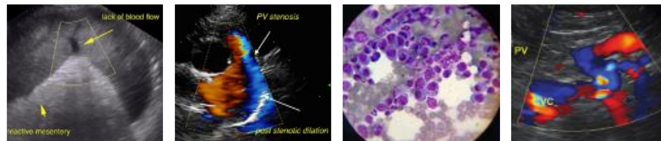


SonoPath.com
1-800-838-4268 info@sonopath.com

PATIENT

Jennie Cox

SPECIES

Canine

BREED

Hound Mix

SEX

F/S

AGE

11 years

WEIGHT

57

INTERPRETED BY

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

IMAGING PERFORMED BY

Tasha

HOSPITAL NAME

DILLSBURG VC

REFERRING VET

Dr. Pryor

INVOICE

16285

DATE

2/24/23

PRESENTING CLINICAL SIGNS

murmur
Abnormal PE/Chem/CBC/UA Results: ALKP 2100, ALT 152, anemia, WBC

ULTRASONOGRAPHIC EXAMINATION OF THE HEART & ABDOMEN

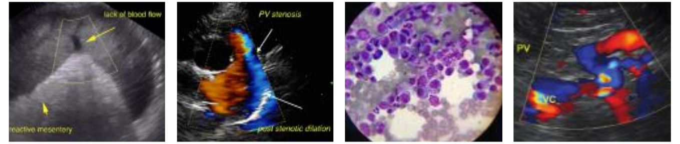
CANINE CARDIAC PARAMETERS	MR VMAX (m/s)	TR VMAX (m/s)	LA/AO (Boon method)	LA/AO (Heart Base; Swe)	FS (%)	EF (%)	EPSS (cm)
NORMAL PARAMETER	4.5-5.5	<2.7	1.3	<1.3	28-40	40-100	<0.6
PATIENT				1.1	35	70	0.3
CANINE CARDIAC PARAMETERS	**HR** (BPM)	**AV VMAX** (m/s)	**PV MAX** (m/s)	**BODY WEIGHT** (kg)	**LA** 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	MM	NM	NM		3.5	3.5	

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. The **left ventricle** presented normal 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. **Tricuspid** valvular assessment demonstrated adequate linear morphology and kinesis. 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. 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 to a depth of 3.0 cm exhibited normal thickness and tone. Anechoic urine was present in the lumen with no uroliths or



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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 5.2 cm in length. The right kidney measured 5.5 cm length.

Adrenal Glands

The left and right adrenal glands were not definitively visualized.

Spleen

The spleen was moderate to variably enlarged exhibiting asymmetrical lateral and medial capsule contour with generalized nonuniform to heterogeneous parenchyma. An ill-defined nodular mass was noted in the subjective cranial spleen measuring approximately 6.0-7.0 cm in diameter. Concurrent, well-demarcated, hyperechoic nodule was also present in the subjective mid to caudal spleen without associated capsule distortion measuring 2.4 cm in diameter. Overtly normal splenic vascularity was noted.

Liver/ Gallbladder

The liver was enlarged in size with areas of capsule asymmetry. The liver exhibited variable to mixed echogenic parenchyma exhibiting moderate coarse echotexture. Discrete, variably echogenic, parenchyma nodular changes and intermittent cortical cysts were present. Normal hepatic vascular volume was noted. The gallbladder was non-distended in size exhibiting mildly thickened to hyperechoic gallbladder walls containing anechoic content with minor, hyperechoic gallbladder debris. No evidence of post-hepatic obstructive criteria.

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.

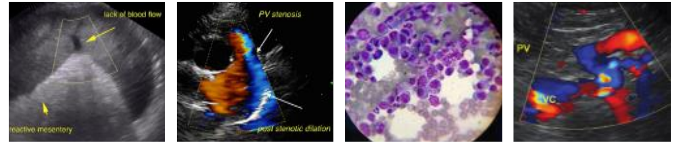
Normal visible colon wall layers were present with apparent formed feces in lumen.

Pancreas

The 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 omental masses, lymphadenopathy, or evidence of peritoneal effusion were noted.



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ULTRASONOGRAPHIC FINDINGS

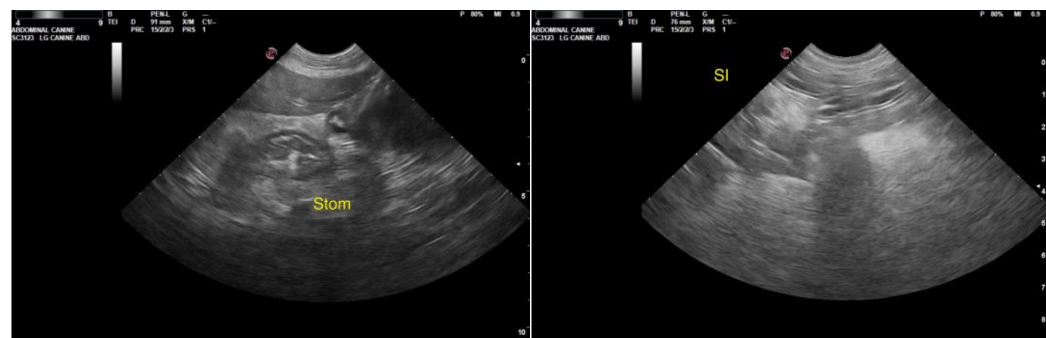
- Overtly normal cardiac structure and function
- Variably enlarged heterogeneous to nodular spleen with ill-defined mass lesion
- Hepatopathy exhibiting nonuniform nodular to cystic parenchyma
- Suspect chronic cholecystitis
- Mild chronic renal changes

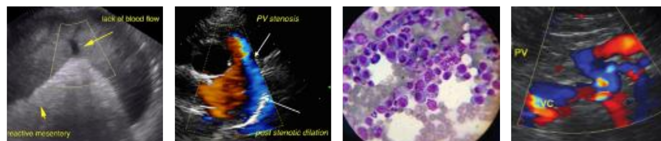
INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

A definitive source of the reported murmur was not obvious, yet may potentially be a physiologic / flow murmur, possibly secondary to anemia. The hemodynamic effects of the murmur appear to be low, given the lack of evidence of left or right heart chamber enlargement. No indication for cardiac medications. No overt evidence of cardiac / pericardial masses or pericardial effusion.

The hepatosplenic presentation was nonspecific with benign vs. neoplastic hepatosplenic etiologies possible. Concern for splenic neoplasia i.e., sarcoma or other is favored, although significant splenic hyperplasia, hematopoiesis, myelolipomas, splenitis, or similar are possible. Considerations for the liver may include chronic benign hepatopathy i.e., vacuolar hepatopathy, nonspecific chronic hepatitis, hyperplasia, hematopoiesis, and fibrosis with potential for infiltrative or metastatic neoplasia.

Assuming normal clotting status, screening hepatic +/- splenic FNA cytology, using a 25-gauge needle, could be considered for further clarification. Three-view chest radiographs are recommended. If no overt evidence of neoplastic criteria on hepatic cytology, splenectomy with hepatic biopsies, assuming normal clotting status, could be considered. However, a very guarded prognosis is indicated.





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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