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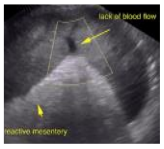
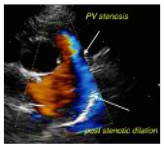
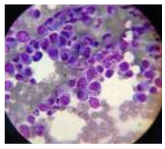
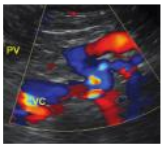

SonoPath.com
1-800-838-4268 info@sonopath.com

PATIENT

Jack Bruno

SPECIES

Canine

BREED

Golden Retriever

SEX

MN

AGE

11 years

WEIGHT

89 lbs.

INTERPRETED BY

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

IMAGING PERFORMED BY

Kelly Vazquez

HOSPITAL NAME

Ramapo Valley AH

REFERRING VET

Dr. Katara

INVOICE

14115

DATE

6/16/22

PRESENTING CLINICAL SIGNS

ADR, suspect IMHA, want to R/O neoplasia, decreased appetite, anemia. Current meds: Cerenia, occasional carprofen.
Abnormal PE/Chem/CBC/UA Results: 6/13/22: RBC 4.3, HGB 9.2, HCT 28, PLTs 83 (clumping adequate estimate), neuts. 1315, lymphs 429, SDMA 19.1, reticulocytes 11.1, Abs. Reticulocytes 474400.

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	5.0			1.3	35.6	68.5	0.47
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	91	1.0	0.9		4.9	4.5	

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. Mild MR was present on color doppler. 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. 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). Trace pulmonic insufficiency was present on doppler. No visible **pericardial** or overt free pleura fluid was noted. No obvious masses in the area of the right atrium / auricle, pericardial, or extra cardiac regions were visualized.

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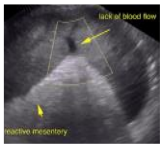

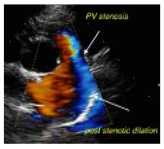

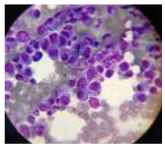
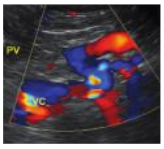

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Urinary System

The urinary bladder, trigone, and cystourethral junction 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.

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 6.8 cm in length. The right kidney measured 7.3 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 2.5 cm length x 0.51 cm width at the caudal pole. No overt pathology was noted in the area of the right adrenal gland.

Spleen

A large, expansive mass involving the spleen with secondary asymmetrical capsule expansion and disruption was present and measured approximately 11.0 cm in diameter. The parenchyma of the mass was heterogeneous to mixed echogenic with areas of cavitation. The non-affected spleen exhibited mild parenchyma heterogeneity with separate, mildly expansive hypoechoic nodules. An example of a splenic nodule measured 1.4 cm in diameter. The separate splenic nodules appeared to distort the splenic capsule. Normal splenic vascularity was noted. Regional omental inflammation was present around the mass.

Liver/ Gallbladder

The liver was subjectively normal in size, structure, and contour. The liver parenchyma was mildly nonuniform and hypoechoic to the spleen with a moderate coarse echotexture and subjective mild to benign parenchymal remodeling. A solitary primarily uniform mildly hyperechoic nodule with subtle associated symmetrical hepatic capsule distortion was present in the ventral liver measuring 2.9 cm in diameter. 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 contained mild nonshadowing ingesta most consistent with post prandial presentation without 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.

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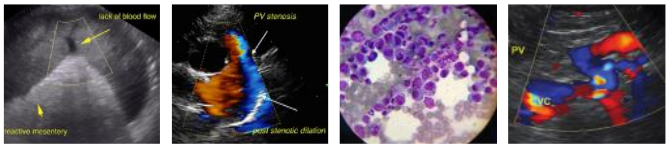

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Pancreas

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

Regional perisplenic nonuniform hyperechoic mesentery was present. No overt lymphadenopathy was evident. Moderate volume peritoneal free fluid exhibiting mild echogenic changes was noted.

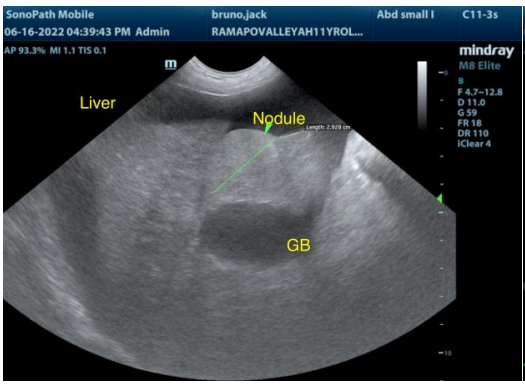
ULTRASONOGRAPHIC FINDINGS

- Overtly normal cardiac structure and function
- Mild MR
- Tract pulmonic insufficiency
- Large nonhomogeneous to cavitated splenic mass, concurrent separate mildly expansive hypoechoic splenic nodules - consistent with malignant neoplasia, sarcoma likely
- Moderate volume peritoneal effusion exhibiting mild echogenic changes - consistent with hemoabdomen
- Hepatic parenchymal remodeling with nonspecific mildly intraparenchymal expansive nodule

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

Confirmed large, nonhomogeneous to cavitated splenic mass and secondary hemoabdomen.

The solitary hepatic nodule was nonspecific with several etiologies including nodular / regenerative hyperplasia, lipogranuloma, or metastatic disease. Obvious evidence of cardiac or pericardial metastasis was not definitively visualized. However, given the likelihood of malignant splenic neoplasia and likely sarcoma, non-sonographically evident or micrometastasis with potential for omental seeding must be considered. Assuming no evidence of thoracic pathology on three view chest radiographs, splenectomy with gross inspection of the liver and/or biopsy of the hepatic nodule could be considered. However, a very guarded to unfavorable long-term prognosis is likely indicated.



