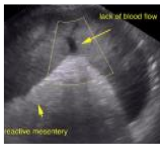
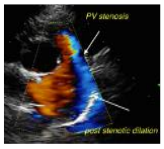
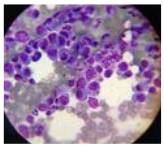
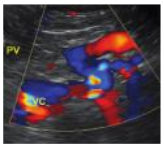
SonoPath
Clinical Sonography & Telecytology
EDUCATIONAL TELECONSULTATION SERVICES™

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

PATIENT

Ranger Robinson

SPECIES

Canine

BREED

Border Collie

SEX

MN

AGE

5 years

WEIGHT

21 kg

INTERPRETED BY

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

IMAGING PERFORMED BY

Dr. Callihan/ Pacific Crest Mobile Vet

HOSPITAL NAME

Pacific Crest Mobile

REFERRING VET

Dr. Boekenoogen/ Nooksack AH

INVOICE

14087

DATE

2/24/22

PRESENTING CLINICAL SIGNS

Appointment was made for abdominal ultrasound but rapid view heart looked dilated/poor contractility so owners consented to double cavity) 2/9/22 -nocturnal incontinence for ~ 4 mos, noted in pet's bed, no straining, normal stream -CBC showed marked reticulocytosis, normal HCT 43% -UA showed isosthenuria 1.017, pH 6, quiet sed 2/15: -Visit for Incontinence, possibly PU/PD -Brief AUS w/primary care showed no obvious stones or abnormalities with urinary bladder -Urine Culture negative -Reticulocytosis persists, CBC otherwise normal 2/21: CBC: -Reticulocytosis (reviewed by pathologist) -Dewormed with Panacur 2/24 Thoracic rads: Borderline cardiomegaly based on VHS, possible mild right atrial enlargement

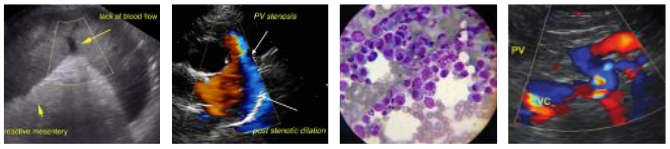
Abnormal PE/Chem/CBC/UA Results: Primary diagnostic issue has been persistent Reticulocytosis 500-600K/uL. (normal < 100K/uL) Total protein normal Fecal negative

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	5.0	--	NM	1.45	25	53.8	0.61
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	NM	1.0	0.63	--	3.9	3.97	--

Cardiac Presentation

The echocardiogram in this patient demonstrated normal **left atrial** size based on 3 separate methods of LA evaluation. The cranial and caudal **mitral** valve leaflets presented normal linear structure, extension in systole, and union in diastole with normal kinesis. Mild centralized MR was present on color doppler assessment. 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 subnormal and was 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. **Tricuspid** valvular assessment demonstrated adequate linear morphology and kinesis. Mild TR was present on color doppler assessment. The **right ventricle** was of normal size (1/3 diameter of LV), chordae structure,



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

PATIENT

Ranger Robinson

SPECIES

Canine

BREED

Border Collie

SEX

MN

AGE

5 years

WEIGHT

21 kg

INTERPRETED BY

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

IMAGING PERFORMED BY

Dr. Callihan/ Pacific Crest Mobile Vet

HOSPITAL NAME

Pacific Crest Mobile

REFERRING VET

Dr. Boekenoogen/ Nooksack AH

INVOICE

14087

DATE

2/24/22

myocardial echogenicity and thickness. **Pulmonary outflow** 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. The cranial **mediastinum and pericardial and extra-cardiac regions** were free of masses in the visible window.

Urinary System

The urinary bladder, trigone, cystourethral junction, and visible pelvic urethra 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.

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 evidence of pelvic dilation. The left kidney measured 6.6 cm in length. The right kidney measured 7.4 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 0.49 cm width at the caudal pole.

