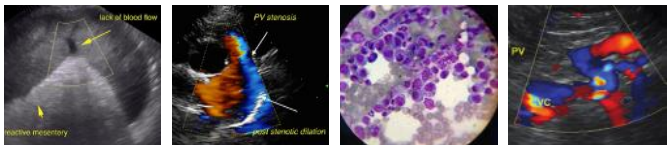
Clinical Sonography & Telecytology
EDUCATIONAL TELECONSULTATION SERVICES™



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

PATIENT

Dexter Steinkraus

SPECIES

NA

BREED

NA

SEX

NA

AGE

NA

WEIGHT

NA

INTERPRETED BY

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

IMAGING PERFORMED BY

Brent Crutchfield

HOSPITAL NAME

Dr. Seth Mitchell

REFERRING VET

Dr. Cail

INVOICE

10974ag

DATE

06/27/2022

PRESENTING CLINICAL SIGNS

NA

ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN AND HEART

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		1.5		1.4	41.7	76	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				
PATIENT	93	1.4			2.5	2.5	

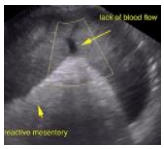
Cardiac Parameters

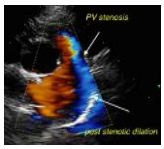
The echocardiogram in this patient demonstrated normal left atrial size based on 3 different LA measurement methods. Chamber volumes and echogenicity were normal. The cranial and caudal mitral valve leaflets presented vegetative thickening consistent with endocardiosis. Doppler indicated subjective mild to moderate 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. Trace AI was present on Doppler. The right atrium and auricle revealed normal size, structure and content. No evidence of masses was noted or chamber overload. Tricuspid valvular assessment demonstrated potential minor concurrent thickening with minor TR 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 infiltrative disease was visible. The cranial mediastinum and pericardial regions were free of masses in the visible window.

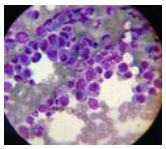
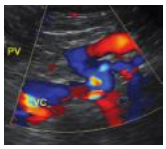
Urinary System

The urinary bladder, trigone, cystourethral junction, and visible pelvic urethra to a depth of 2 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 were noted.

Normal size and margination were present in the kidneys. A normal 1:3 cortex / medulla ratio and normal corticomedullary definition were maintained. The echogenicity of the cortex was similar to or slightly less than normal liver parenchyma while the medulla echogenicity was hypoechoic to the cortex with no





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evidence of pelvic dilation. The left kidney measured 4.7 cm in length. The right kidney measured 4.7 cm in length.

The area of the aortic trifurcation was free of pathology.

The area of the residual prostate was normal measuring 1.1 cm in diameter.

Adrenal Glands

The left adrenal gland was uniform in size and contour with a uniformly hypoechoic parenchyma. The left adrenal gland measured 0.5 cm width at the caudal pole. No overt pathology in the area of the right adrenal gland.

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

The liver was subjectively normal in size, structure, and contour. The liver parenchyma was uniform and hypoechoic to the spleen with a mild coarse echotexture. The hepatic and portal vasculature were normal in appearance without signs of congestion. The gallbladder was distended in size with evidence of wall edema containing moderate mildly hyperechoic nonmineralized nondependent to organized luminal debris in a pseudostellate pattern. Evidence of peripheral gallbladder inflammation and concurrent mild volume free fluid was present primarily in the cranial abdomen and around the gallbladder. 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 lumina gas with no signs of ileus, obstruction or foreign material. The ventral gastric body wall measured 0.46 cm in width.

The small intestine presented intact wall layering with 1:3 muscularis/mucosa ratio. Mild duodenal ileus exhibited by mild upper duodenal retained anechoic fluid. The lumen of the small intestine was empty with no signs of obstruction or foreign material. The duodenum wall 0.44 cm in width. The jejunum wall measured 0.30 cm in width.

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

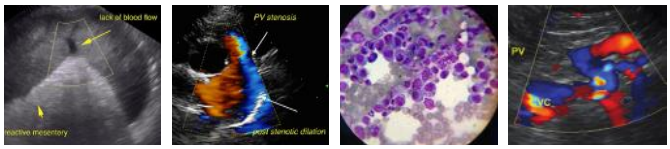
Pancreas

The pancreas was normal in size and contour with isoechoic to heterogeneous parenchyma compared to adjacent omentum. No signs of active inflammation or neoplasia.

