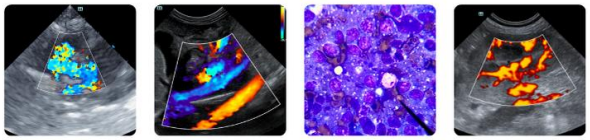

PATIENT

Sammie Buthold

SPECIES

Canine

BREED

Lab Mix

SEX

FS

AGE

11Y

WEIGHT

79.8lbs

INTERPRETED BY

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

IMAGING PERFORMED BY

Dr. Kicker

HOSPITAL NAME

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PRESENTING CLINICAL SIGNS

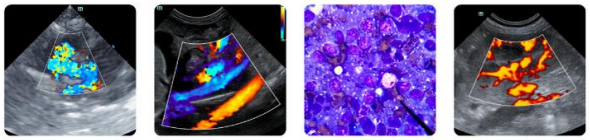
_Presented for Echo because of elevated BNP [950 over 0-900pmol/L] associated with historic III/VI murmur. On presentation more resent history was revealed that Sammie was seen at emergency 4 days ago for swelling of the left hind limb. The dog was put on cefpodoxime, carprofen with little to no improvement. _
Abnormal PE/Chem/CBC/UA Results: _On exam Sammie has a III/VI systolic murmur, clear lung sounds, normal respiratory rate and effort. Abdominal palpation is unremarkable -soft, non-painful, no palpable masses or distension. The left hind limb is diffusely edematous with pitting edema from the level of the pelvis distally the entire length of the limb. The leg is painful on palpation with most severe pain elicited on palpation of the semimembranous muscles. There is ecchymosis in the left inguinum. Right hind is normal. High concern for neoplastic vs thrombotic disease. Recommend referral for CT but performing radiographs and US as staging to more advanced imaging. _

ULTRASONOGRAPHIC EXAMINATION OF THE HEART & ABDOMEN

CANINE CARDIAC PARAMETERS	MR VMAX (m/s)	TR VMAX (m/s)	LA/AO (M-mode)	LA/AO (Heart Base; Swe)	FS (%)	EF (%)	EPSS (cm)
NORMAL PARAMETER	4.5-5.5	<2.7	1.3	Up to 1.6	28-40	40-100	<0.6
PATIENT			NM	1.5	35	68	0.25
CANINE CARDIAC PARAMETERS	**HR** (BPM)	**AV VMAX** (m/s)	**PV MAX** (m/s)	**BODY WEIGHT** (lbs)	**LAD** LA MAX 4 Chamber	**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	NM	1.0	0.6	79.8	4.4	4.3	

Cardiac Presentation

The echocardiogram in this patient demonstrated normal **left atrial** size based on 2 different LA measurement methods. The cranial and caudal **mitral** valve leaflets presented mild thickening consistent with mild degenerative change/endocardiosis. Doppler indicated mild to moderate centralized to eccentric MR. The **leftventricle** 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 or chamber overload. **Tricuspid** valvular assessment demonstrated adequate linear morphology. The **right ventricle** was 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



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pericardial or free pleura fluid was noted. No echographically detectable evidence of cardiac / pericardial tumors was visible. No evidence of arrythmia.

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 evidence of urine or lumen sediment, mineral, or calculi. The ureteral papillae were normal. The ureters were not visible which is normal. No evidence of inflammatory or neoplastic changes was noted.

No evidence of medial iliac or sublumbar lymphadenopathy or masses. No overt distal aortic thrombus.

Normal size and margination was 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 6.5 cm in length. The right kidney measured 6.9 cm in length.

Adrenal Glands

The left and right adrenal glands were not definitively visualized.

Spleen

The spleen exhibited a subjectively normal size with areas of mild asymmetrical capsule contour and generalized mild heterogeneous splenic parenchyma exhibiting at least two visualized, non-capsule deforming, potentially cavitated, nonhomogeneous splenic nodules. An example of a splenic nodule measured 2.4 cm in diameter. The splenic vasculature at the hilus was normal in volume with no evidence of congestion or thrombosis.

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 vascular volume was normal and without 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 without evidence of retained ingesta, fluid, 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.

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Free Abdomen

No overt lymphadenopathy or peritoneal effusion was present.

ULTRASONOGRAPHIC FINDINGS

- Normal cardiac structure/function with compensated mitral valve insufficiency (B1).
- Heterogeneous spleen with nonhomogeneous cystic to potentially micro cavitated nodules.
- Sonographically unremarkable normal volume liver.
- Age related renal changes.
- Overtly normal area of the distal aorta/iliac trifurcation.

