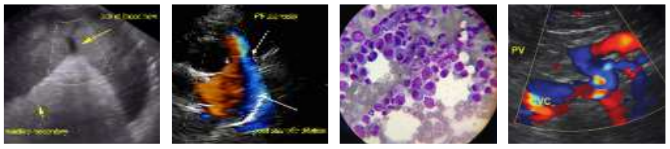
SonoPath
Clinical Sonography & Telecytology
EDUCATIONAL TELECONSULTATION SERVICES™



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

PATIENT

Petri Sparks

SPECIES

Canine

BREED

Chihuahua

SEX

MN

AGE

13 years 6 months

WEIGHT

3.08 kg

INTERPRETED BY

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

IMAGING PERFORMED BY

Dr. Brian Barnes

HOSPITAL NAME

Westview VH

REFERRING VET

Dr. Brian Barnes

INVOICE

13172

DATE

1/26/22

PRESENTING CLINICAL SIGNS

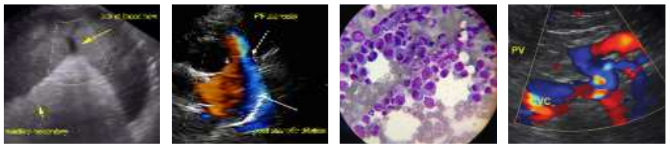
Coughing and racing heart, thin, history of tummy upsets
Abnormal PE/Chem/CBC/UA Results: Grade 2-3 systolic heart murmur, PMI Left hemithorax 1. Mild left-sided cardiomegaly likely due to valvular endocardiosis. There is no evidence of heart failure. 2. Dynamic tracheal and mainstem bronchial collapse. This is suspected to be the primary cause of the cough. Left atrial enlargement could be exacerbating this condition resulting in compression of the mainstem bronchi. 3. Suspect enteritis due to nonspecific etiologies. Given the clinical history of inability to put on weight the possibility of inflammatory bowel disease or lymphangiectasia could also result in this radiographic change. Blood work pending

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	4.7	2.3	1.62	1.9	48.8	82.1	0.25
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	1.2	1.0		2.9	2.5	

Cardiac Presentation

The echocardiogram in this patient demonstrated moderately enlarged **left atrial** size based on 3 different LA measurement methods. Mild deviation of the interatrial septum towards the right atrium suggestive of mild elevated left atrial pressure was present. The cranial and caudal **mitral** valve leaflets presented vegetative thickening consistent with endocardiosis. Mild prolapse of the septal mitral valve leaflet was present. No evidence of chordae tendineae rupture was noted. Doppler indicated secondary eccentric moderate insufficiency. The **left ventricle** presented thicknesses with linear contour with mild subjective increased left ventricle volume. 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 mild thickening with mild to moderate Insufficiency on color doppler assessment. The **right ventricle** was



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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 2.0 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.

No overt pathology associated with the residual prostate 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 3.2 cm in length. The right kidney measured 3.4 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 0.52 cm width at the caudal pole and 0.55 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 0.50 cm width at the caudal pole and 0.46 cm width at the cranial pole.

Spleen

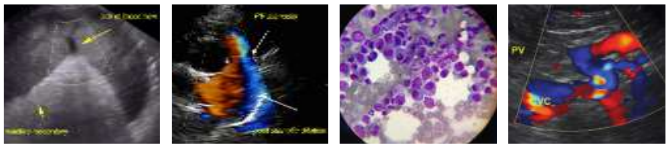
The spleen exhibited primarily finely textured parenchyma which was hyperechoic to the liver and renal cortical parenchyma. Mild generalized parenchyma heterogeneity was present without evidence of nodular changes. The capsule was smooth and regular without apparent expansion. The splenic vasculature at the hilus was normal in volume with no evidence of congestion or thrombosis. The parenchymal heterogeneity is likely consistent with benign changes such as extramedullary hematopoiesis or age-related remodeling with minor potential for inflammatory or neoplastic disease.

