



PATIENT PRESENTING CLINICAL SIGNS

Marshmellow Bruno HM, pancreatitis

SPECIES ULTRASONOGRAPHIC EXAMINATION OF THE HEART & ABDOMEN

Canine

BREED

Maltese

SEX

Spayed Female

AGE

13 Years

WEIGHT

6.9 pounds

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	>5.0	--	1.1	1.4	20	42.4	0.1
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	120	1.3	1.0	6.9	2.7	1.92	--

INTERPRETED BY

Eric Lindquist, DMV, DABVP(CFM), Cert. IVUSS

IMAGING PERFORMED BY

Kerri Becker

HOSPITAL NAME

Companion Animal Hopsital Parsippany

REFERRING VET

Dr. Tsai

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Cardiac Presentation

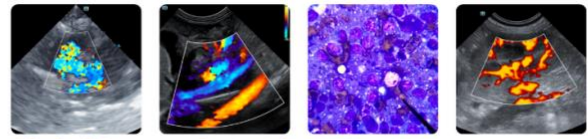
The echocardiogram in this patient demonstrated normal **left atrial** size based on 3 different LA measurement methods. Chamber volumes and echogenicity were normal. The cranial and caudal **mitral** valve leaflets presented vegetative thickening consistent with endocardiosis. Doppler indicated measurable insufficiency. 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 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

The **urinary bladder**, trigone, and pelvic urethra presented normal thicknesses and normal tone. The ureters were not visible which is normal. No uroliths or sediment were visualized, and anechoic urine



PATIENT	was present. No evidence of inflammatory or neoplastic changes were noted. Ureteral papillae were normal.
Marshmellow Bruno	
SPECIES	The kidneys revealed largely normal size and structure, corticomedullary definition and ratio (cortex 1/3 of medulla) were essentially maintained with some mild/moderate age-related loss of curvilinear patterns regarding the capsule and C/M junction. The cortices presented largely uniform texture with some increased echogenicity expected for his age patient. Medullary structure differed distinctly from that of the cortex. Dystrophic mineralization was noted and non-obstructive at this time. The left kidney measured 3.74 cm in length. The right kidney measured 4.02 cm in length. The largest calculus in the pelvis of the right kidney measured 0.46 cm.
Canine	
BREED	
Maltese	
SEX	Adrenal Glands
Spayed Female	Both adrenal glands were visualized and recognized as having normal shape, size, position and echogenicity for this breed. The phrenic vasculature, glandular echogenicity and detail were unremarkable. Capsule, cortex, and medullary definition were normal for this age patient. The right adrenal gland measured 0.75 cm width at the caudal pole and 0.83 cm width at the cranial pole. The left adrenal gland measured 1.47 cm x 0.49 cm width.
AGE	Spleen
13 Years	The spleen presented a smooth homogeneous parenchyma hyperechoic to liver and renal cortical parenchyma. The capsule was smooth without noticeable expansion or deviation from within the spleen or adjacent pathology. The splenic vasculature demonstrated normal volume without signs of congestion or thrombosis. No sonographic evidence of acute or chronic inflammatory, neoplastic, or infarctual changes were noted.
WEIGHT	Liver
6.9 pounds	The liver images from right and left intercostal as well as subcostal views revealed subjectively normal liver size, contour, and structure. Some mild age-related parenchymal remodeling was noted but likely not clinically significant at this time. Vascular and biliary tracts were of normal volume and no evidence of congestion was noted. The gallbladder presented some dependent debris with essentially normal contour. The cystic and common bile ducts were normal. No overt evidence of active inflammatory, infiltrative or regenerative pathology was noted but should be paired with current or past LE elevations regarding any clinical significance to this presentation. The hepatic lymph nodes were unremarkable.
INTERPRETED BY	Gastrointestinal
Eric Lindquist, DMV, DABVP(CFM), Cert. IVUSS	There was some residual chyme and gas was noted in the stomach , yet not pathological. This is consistent with end post prandial presentation. Transit of chyme into the small intestine was normal. Curvilinear patterns were maintained throughout the GI tract. No evidence of pathology. Small and large intestine demonstrated normal luminal chyme and stool consistency respectively. No obstructive or overt infiltrative disease was noted. No associated abnormal lymphatic activity was noted.
IMAGING PERFORMED BY	Pancreas
Kerri Becker	The base and limbs of the pancreas were observed to be largely isoechoic to surrounding omental fat. Some parenchymal remodeling, however, with mild deviation from curvilinear normalcy was observed. Pancreatic duct and capsular irregularities were present consistent with age related changes. If pain
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upon imaging (+ Murphy sign) was present or if the patient is focally painful in subxiphoid palpation then low-grade smoldering chronic pancreatitis should be suspected.