The right adrenal gland was uniform in size and contour with a uniformly hypoechoic parenchyma. The right adrenal gland measured 0.66 cm width at the caudal pole.

Spleen

The spleen exhibited generalized enlargement with 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 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 non-distended in size with thin walls and primarily anechoic luminal content. The cystic and common bile ducts were normal.

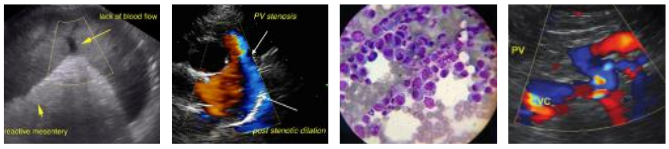
Gastrointestinal

The stomach presented intact wall layering with a normal wall layer ratio. The lumen of the stomach 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.

SonoPath
Clinical Sonography & Telecytology
EDUCATIONAL TELECONSULTATION SERVICES™



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

PATIENT

Ranger Robinson

SPECIES

Canine

BREED

Border Collie

SEX

MN

AGE

5 years

WEIGHT

21 kg

INTERPRETED BY

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

IMAGING PERFORMED BY

Dr. Callihan/ Pacific Crest Mobile Vet

HOSPITAL NAME

Pacific Crest Mobile

REFERRING VET

Dr. Boekenoogen/ Nooksack AH

INVOICE

14087

DATE

2/24/22

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 were evident.

Free Abdomen

No overt lymphadenopathy or peritoneal effusion was present.

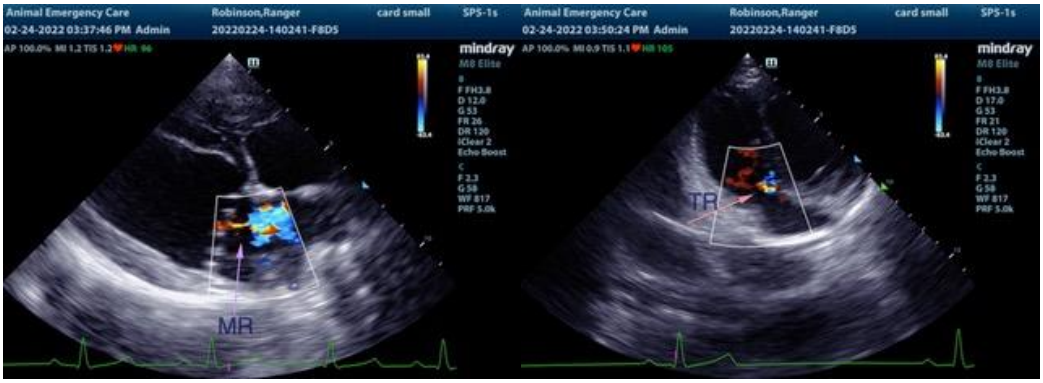
ULTRASONOGRAPHIC FINDINGS

- Structurally normal heart with LV hypocontractility
- Mild centralized MR
- Minor TR
- Nonspecific splenomegaly
- Otherwise, sonographically unremarkable abdomen

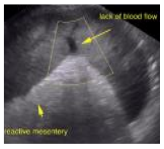
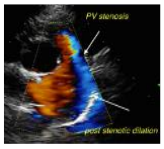
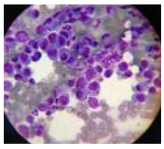
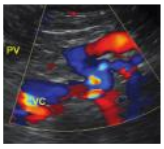
INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

The LV hypocontractility exhibited by this patient is nonspecific. Potential considerations may include some degree of depressed LV function owing to sedation, hypocontractility secondary to systemic or endocrine disease, such as hypothyroidism (if clinically applicable), potential athletic state (given the young age of the patient) or myocarditis. No overt evidence of myocardial neoplasia, while potential for emerging primary or secondary DCM cannot be definitively excluded. However, at this stage, DCM criteria was not met. Full diet history +/- troponin levels may be considered. If the patient is nonclinical, i.e., exhibiting exercise intolerance or other clinical signs suggestive of heart disease, cardiac medications are not specifically indicated. However, serial sonographic monitoring, ideally with minimal sedation, is recommended with initial recheck in 4-6 months, pending additional diagnostics, or sooner if clinical signs consistent with heart disease develop.