Free Abdomen

Evidence of peripheral gallbladder inflammation and concurrent mild volume free fluid was present primarily in the cranial abdomen and around the gallbladder. No overt lymphadenopathy was present.

ULTRASONOGRAPHIC FINDINGS



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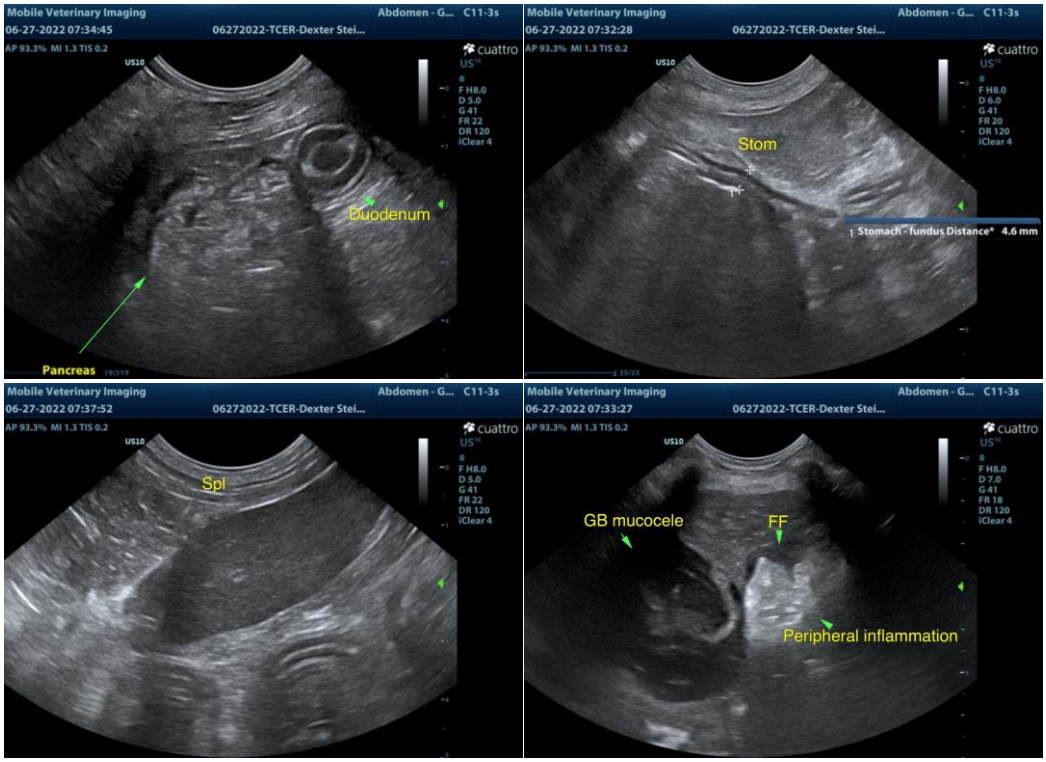
- Chronic mitral valve disease (ACVIM B1)
- Minor TR-estimated pulmonary pressure gradient not consistent with pulmonary hypertension
- Trace AI
- Gallbladder mucocele with peripheral inflammation and mild free fluid-consistent with bile peritonitis
- Concurrent to secondary hepatopathy
- Heterogeneous pancreas-nonspecific, patient variant, potential for low grade pancreatitis possible
- Suspect mild gastroduodenitis

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

The cause of the murmur is chronic degenerative valvular changes with secondary eccentric mitral valve insufficiency. The lack of left atrial enlargement implies that the risk of complication secondary to mitral valve insufficiency is low at this time and, without current clinical signs, indicates that medical therapy is not required however prognosis at this stage is highly variable. Conservative monitoring is recommended with a recheck echocardiogram in 6-12 months, sooner if clinical signs suggestive of heart disease develop. No anesthetic contraindications.

Referral for immediate cholecystectomy with assessment of clotting status and potential hepatic biopsies is recommended. This may be considered a surgical emergency. A very guarded prognosis given the likelihood of potential gallbladder rupture and bile peritonitis.

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.



