

PATIENT

Bocephus McArthur

SPECIES

Canine

BREED

Boston Terrier

SEX

MN

AGE

11 years

WEIGHT

25 lbs.

INTERPRETED BY

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

IMAGING PERFORMED BY

Jenna Walsh, CVT

HOSPITAL NAME

Faithful Friends AC

REFERRING VET

Dr. Stender

INVOICE

14830

DATE

8/16/23

PRESENTING CLINICAL SIGNS

at emergency clinic about a week ago for brachiocephalic syndrome. alt, alp, ggt, ast all high, history of pu/pd and IBD, on HP diet Radiographic Findings hepatomegaly, gas in GI tract (brachycephalic syn.), mild R atrial enlargement Primary Question/Differential to Be Answered in This Exam liver dz versus adrenals/do LDDS test

Abnormal PE/Chem/CBC/UA Results: Jan 2023 alt 141, alp 1400 8/7/23 alt 294, alp 2936, ggt 24, ast 70, hi neut % but rest cbc wnl

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	5.6		1.2	1.3	40	72	0.2
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	95	1.6	0.83		3.3	3.2	

Cardiac Presentation

The echocardiogram in this patient demonstrated normal **left atrial** size based on 3 different LA measurement methods. Chamber volumes and echogenicity were normal. The cranial and caudal **mitral** valve leaflets presented mild thickening consistent with mild endocardiosis. Doppler indicated mild measurable eccentric insufficiency. 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. Normal measured LVOT velocity with mild aortic insufficiency noted on Doppler. 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. No overt TR was noted on Doppler. The **right ventricle** was of normal size (1/3 diameter of LV), chordae structure,



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myocardial echogenicity and thickness. **Pulmonic** tract assessment revealed normal valve structure, laminar flow, and diameter (approx.1:1 pa/ao ratio). Normal measured RVOT velocity was noted. 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, 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. Minor areas of pinpoint to focal medullary mineral were noted. The left kidney measured 5.5 cm in length. The right kidney measured 5.8 cm in length.

Adrenal Glands

The bilateral adrenal glands were mildly enlarged based on caudal pole width measurement in light of body weight. Mild parenchyma heterogeneity and mild capsule asymmetry was present without suspicion for overt neoplasia. The left adrenal gland exhibited a nondisruptive, subtle cranial pole nodule measuring 0.8 cm x 0.55 cm. The overall left adrenal gland measured 2.9 cm length x 0.89 cm width in the caudal pole. The right adrenal gland measured 3.2 cm length x 0.7 cm width in the caudal pole.

Spleen

The spleen exhibited primarily finely textured and homogenous parenchyma which was hyperechoic to the liver and renal cortical parenchyma. Intermittent, nondisruptive, hyperechoic nodules were present throughout the cranial to caudal parenchyma. 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. Acute to chronic inflammatory or neoplastic changes were not noted. The hyperechoic nodules tend to trend benign and are most consistent with benign hyperplasia or myelolipomas.

Liver/ Gallbladder

The liver was enlarged with generalized nonhomogeneous parenchyma exhibiting focal thinly walled ventral intraparenchymal cyst and nondisruptive well-demarcated uniform hyperechoic intraparenchymal nodule. The nodule measured 1.8 cm in diameter. The gallbladder was non-distended in size without evidence of inflammatory criteria containing primarily anechoic content with mild gallbladder sediment. The cystic and common bile ducts were normal.



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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 generalized intact wall layering with subjective propensity for prominent intestinal mucosa layer with intermittent subtle hyperechoic mucosal speckling.

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

Pancreas

The pancreas exhibited generalized to variable mild enlargement with capsule asymmetry and nonhomogeneous to cystic pancreatic parenchyma.

Free Abdomen

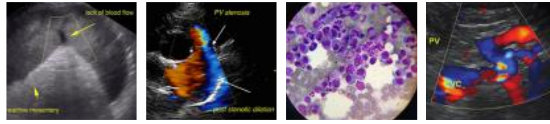
No overt lymphadenopathy or peritoneal effusion was present.