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 yet subjective mild prominent wall layering with a mild amount of retained nonshadowing ingesta / chyme present in the gastric lumen. The ventral gastric body wall width measured 0.35 cm.



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The small intestine presented intact wall layering and primarily maintained a 1:3 muscularis/mucosa ratio with Intermittent duodenojejunal mucosal speckling. The duodenum wall width measured 0.36 cm. The jejunum wall width measured 0.30 cm.

Normal visible colon wall layers were present with subjective semi-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 were evident.

Free Abdomen

No overt lymphadenopathy or peritoneal effusion was present.

ULTRASONOGRAPHIC FINDINGS

Primary Findings

- Chronic mitral valve disease (ACVIM B2) with mild septal mitral valve leaflet prolapse
- Mild to moderate TR - estimated pulmonary pressure gradient (approximately 26 mmHg), consistent with mild elevated pulmonary pressure yet not overtly indicative of clinical pulmonary hypertension
- Mild gastroenteritis pattern
- Bilateral mild chronic renal changes

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

The moderate LAE and mild increased LV volume indicate that the risk of complication secondary to MVD is elevated. Pimobendan 0.3 mg/kg PO BID is warranted at this stage as this medication may help prolong cardiac changes associated with MVD. No indication for diuretic therapy given the lack of evidence of CHF. Hydrocodone at an appropriate dose may prove beneficial. Recheck echocardiogram is suggested in 6 months, sooner If clinical signs suggestive of heart disease arise.

Dietary intolerance / food hypersensitivity, mild chronic gastroenteritis or structurally insignificant Inflammatory bowel may be possible. Given potential decreased body condition, a GI panel to include PLI/TLI/Cobalamin/Folate may be considered. 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 (Proviable 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.

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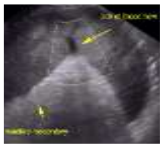
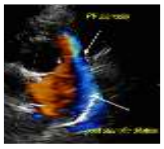
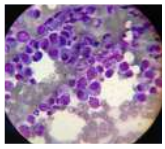
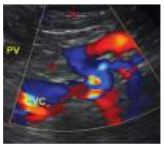