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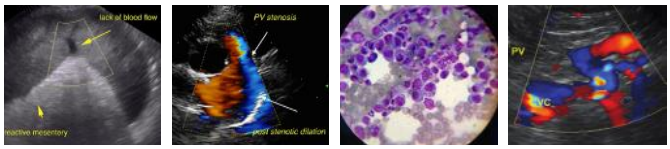

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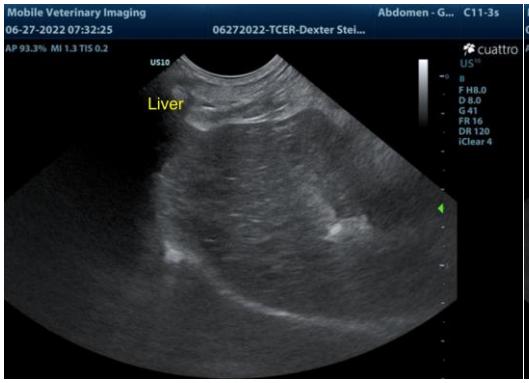
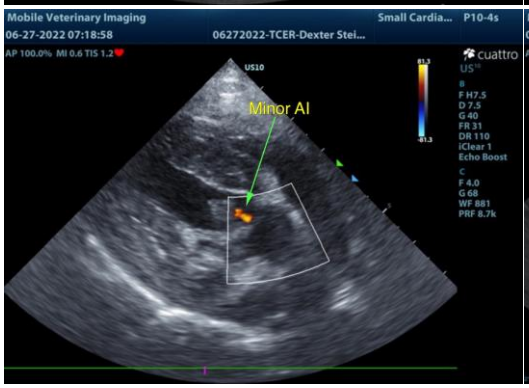
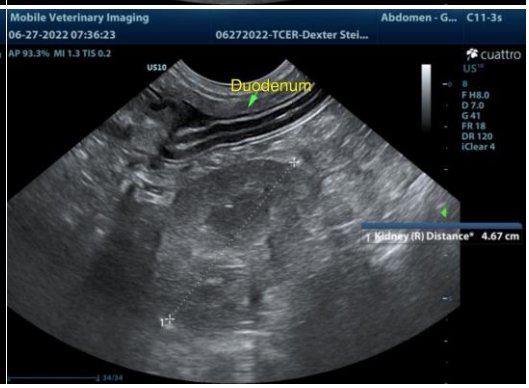
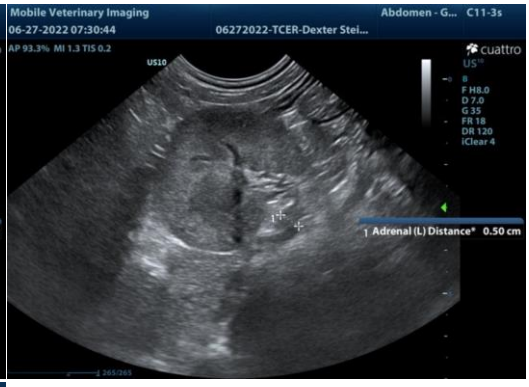
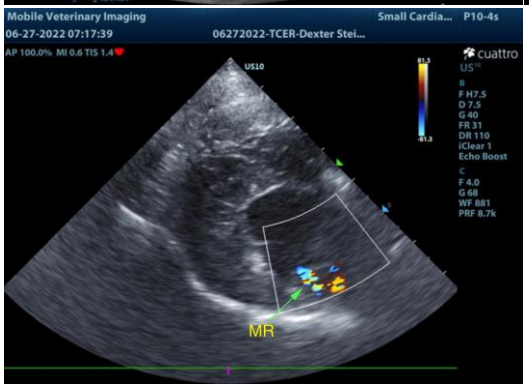




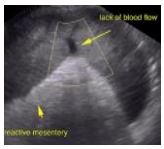


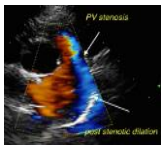


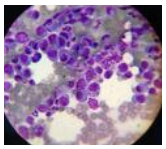
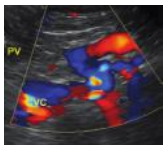


The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

Thank you for this referral. If the clinical or image interpretation does not parallel your findings or if I





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can be of any further assistance please contact me.

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

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