



**PATIENT PRESENTING CLINICAL SIGNS**

Magee Duffy Pre-op echo for dental Pt not eating for 2 days, ate small amount today  
Abnormal PE/Chem/CBC/UA Results: 3/25/21- ALK 376, CBC WNL

**SPECIES ULTRASONOGRAPHIC EXAMINATION OF THE HEART & ABDOMEN**

Canine

**BREED**

Jack Russell

**SEX**

Spayed Female

**AGE**

12 Years

**WEIGHT**

14.8 Pounds

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	5.3		1.1	1.38	47.8	82.8	0.13
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	123	1.5	0.94		2.4	2.3	

**Cardiac Presentation**

**INTERPRETED BY**

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

**IMAGING PERFORMED BY**

Jessica Miller

**HOSPITAL NAME**

ACC Flanders

**REFERRING VET**

Dr. Hallihan

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 vegetative thickening consistent with endocardiosis. Doppler indicated measurable 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. 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 **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**

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**DATE**

8/24/21

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 sediment. The ureteral papillae were normal. The ureters were not visible which is normal. No evidence of inflammatory or neoplastic changes were noted.

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



**PATIENT**

Magee Duffy

loss of corticomedullary symmetry and definition expected for the age of the patient. No evidence of pelvic dilation was present. The left kidney measured 4.1 cm. The right kidney measured 4.6 cm.

**Adrenal Glands**

**SPECIES**

Canine

The bilateral adrenal glands were normal in size. Mild parenchyma heterogeneity and mild capsule asymmetry was present without suspicion for overt neoplasia. The right adrenal gland measured 1.7 cm length x 0.47 cm at the caudal pole. The left adrenal gland measured 1.8 cm length x 0.52 cm at the caudal pole.

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**Spleen**

**SEX**

Spayed Female

The spleen exhibited a finely textured and homogenous parenchyma which was hyperechoic to the liver and renal cortical 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, neoplastic, or benign parenchyma changes were not noted.

**Liver**

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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. 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.

**WEIGHT**

14.8 Pounds

**Gastrointestinal**

**INTERPRETED BY**

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

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. Gastric body wall measured 0.37 cm.

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. Duodenum wall measured 0.32 cm.

**IMAGING PERFORMED BY**

Jessica Miller

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

**Pancreas**

**HOSPITAL NAME**

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The pancreas was normal in size and contour with isoechoic to heterogeneous parenchyma compared to adjacent omentum. No signs of active inflammation or neoplasia.

**Free Abdomen**

**REFERRING VET**

Dr. Hallihan

Focal, mildly prominent to enlarged mid abdominal mesenteric node was present, measuring 3.5 cm x 0.56 cm. Focal cystic component noted. The lymph node was essentially isoechoic to adjacent omentum without evidence of peripheral inflammation and maintaining a normal width: length ratio (<0.5).

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**ULTRASONOGRAPHIC FINDINGS**

- Chronic mitral valve disease (ACVIM B1)
- Sonographically unremarkable gastrointestinal

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- Focal minor to cystic mid abdominal mesenteric lymph node – potential for minor reactive lymphadenitis. No overt evidence of neoplastic criteria.



**PATIENT**

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- Mild bilateral chronic renal changes
- Heterogeneous pancreas – age related pancreatic changes suspected, potential for parenchymal remodeling or low-grade chronic inflammation.

**SPECIES**

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- Hepatic parenchymal remodeling – subjectively benign.

**BREED**

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**INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS**

The overall appearance of the liver is consistent with probable age related benign parenchymal remodeling or mild vacuolar hepatopathy given the ALP elevation. Overall, largely geriatric abdomen without evidence of significant visceral pathology as an obvious cause of the patient's recent decreased appetite. Continued gastrointestinal supportive care recommended.

**SEX**

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The lack of left atrial enlargement indicates that the risk of future complication is low, although prognosis is highly variable at this stage of mitral valve disease. No indication for cardiac medications. No anesthetic contraindications. Suggested anesthetic protocol may include opioid or Benzodiazepine pre-med, induction with Propofol or Alfaxalone, and appropriate gas anesthesia with avoidance of alpha 2 agonists. Recheck echocardiogram suggested in 6 months, sooner if clinical signs consistent with heart disease develop.