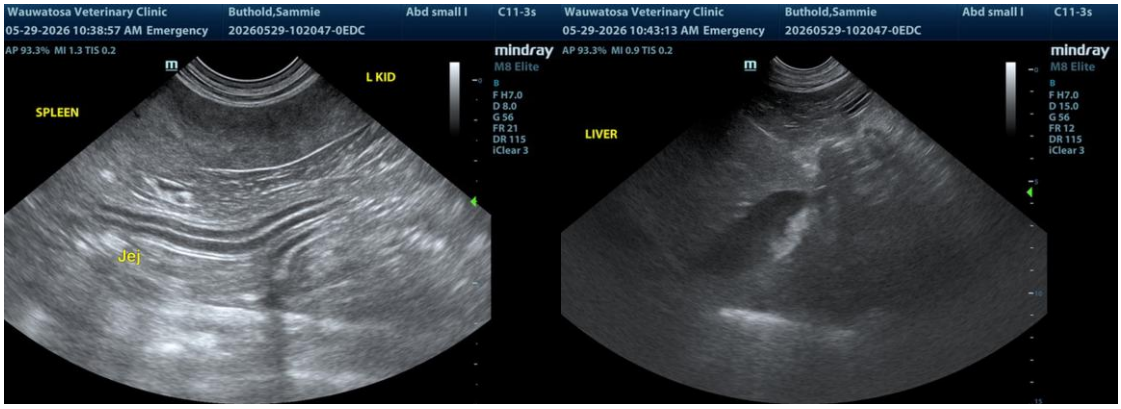
INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

The hemodynamic effects of the MR appear low at this stage given no evidence of left cardiac chamber enlargement. No additional clinical issues such as pulmonary hypertension, LV systolic dysfunction, or arrythmia as a potential contributing factor to the thrombotic episode. No indication for cardia medications. Cardiac anesthetic risk is considered mild. If required, the following protocol is recommended:

Suggested anesthetic protocol may Ie opioid or Benzodiazepine pre-med, induction with Propofol or Alfaxalone, and appropriate gas anesthesia with avoidance of alpha 2 agonists.

The overall spleen and splenic nodules were nonspecific and with considerations including hyperplasia, hematopoiesis, hematomas, inflammation, or primary vs metastatic splenic neoplasia. Further assessment may include, assuming normal clotting status and using a 25-gauge needle, splenic parenchyma and nodule FNA cytology.

No obvious evidence of distal aortic thrombus or caudal abdomen pathology as a contributing factor to the clinical history.



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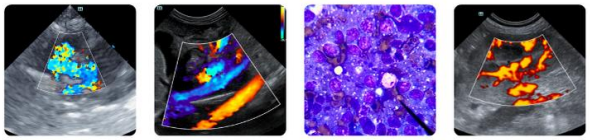

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Educational Teleconsultation Services™

SonoPath.com info@sonopath.com 1.800.838.4268

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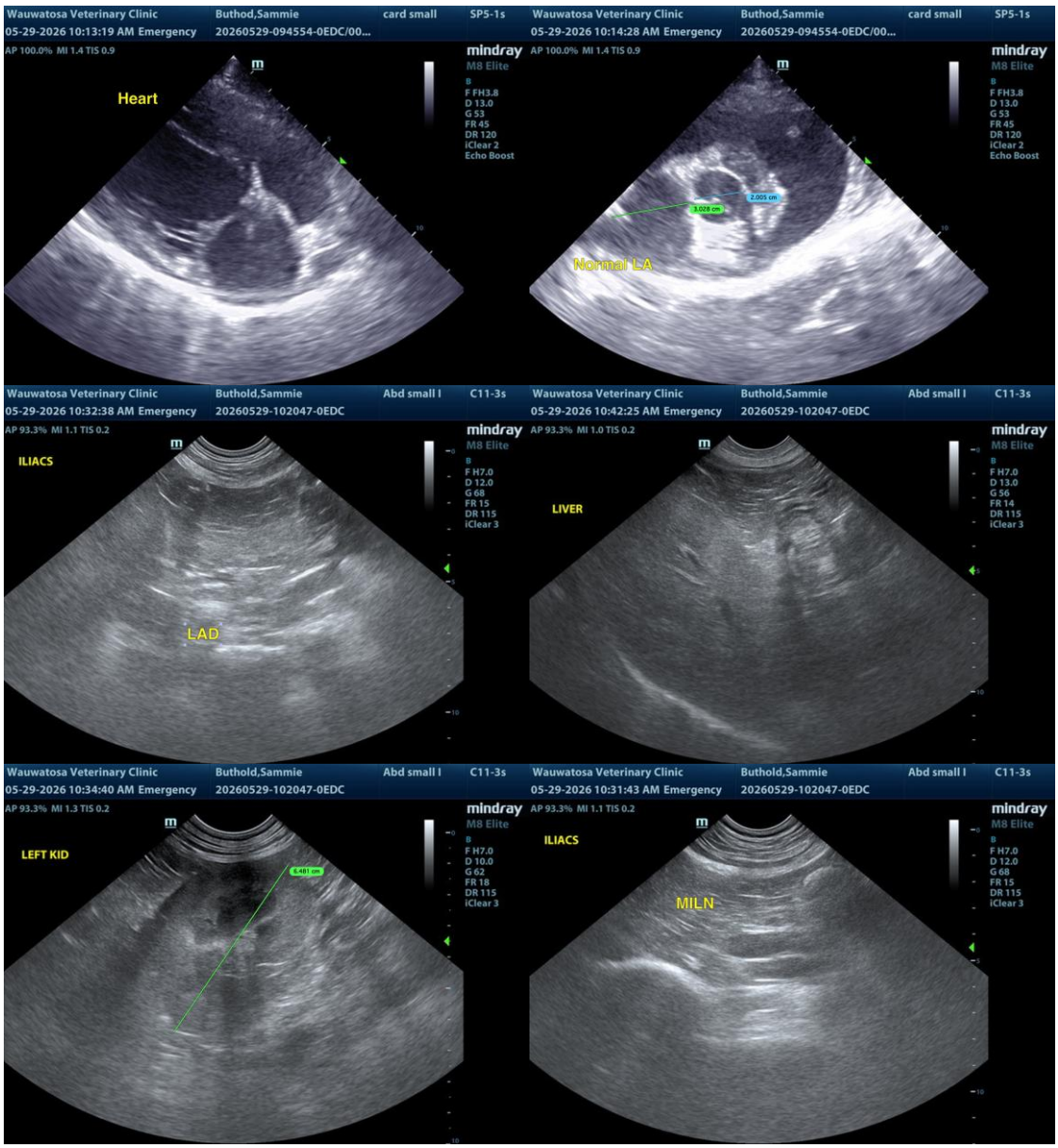