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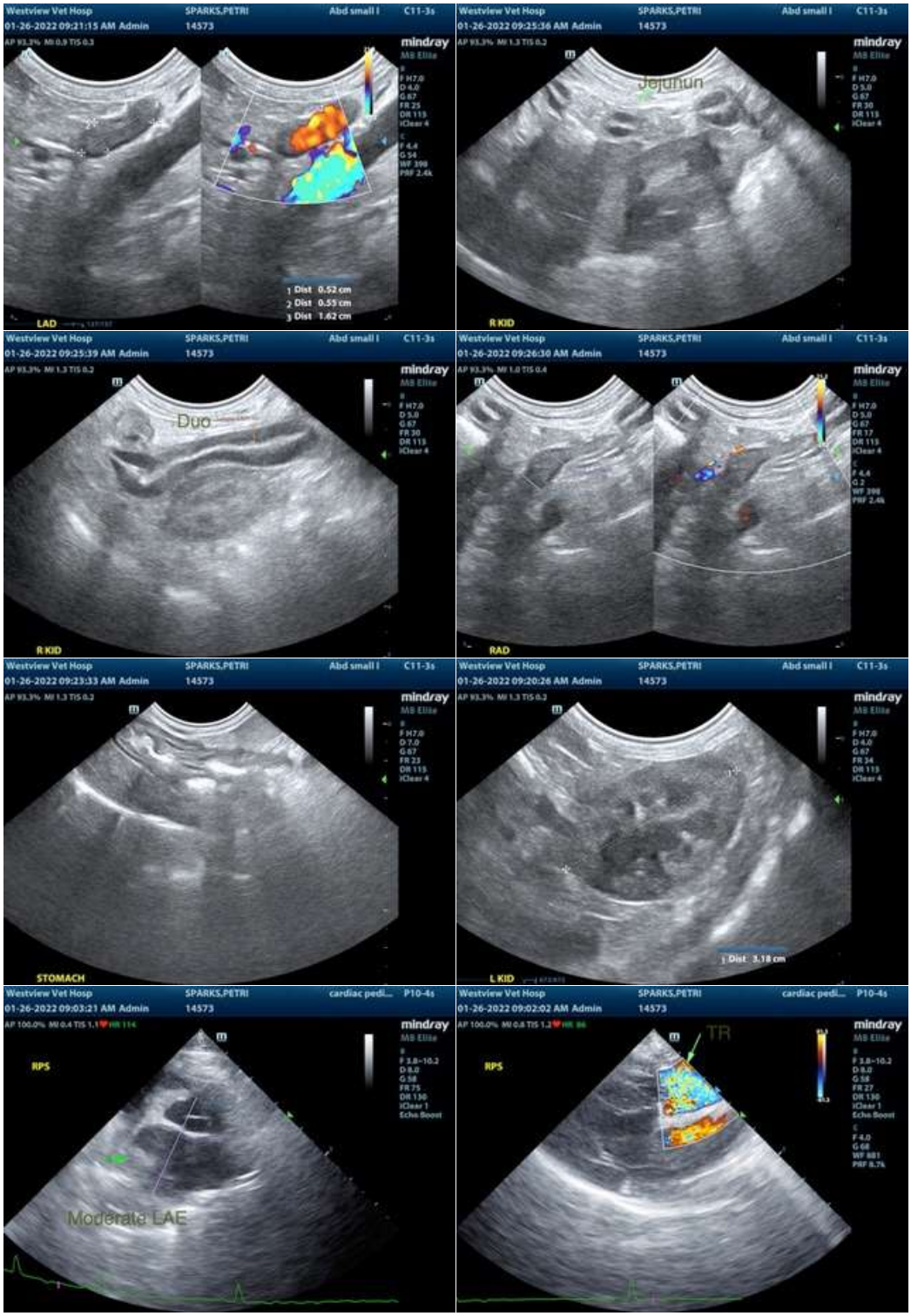

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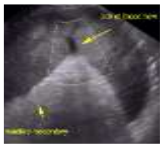
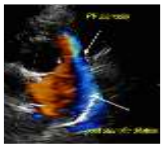
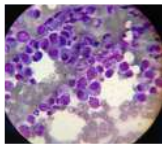
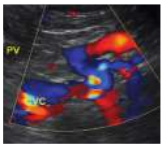

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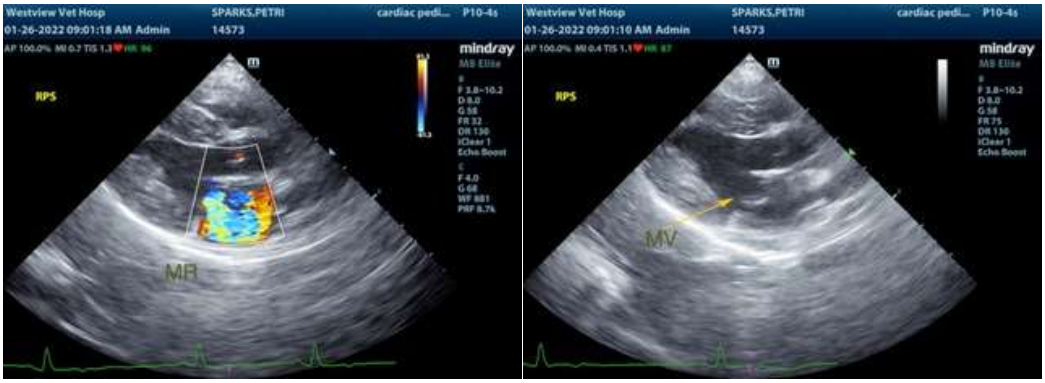

The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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)
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