



PATIENT PRESENTING CLINICAL SIGNS

Ruby Coray History: Previous echo due to increased BNP MVD (possible early onset DMVD vs Valvular dysplasia), trace MR TVD (possible early onset DTVD vs Valvular dysplasia), Trace TR no PH Trace PI Recent Hx of GIT disease. coughing and hacking Previous Hx bronchopneumonia

SPECIES

Canine Abnormal PE/Chem/CBC/UA Results: CBC WNL, Chem WNL, Spec cPI 335 (n 0-200) Xrays NAF

BREED

Rotty

SEX

Spayed Female

AGE

3 Years 7 Months

WEIGHT

49 kg

INTERPRETED BY

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

IMAGING PERFORMED BY

Dr. Brian Barnes

HOSPITAL NAME

Westview VH

REFERRING VET

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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	--	--	NM	1.1	32	63.6	0.48
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	1.4	1.1	--	4.5	4.7	--

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. Previously noted, minor centralized MR was present. The **left ventricle** presented thicknesses with linear contour with minor static increased LV volume. The **myocardium** presented normal echogenicity without subjective evidence of significant fibrotic or ischemic disease. **Contractility** of the ventricular walls was adequate yet borderline subnormal as 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. Previously noted minor TR was present. The **right ventricle** was of normal size (1/3 diameter of LV), chordae structure, 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. Minor PV insufficiency, measuring 0.57 m/s in diastolic velocity was present. The cranial **mediastinum and pericardial and extra-cardiac regions** were free of masses in the visible window. No evidence of an arrhythmia.



PATIENT

Urinary System

Ruby Coray

The urinary bladder, trigone, cystourethral junction, and visible pelvic urethra to a depth of 3.0 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 were noted. Aortic trifurcation was normal.

SPECIES

Canine

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 7.2 cm in length. The right kidney measured 8.0 cm in length.

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Adrenal Glands

The left adrenal gland was uniform in size and contour with a uniformly hypoechoic parenchyma. The left adrenal gland measured 2.2 cm in length x 0.45 cm width at the caudal pole.

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The right adrenal gland was uniform in size and contour with a uniformly hypoechoic parenchyma. The right adrenal gland measured 3.1 cm in length x 0.73 cm width at the caudal pole.

Spleen

WEIGHT

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The spleen was normal in size and contour with primarily maintained finely textured homogeneous parenchyma. Focal to intermittent discreet non-expansive hypoechoic nodules were noted in the caudal spleen, an example measured 1.0 cm in diameter.

Liver

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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.

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Gastrointestinal

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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 gastric body wall measured 0.41 cm.

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. The duodenum wall measured 0.47 cm. The jejunum wall measured 0.35 cm.

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

Pancreas

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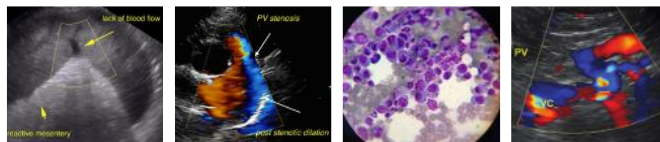
The parenchyma of the left limb, body and right limb of the pancreas presented isoechoic to the adjacent omental fat. A normal curvilinear capsule contour of the pancreas was present. The visible pancreatic duct was normal. No signs of active inflammation or neoplastic disease was evident.

Free Abdomen

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No overt lymphadenopathy or peritoneal effusion was present.



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ULTRASONOGRAPHIC FINDINGS

- Overtly normal cardiac structure with borderline LV hypocontractility
- Minor static MR/TR/PV insufficiency
- Focal to intermittent discreet to non-expansive splenic nodules- nonspecific, likely areas of subtle lymphoid hyperplasia or hematopoiesis. Potential for emerging neoplastic criteria is considered an unlikely differential diagnosis.
- Sonographically unremarkable gastrointestinal tract

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

The overall heart presented essentially static compared to the previous echocardiogram without evidence of progressive abnormalities. The fractional shortening, compared to the previous, study was similar and borderline subnormal, which is nonspecific. This may be seen as a patient variant, athletic state or as previously mentioned, potential for emerging cardiac disease or secondary to metabolic disease. If not recently done, correlation with full lab work could be considered. No indication for cardiac medications, however, as previously recommended, sonographic monitoring is advised. Recheck echocardiogram is suggested in 6-9 months or sooner if clinical signs, suggestive of heart disease, arise. Without evidence of clinical pulmonary hypertension or left or right heart chamber enlargement, the respiratory signs in this patient are likely noncardiogenic in origin.

Sonographic monitoring of the splenic nodules would be appropriate.

No overt evidence of gastrointestinal mural changes. Subjective potential for mildly prominent to echogenic segmental intestinal submucosa which may be seen in patients with underlying inflammatory enteropathy or IBD possible yet not definitive. Alternatively, dietary intolerance/food hypersensitivity may be playing a role in this patient's gastrointestinal signs. Empirically, a limited antigen or hydrolyzed diet trial with potential long term dietary therapy, prophylactic deworming (Panacur 50 mg/kg SID x 5 consecutive days with repeat protocol in 3 weeks even if fecal testing is negative), high colony count probiotic (Provable or Visbiome), antibiotic trial and as needed gastrointestinal support with assessment of clinical response may prove beneficial. Intestinal biopsies may be indicated if GI signs continue despite empirical therapy. Although, considered unlikely, adrenal screening with resting cortisol to rule out occult Addisons disease may be considered.