The splenomegaly in this patient is suspected to be owing to sedation without overt evidence of neoplastic criteria. Additional considerations may include patient variant, benign hyperplasia, hematopoiesis, hypersplenism, incidental splenitis, etc. If persistent splenomegaly when not sedated, and assuming normal clotting status, ultrasound guided FNA of the spleen, using a 25-gauge needle, for screening cytology, primarily to ensure only benign changes are present, could be considered.



SonoPath
Clinical Sonography & Telecytology
EDUCATIONAL TELECONSULTATION SERVICES™

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

PATIENT

Ranger Robinson

SPECIES

Canine

BREED

Border Collie

SEX

MN

AGE

5 years

WEIGHT

21 kg

INTERPRETED BY

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

IMAGING PERFORMED BY

Dr. Callihan/ Pacific Crest Mobile Vet

HOSPITAL NAME

Pacific Crest Mobile

REFERRING VET

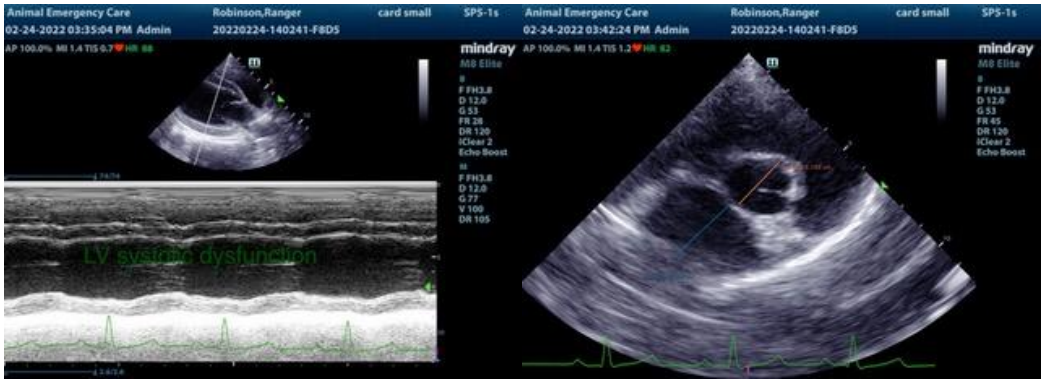
Dr. Boekenoogen/ Nooksack AH

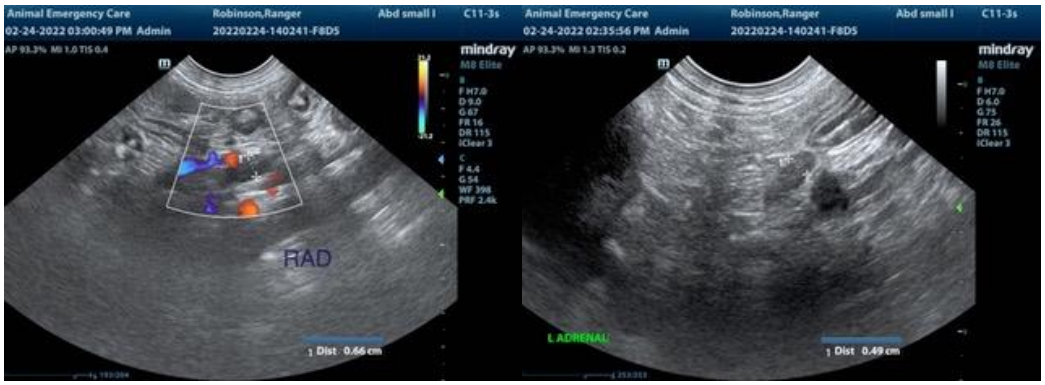
INVOICE

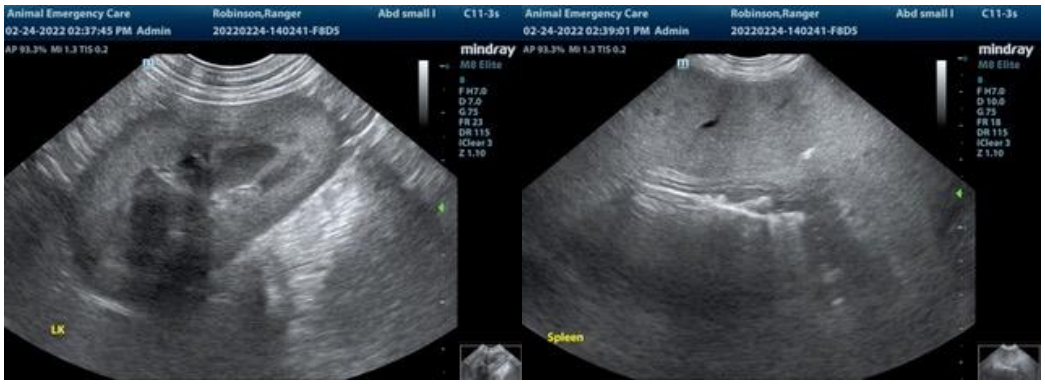
14087

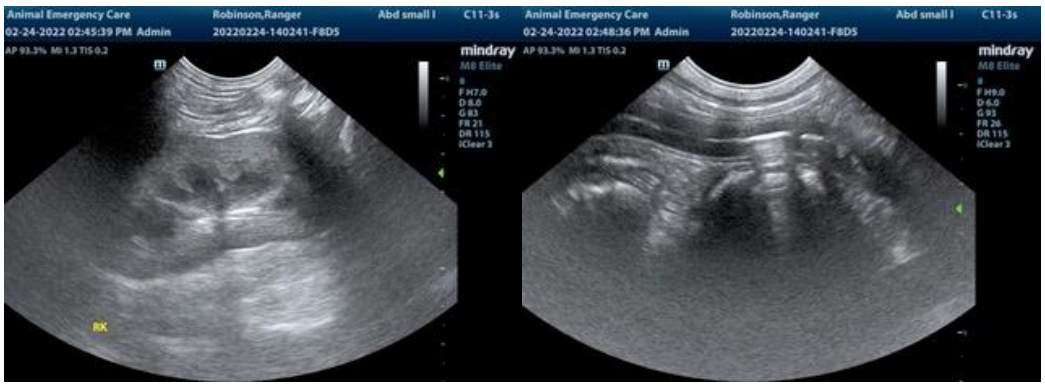
DATE

2/24/22

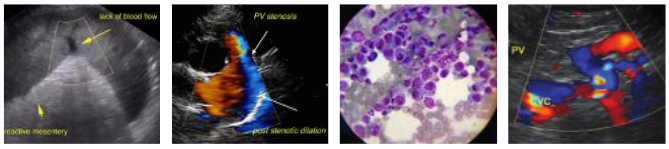








SonoPath
Clinical Sonography & Telecytology
EDUCATIONAL TELECONSULTATION SERVICES™



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

PATIENT

Ranger Robinson

SPECIES

Canine

BREED

Border Collie

SEX

MN

AGE

5 years

WEIGHT

21 kg

INTERPRETED BY

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

IMAGING PERFORMED BY

Dr. Callihan/ Pacific Crest Mobile Vet

HOSPITAL NAME

Pacific Crest Mobile

REFERRING VET

Dr. Boekenoogen/ Nooksack AH

INVOICE

14087

DATE

2/24/22

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