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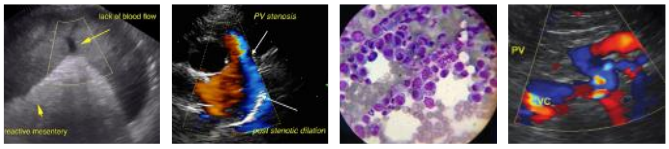

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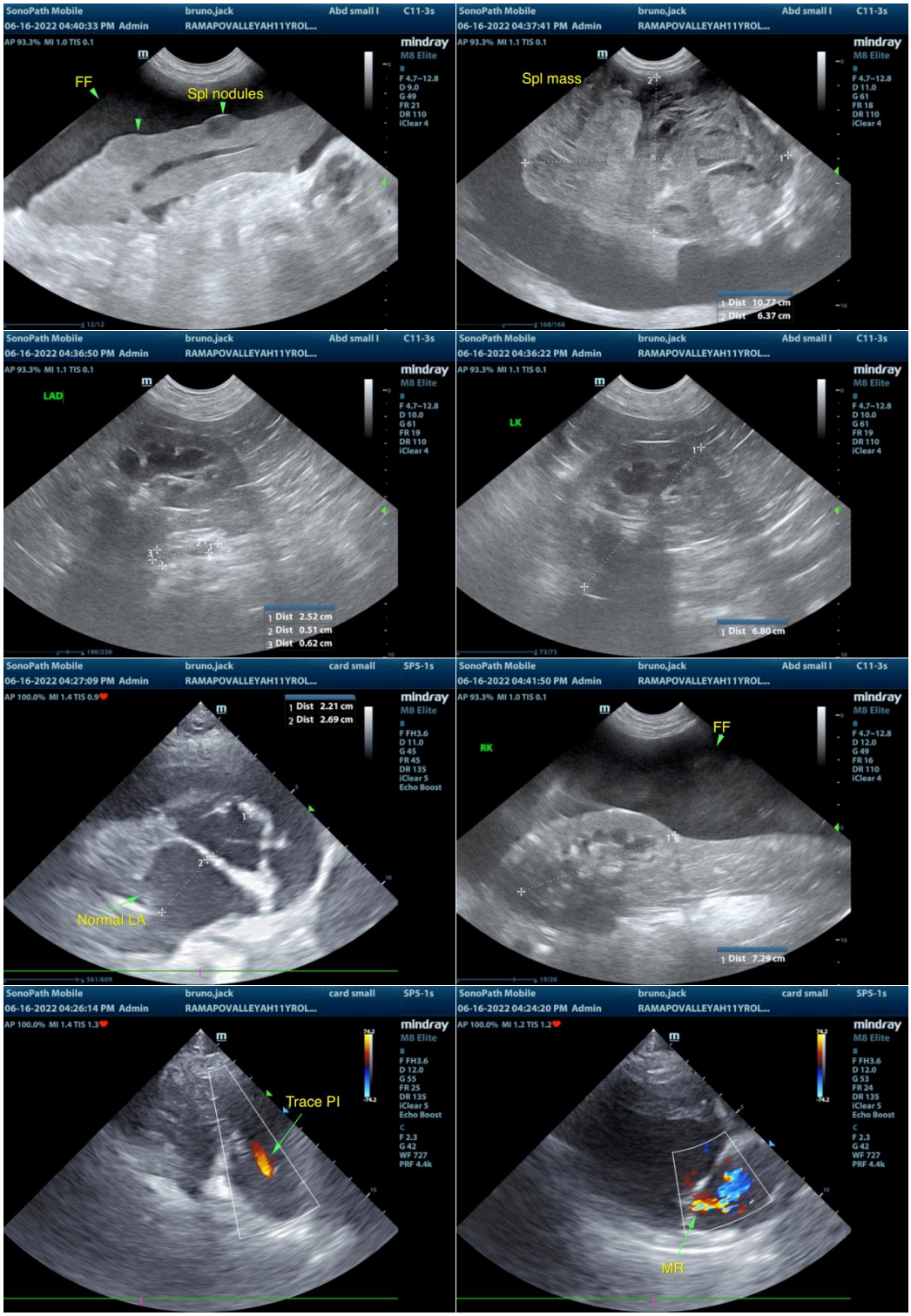

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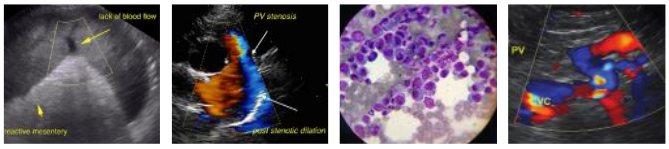

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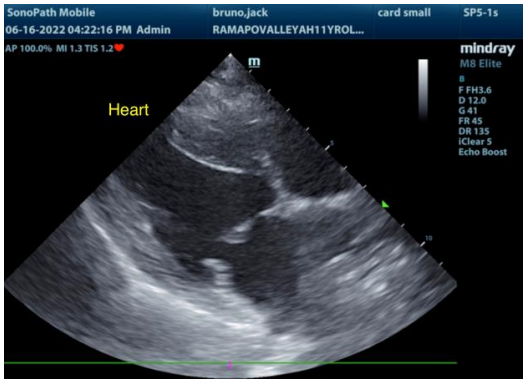

The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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)
info@SonoPath.com