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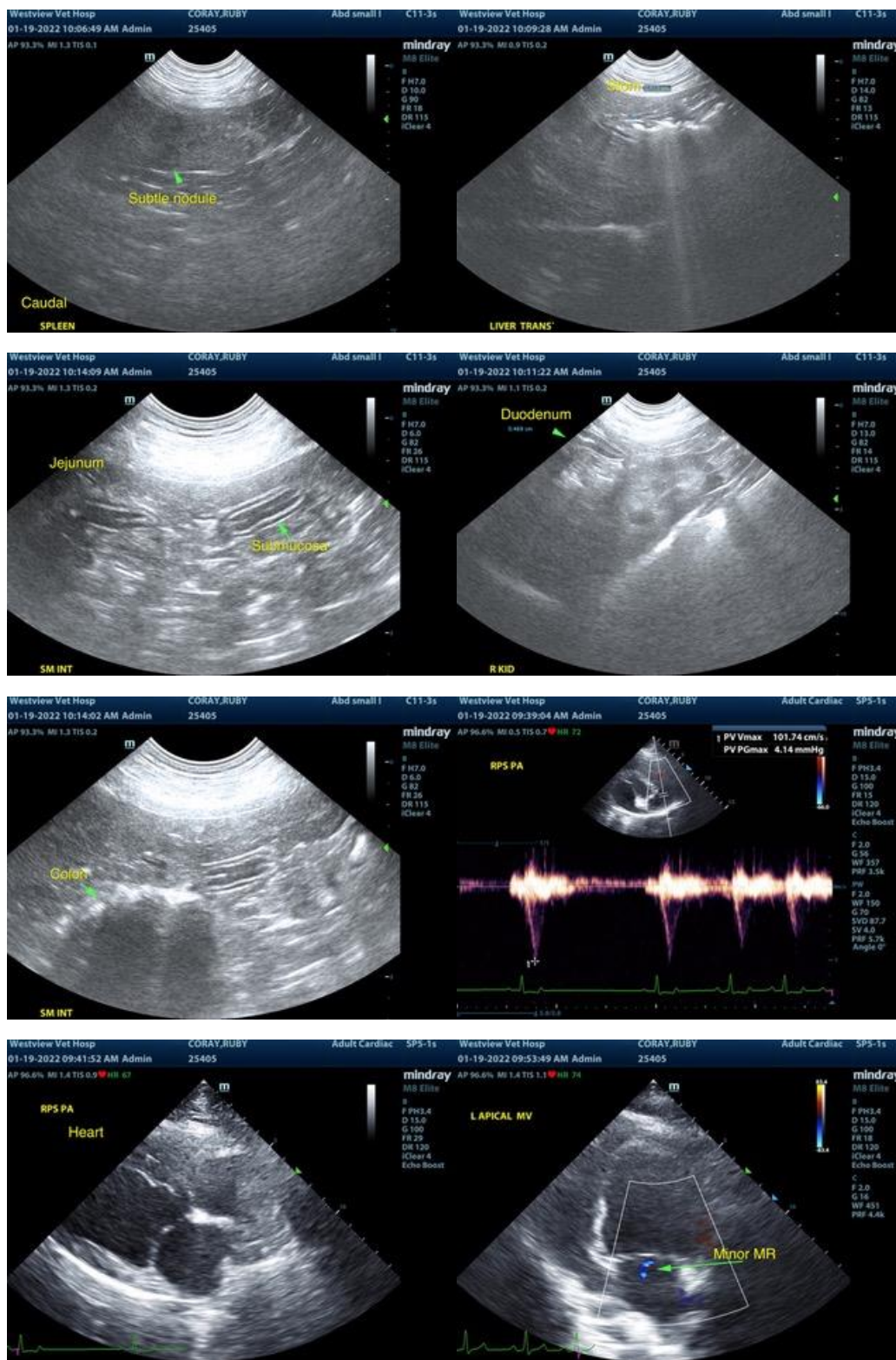
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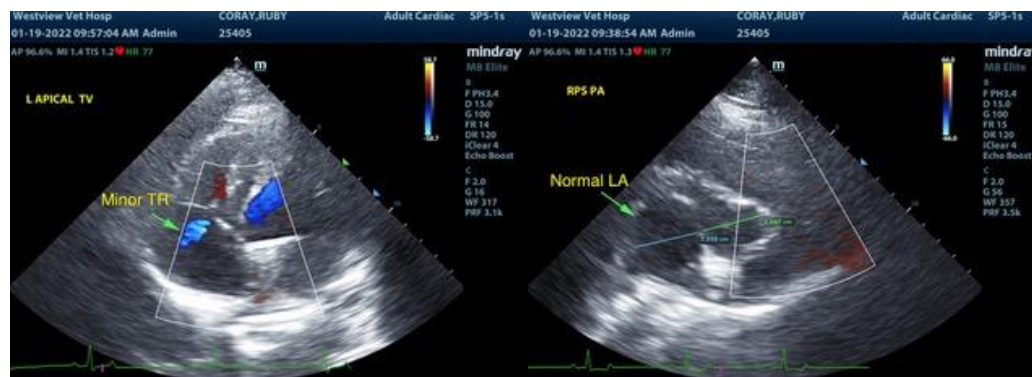
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The information and recommendations provided are based on the images presented by the referring veterinarian. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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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