PATIENT

Zeus Georgatos

SPECIES

Canine

BREED

Shih Tzu x

SEX

Neutered Male

AGE

10 Years

WEIGHT

16.8 lbs

INTERPRETED BY

Brad Harris, DVM, DACVECC, DACVIM (cardiology)

IMAGING PERFORMED BY

Meghan Morse, LVT, CVT

HOSPITAL NAME

Wyckoff Veterinary Hospital

REFERRING VET

Dr. Scott

INVOICE

73666

DATE

3/13/26

PRESENTING CLINICAL SIGNS

Grade 3 heart murmur. Liver value elevation. Proteinuria. PE- very cushingoid.

Current meds: Vetoryl 30mg/day, Carprofen 25mg/day, Tacrolimus for eyes

Abnormal PE/Chem/CBC/UA Results: ALT 184, ALP 1821, GGT 41, BUN 41, Creat 1.3, SDMA 17.7, T4 <0.5, USG 1.022, UPC 1.9

ULTRASONOGRAPHIC EXAMINATION OF THE HEART & ABDOMEN

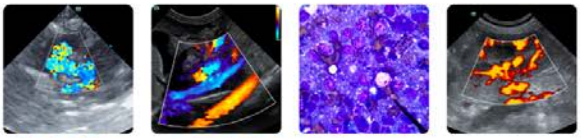
CANINE CARDIAC PARAMETERS	BW	HR BPM	LAD 4 ch Long	RAD 4 ch Long	La/Ao Heart Base	LVIDd	LVIDs
NORMAL PARAMETER		50-100			<1.6		
PATIENT	7.64	NM	2.7	1.97	1.14	3.0	1.52
CANINE CARDIAC PARAMETERS	**FS**	**EPSS**	**PV V MAX (m/s)**	**AV V Max (m/sec)**	**MR Vmax**	**TR Vmax**	**RPA distensibility (normal >30%)**
NORMAL PARAMETER	28-40	<0.6	0.7-1.6	0.7-1.7	4.5-5.5	< 2.7	
PATIENT	49	0.1	1.0	1.0	5.2	NM	58

Cardiac Presentation

The left atrium is normal in dimension. The left ventricle is normal in dimension, with normal systolic function. The right atrium and ventricle are normal in dimension, with normal systolic function. The anterior and posterior mitral valve leaflets are thickened and redundant consistent with myxomatous changes, and there is no significant prolapse. There is mild to moderate mitral regurgitation identified. The tricuspid valve leaflets are minimally thickened, with mild tricuspid regurgitation and no evidence of pulmonary hypertension. The left ventricular outflow tract demonstrated normal laminar flow and the visible aorta is unremarkable. The right ventricular outflow tract assessment revealed normal laminar flow, and appropriate diameter and distensibility. There is no pulmonic and no aortic valve insufficiency identified. There is no visible pericardial, pleural, or free peritoneal fluid documented. No evidence of hepatic venous congestion is noted. The cardiac chambers, pericardial and visible extra-cardiac regions were free of masses, spontaneous echo contrast, or thrombi.

Urinary System

The urinary bladder, trigone, and pelvic urethra are unremarkable with normal wall thicknesses and normal tone. The ureters were not visualized, which is a normal finding. The bladder contains a moderate amount of suspended echogenic mobile sediment. The ureteral papillae appear normal.



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The kidneys are normal in size. The cortices are hyperechoic with a loss of corticomedullary definition. There are multiple scattered renal cortical cysts, the largest of which is noted on the left kidney and is marginally distorting the renal capsule. The cortex to medulla ratio is appropriate. No significant pyelectasis or pelvic dilation. The renal capsules are irregular bilaterally. Left kidney measures 5.06 cm. Right kidney measures 5.09 cm.

Adrenal Glands

The adrenal glands are bilaterally prominent with irregular margins and slightly swollen capsular contour. There is no overt evidence of capsular escape or vascular invasion. The phrenic vasculature is normal. Left measures 1.23 cm x 3.52 cm. Right measures 1.0 cm x 2.6 cm.

Spleen

The spleen measures 1.27 cm at the hilus. The parenchyma is diffusely mottled and heterogeneous. The splenic vasculature is normal without signs of congestion, spontaneous echo contrast, or thrombosis.

Liver

The liver is subjectively enlarged with a diffusely mottled or heterogeneous parenchyma and mixed hyper- and hypoechoic nodular changes. The gallbladder is moderately overdistended with hyperechoic sediment and organizing suspended debris. The gallbladder wall is appropriately thin. No intra- or extrahepatic biliary dilation. The cystic and common bile ducts are normal.