ULTRASONOGRAPHIC FINDINGS

- Compensated chronic mitral valve disease (ACVIM B1)
- Normal RA/RV - no evidence of cor pulmonale or pulmonary hypertension
- Aortic insufficiency
- Mild chronic renal changes
- Bilateral mild adrenomegaly with small left adrenal nodule - suspect adenoma
- Benign splenic nodules - consistent with myelolipomas or potential mineralization
- Enlarged, nonhomogeneous, focally nodular to cystic liver - nonspecific, vacuolar hepatopathy, inflammatory / immune-mediated disease, hyperplasia, hematopoiesis, fibrosis, nonobstructive cholestasis, infiltrative neoplasia (less likely) all potentials
- Mild gallbladder sediment (non-mucocele)
- Mildly enlarged, irregular, nonhomogeneous to cystic pancreas - age-related variant, benign remodeling owing to previous inflammation, chronic to chronic active pancreatitis possible
- Chronic enteropathy pattern

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

There is no evidence of significant structural or functional cardiomyopathy. The hemodynamic effects of the MR appear to be minimal at this stage, given the lack of LA enlargement. There is no overt indication for cardiac medications. Sonographic monitoring is required for further prognosis. Recheck echocardiogram is recommended in 6-12 months, sooner if clinical signs arise.



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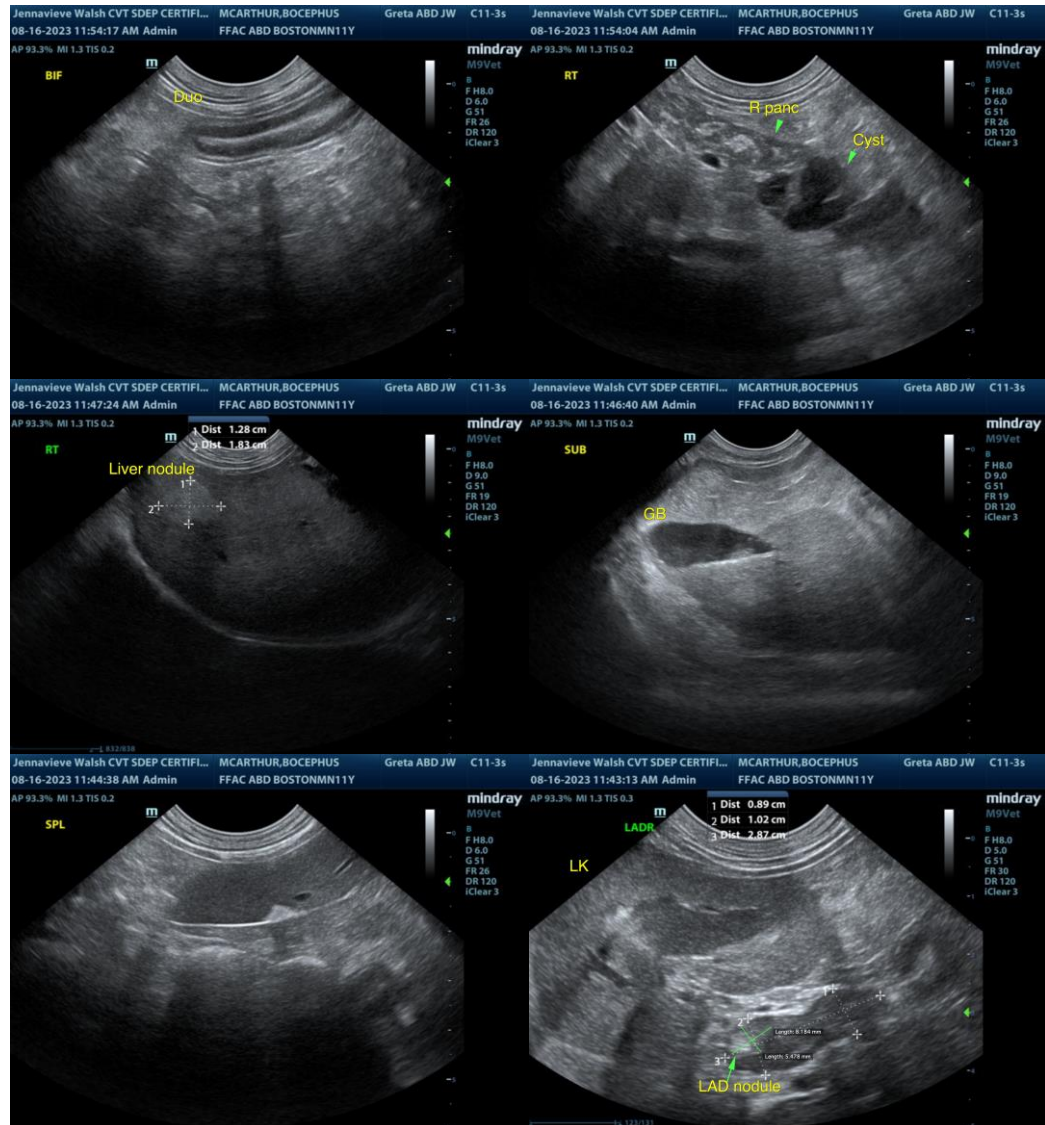
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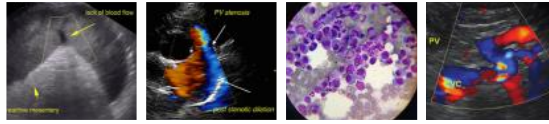
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Full adrenal workup with LDDST, as well as screening BP to assess for evidence of hypertension, given bilateral adrenomegaly in conjunction with PU/PD and mild aortic insufficiency, is recommended. Sonographic monitoring of the small left adrenal nodule for evidence of progression would be ideal.