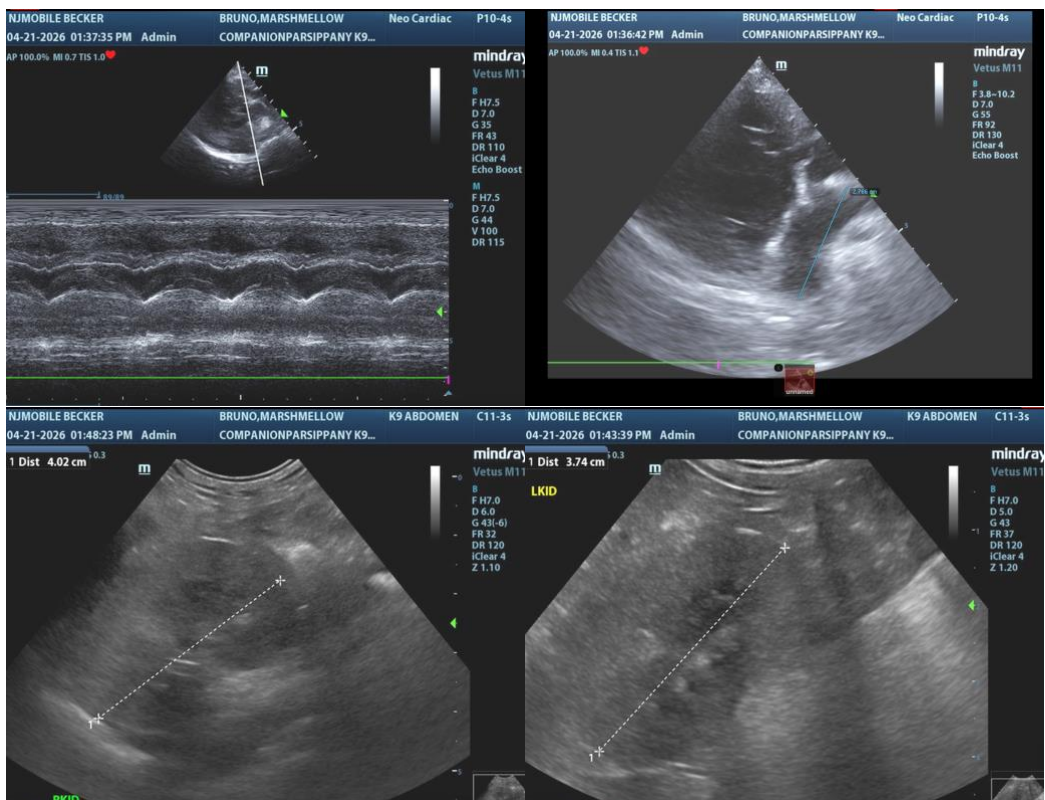
ULTRASONOGRAPHIC FINDINGS

- Stage B1 valvular disease.
- Age-related renal changes with nephrolithiasis.
- Geriatric abdomen otherwise.