Gastrointestinal

The stomach and intestines are free of stasis and peristaltic activity, with no significant dilation noted. There is normal wall thickness and acceptable curvilinear mural detail. The pyloric-duodenal junction and ileocecocolic junction are patent, and the colon contains normal shadowing feces. There is no evidence of shadowing obstructive material or overt infiltrative disease noted. No associated abnormal lymphatic activity is documented.

Pancreas

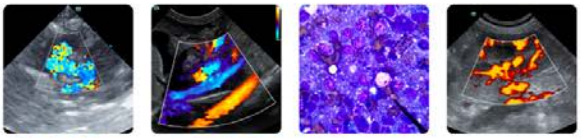
The base and limbs of the pancreas are isoechoic to surrounding omental fat. The pancreatic duct and capsular contour are normal. There is no overt evidence of active inflammatory or neoplastic disease.

Free Abdomen

No overt lymphadenopathy or peritoneal effusion was present.

ULTRASONOGRAPHIC FINDINGS

- The cardiac findings are consistent with degenerative/myxomatous mitral valve disease with minimal to mild hemodynamic effects consistent with ACVIM Stage B1 disease. It is unlikely that any current morbidity is of cardiac origin.
- The urinary bladder contains echogenic, suspended debris contrasted with anechoic urine. This is often related to urinary tract infection but may represent exfoliated debris or sterile inflammation.



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- There is increased renal cortical echogenicity and thickening with a mildly irregular capsular contour. Multifocal cystic cortical changes are noted. This is secondary cystic formation consistent with chronic age related degeneration and remodeling. There is no evidence of abscessation or suspicion of neoplasia.
- The adrenal glands are mildly enlarged with no evidence of focal capsular expansion or vascular invasion noted. The parenchyma is uniform and there is no overt suspicion of neoplasia. This is considered likely a hyperplastic change associated with stress or adrenal endocrinopathy (PDH).
- The mildly enlarged spleen with a coarse/mottled reticular pattern is most consistent with a reactive spleen, or possible splenitis. Round cell neoplasia is considered less likely but cannot be definitively excluded.
- The liver is mildly enlarged and uniform with hyperechoic parenchymal changes. There were subtle, hypoechoic heterogenous nodular changes. The gallbladder and common bile duct were unremarkable other than a minor amount of gallbladder sludge/debris. This is a common finding in patients with diabetes mellitus or other endocrinopathies.
- The gallbladder is over distended with largely suspended, organized debris. This is most consistent with an emerging mucocele. There was no evidence of inflammation noted at this time. This is not likely causing overt clinical signs.

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

A urinalysis and urine culture via cystocentesis are recommended to evaluate the urinary tract changes for potential urinary tract infection.

Fine needle aspirates of the spleen and liver with cytology are recommended. A coagulation profile and platelet estimate prior to sampling are indicated to ensure the absence of coagulopathy. Occasionally some tissues are poorly exfoliative, or cytology is non-specific, in which case biopsy with histopathology may be required for a definitive diagnosis.

Ursodiol should be started, given the concern for a developing mucocele, in addition to the previously prescribed Vetoryl. Also consider Denamarin for hepatic support.

The previously diagnosed hyperadrenocorticism should continue to be monitored via ACTH stimulation or low-dose Dexamethasone suppression test to ensure appropriate dose.

Cardiac Recommendations:

Given these findings, no cardiac therapy is recommended. There are no cardiac contraindications to anesthesia, fluid therapy, vasopressor therapy, or corticosteroids as indicated for further assessment and treatment. If not already performed, baseline thoracic radiographs and blood pressure are recommended. A recheck echocardiogram is recommended in 6 months.

Anesthesia considerations:
If anesthesia is necessary, alpha-2 agonists, ketamine, high dose acepromazine, and Telazol should be avoided. Fluid therapy during anesthesia should be considered at a conservative rate (e.g., 5 ml/kg/hour) if possible.