Hepatosupportive medications including Denamarin and Ursodiol may prove beneficial.





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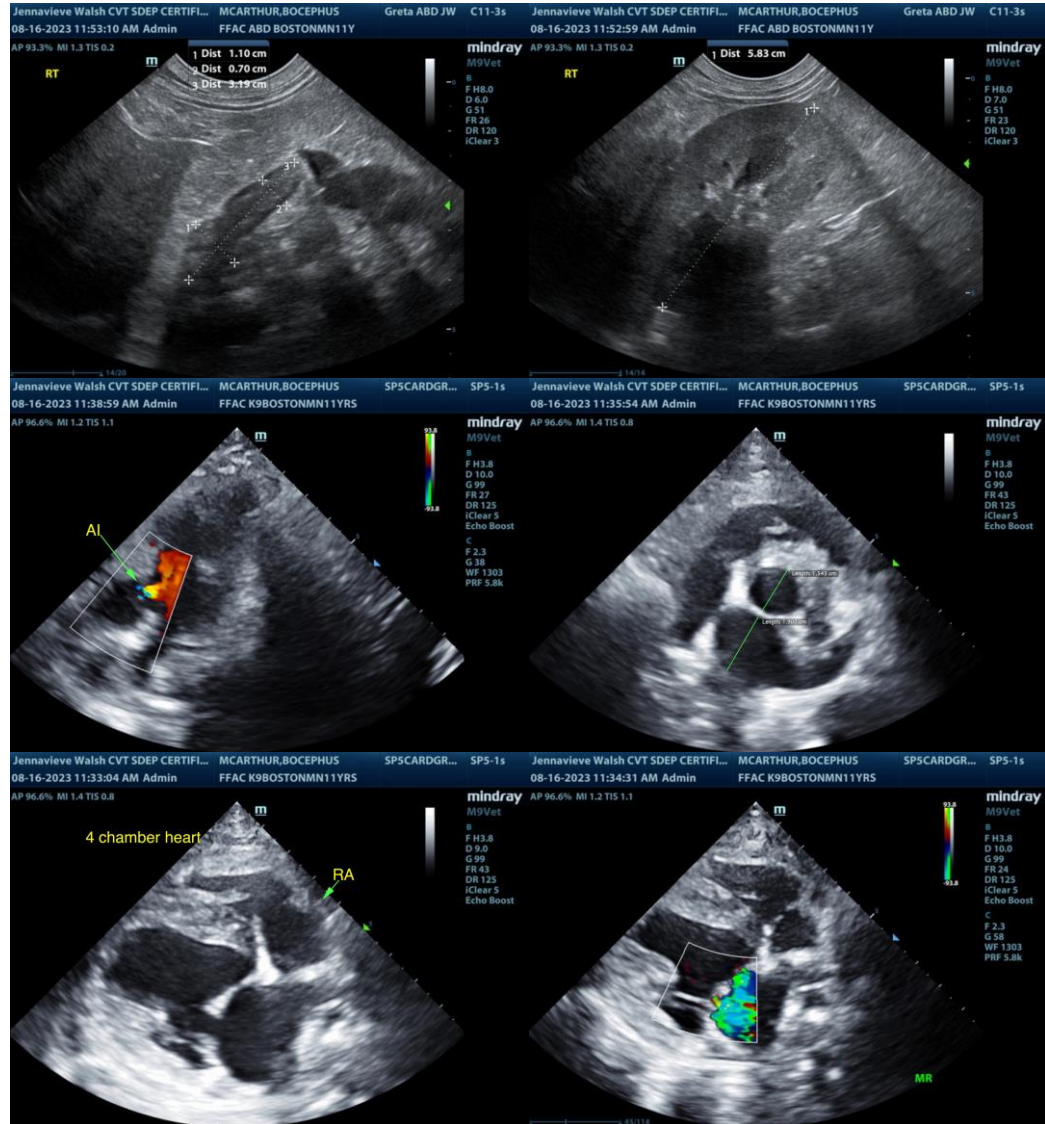
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The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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