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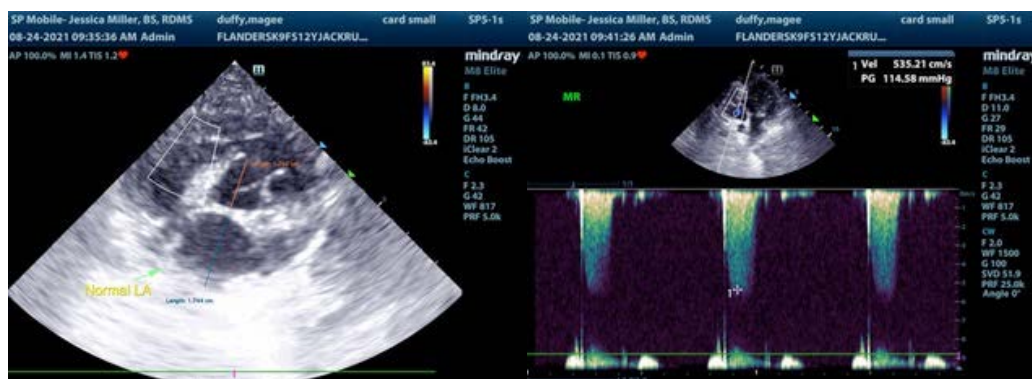
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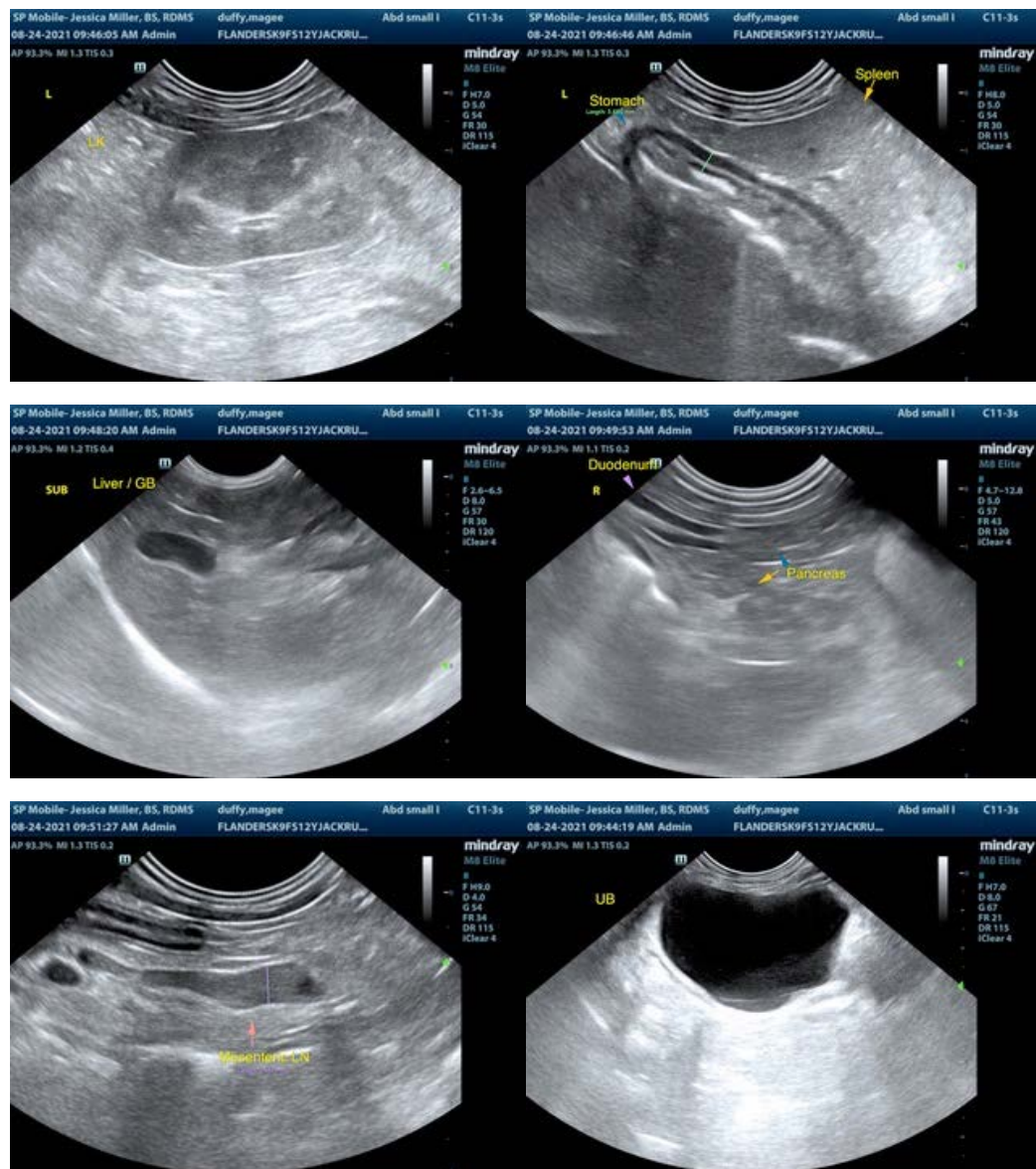
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The information and recommendations provided are based on the images presented by the referring veterinarian. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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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