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

The heart is stable without clinical disease. No overt contraindication for anesthesia of brief to moderate duration. I suggest Torbutrol premed, Propofol induction, Isoflor maintenance or similar protocol if anesthesia is desired. Blood pressure, EKG and chest radiographs are recommended if not already performed. Target white coat negative systolic pressure of < 160 mmHg. If higher than this ACE-inhibitor is suggested to reach this level. Recheck echocardiogram is recommended in 6-12 months, earlier if murmur grade increases or clinical signs initiate.

No evidence of significant abdominal disease. Cannot rule out low-grade pancreatitis. Increased pancreatic enzymes may occur when early renal failure begins to occur. The kidneys appear approximately 50 to 60% compromised.





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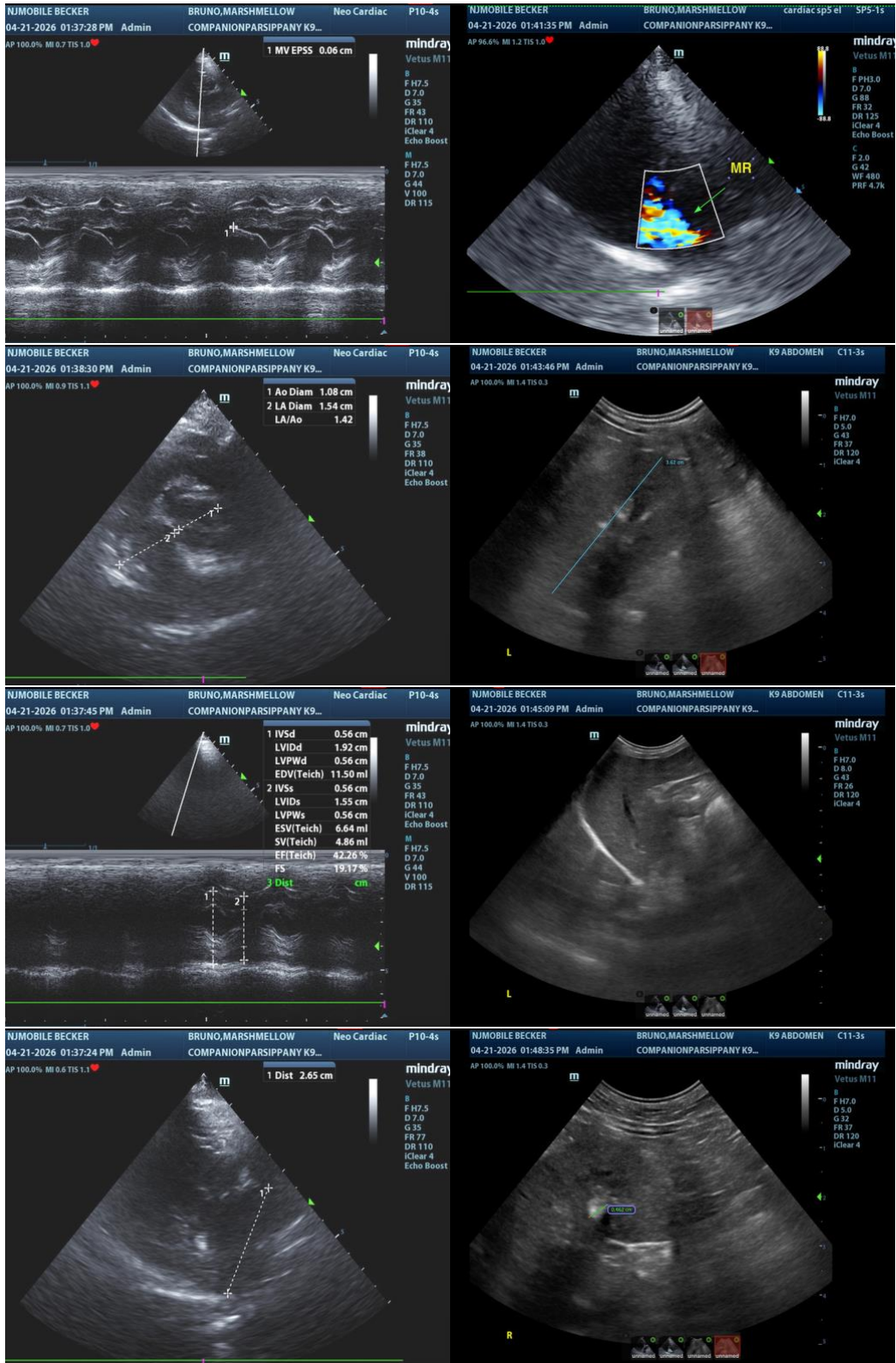
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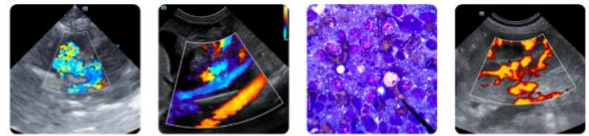
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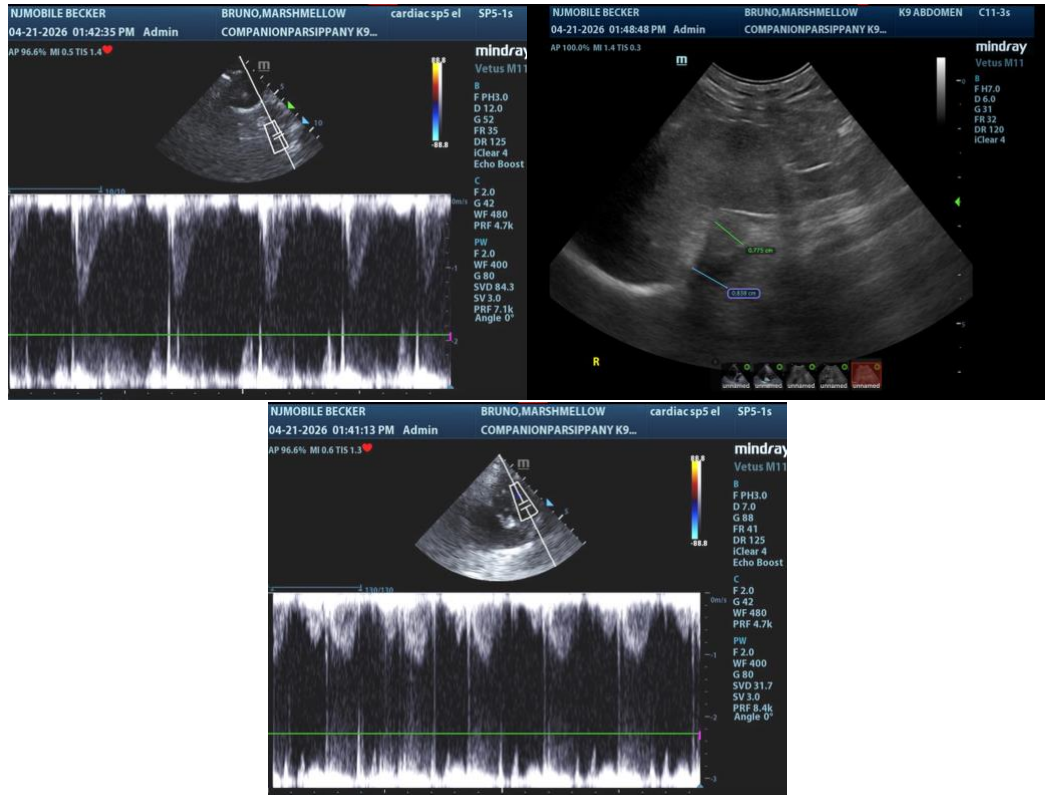
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The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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.

Eric Lindquist, DMV, DABVP(CFM), Cert. IVUSS,

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