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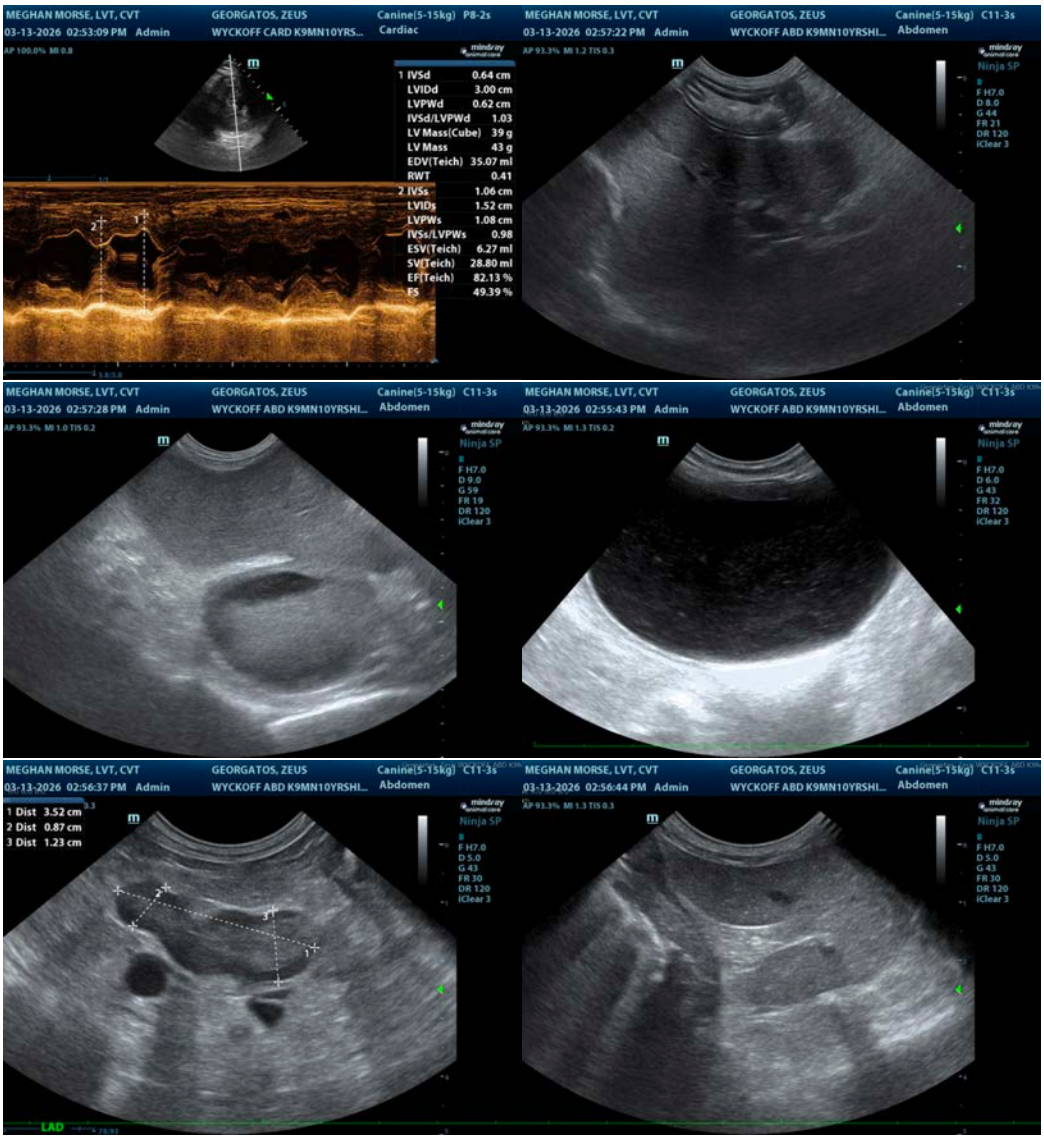
Diet:
A high-quality food from Hills, Royal Canin, Science Diet, Eukanuba, Iams, or Purina that is highly palatable with adequate protein and calories for maintaining optimal body condition is reasonable.

Activity:
No special considerations are necessary.



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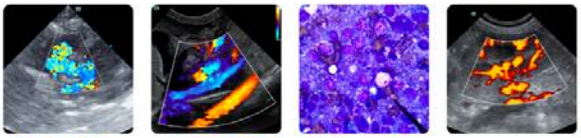
FUELED BY SONOPATH VETERINARY ULTRASOUND