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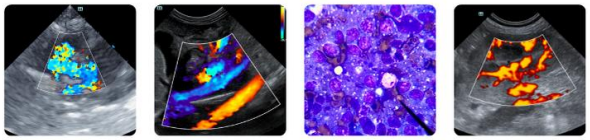

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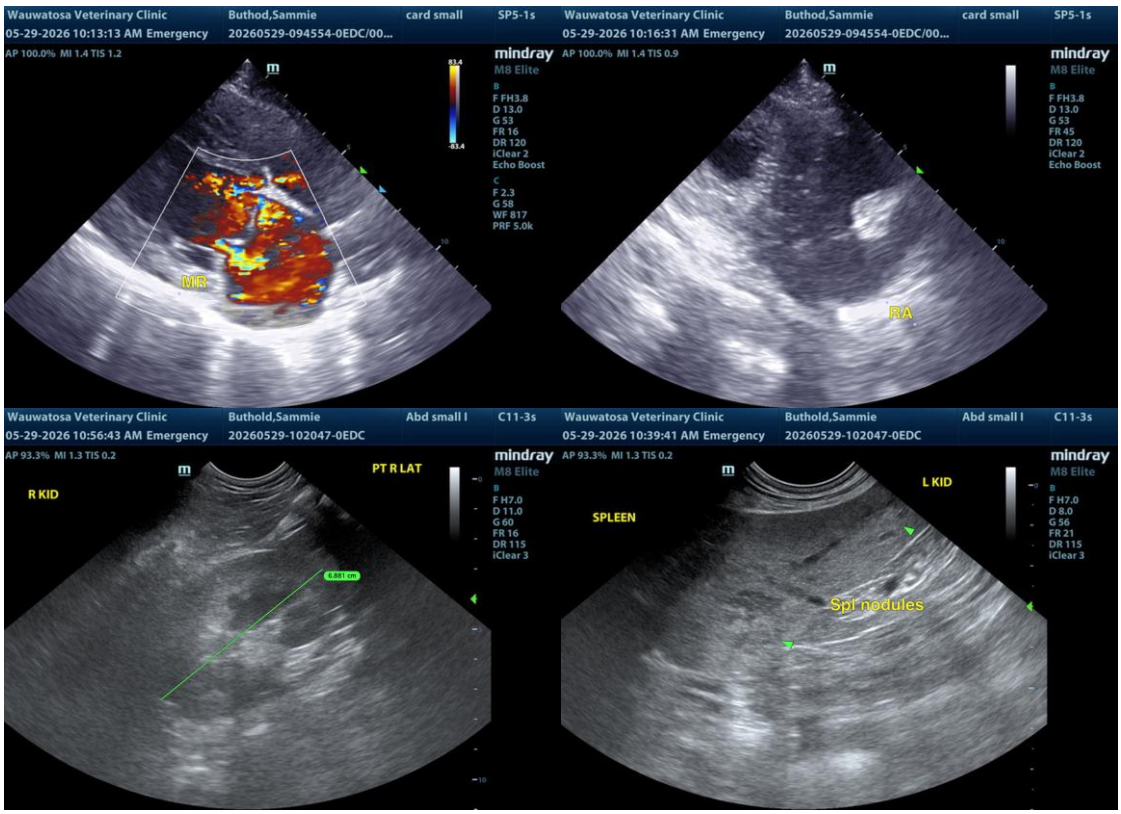

The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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