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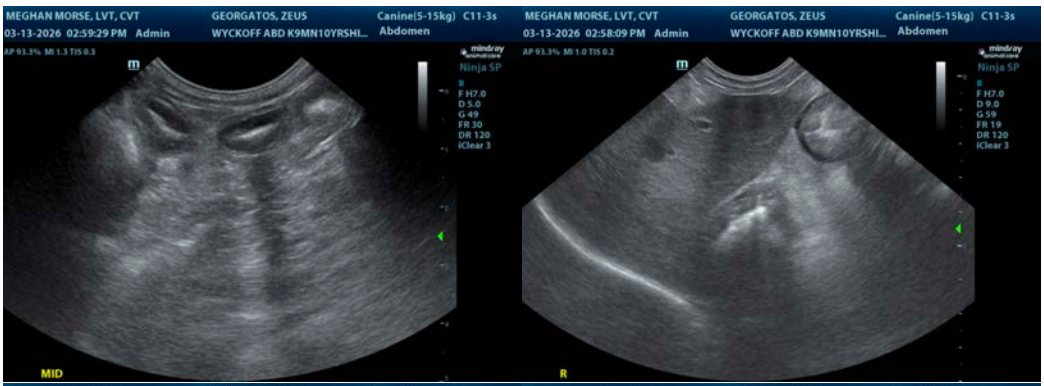

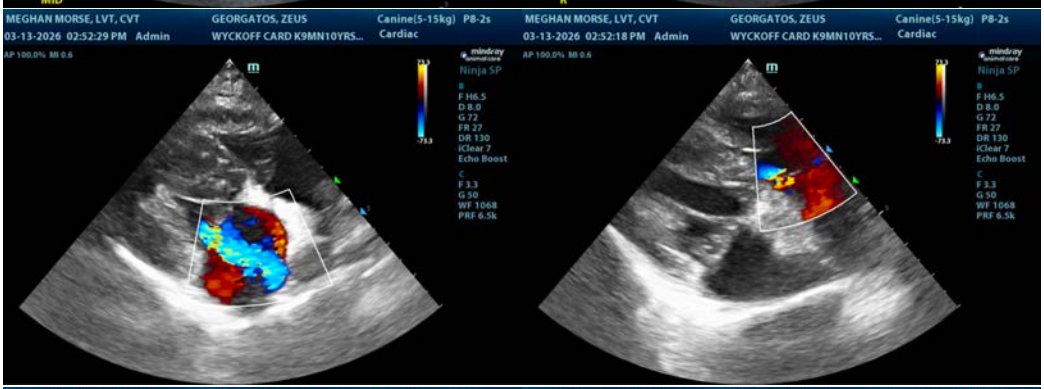

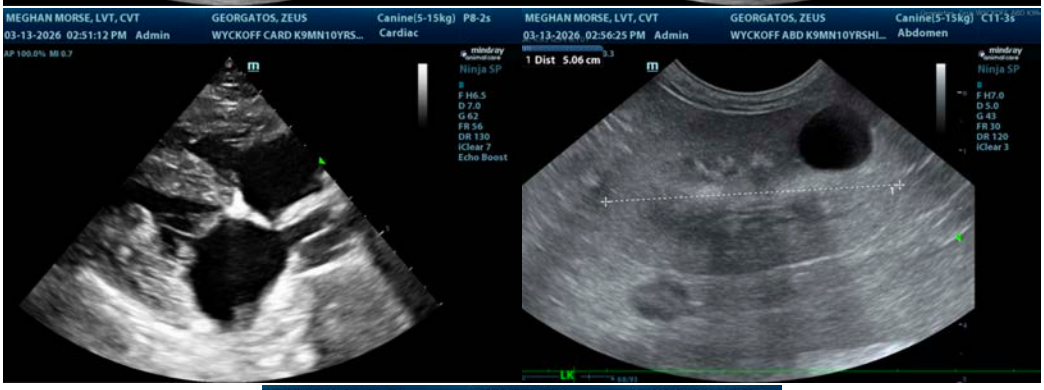

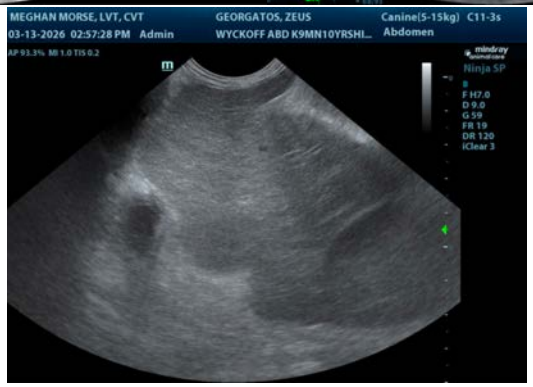

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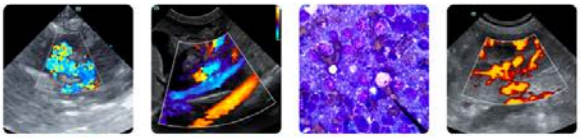

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The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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.

Brad Harris, DVM, DACVECC, DACVIM (cardiology)

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