
PATIENT
PRESENTING CLINICAL SIGNS

Hx of grade 1-2 heart murmur, now a 2-3. Elevated liver enzymes. Pre-dental examination. Current meds: Hydroxyzine 25 mgs BID for allergies.

SPECIES

Abnormal PE/Chem/CBC/UA Results: 1/26/17: Alk. Phos. 398, ALT 173. 2/23/17: Alk. Phos. 436, ALT 214.

Canine

ULTRASONOGRAPHIC EXAMINATION OF THE HEART & ABDOMEN
BREED

Havanese

SEX

Neutered Male

AGE

8 Years

WEIGHT

19.7 Pounds

CANINE CARDIAC PARAMETERS	MR VMAX (m/s)	TR VMAX (m/s)	LA/AO (Boon method)	LA/AO (Heart Base)	FS (%)	EF (%)	EPSS (cm)
NORMAL PARAMETER	4.5-5.5	<2.7	1.3	1.6	28-40	40-100	0.03-0.77
PATIENT			1.25	1.2	38	71	
CANINE CARDIAC PARAMETERS	HR (BPM)	AV VMAX (m/s)	PV MAX (m/s)	BODY WEIGHT (kg)	LA 2D 4-chamber long axis AS to FW (Rishniw) (cm)		LVIDd (Rishniw) (cm)
NORMAL PARAMETER	50-100	0.7-1.7	0.7-1.6	BELOW	BELOW		BELOW
PATIENT	132	2.34	1.48		1.96		2.32
BODY WEIGHT DEPENDENT PARAMETERS > Adapted from June Boon, Veterinary Echocardiography, 1998 Rishniw M and Hollis NE. Evaluation for Four 2-Dimensional Echocardiographic Methods of Assessing Left Atrial Size in Dogs. J Vet Intern Med 2000; 14:429-435. Bonagura et al. Echocardiography: principles of interpretation, Vet Clin North Am 15:1177, 1995				5	1.0-1.85		2.2-3.2
				10	1.3-1.9		2.9-3.5
				15	1.6-2.1		3.5-3.9
				20	1.8-2.3		3.9-4.3
				25	1.9-2.4		4.2-4.6
				30	2.0-2.7		4.5-5.1
				35	2.0-2.9		4.6-5.6
				40	2.1-3.2		4.8-6.0
				45	2.1-3.4		5.0-6.4
50	2.1-3.6		5.2-6.8				

INTERPRETED BY

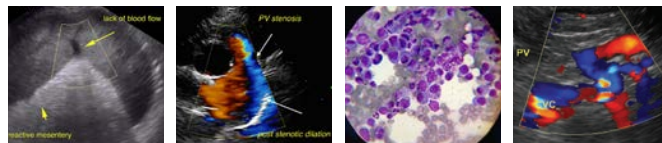
 Eric Lindquist, DMV
 DABVP, Cert. IVUSS

IMAGING PERFORMED BY

Kelly Vazquez, CVT

HOSPITAL NAME
REFERRING VET
INVOICE
Cardiac Presentation
DATE

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**



PATIENT 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.

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Aortic velocity was mildly elevated. Blood pressure measurements are recommended to rule out systemic hypertension. Minor mitral insufficiency noted.

Urinary System

AGE

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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 was present. No evidence of inflammatory or neoplastic changes were noted. Ureteral papillae were normal. The pelvic urethra was imaged 2.0 cm beyond the cystourethral junction.

WEIGHT

19.7 Pounds

The **kidneys** revealed largely normal size and structure, corticomedullary definition and ratio (cortex 1/3 of medulla) were essentially maintained with some 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 and no evidence of pelvic dilation was present. Minor mineralization was noted. The right kidney measured 4.57 cm. The left kidney measured 4.3 cm.

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Adrenal Glands

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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 left adrenal gland measured 1.58 cm x 0.47 cm at the cranial pole and 0.66 cm at the caudal pole. The right adrenal gland measured 0.8 cm at the cranial pole and 0.5 cm at the caudal pole.

HOSPITAL NAME

Spleen

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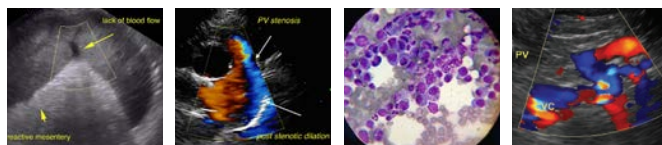
The **spleen** presented a smooth homogeneous parenchyma hyperechoic to liver and renal cortical parenchyma. The capsule was smooth without noticeable expansion or deviation from within the spleen or adjacent pathology. The splenic vasculature demonstrated normal volume without signs of congestion or thrombosis. No sonographic evidence of acute or chronic inflammatory, neoplastic, or infarctual changes were noted. The spleen was folded upon itself cranially.

INVOICE

Liver

The **liver** revealed a uniform vacuolar hepatopathy pattern and minor heterogeneous changes, subjectively benign. No evidence of significant disease. Liver enzyme elevations are likely owing to reactive hepatopathy or low-grade benign hepatopathy. FNA could be considered at the time of sedation. The **gallbladder** was unremarkable.

DATE



PATIENT

Gastrointestinal

Some retention of ingesta was noted in the **stomach**. The **small intestine** was unremarkable.

Pancreas

SPECIES

The base and limbs of the **pancreas** were observed to be largely isoechoic to surrounding omental fat. Pancreatic duct and capsular contour were acceptably normal and parenchyma respected normal curvilinear patterns. No overt evidence of active inflammatory or neoplastic disease was noted.

Canine

BREED

ULTRASONOGRAPHIC FINDINGS

Havanese

- Compensated mitral insufficiency
- Benign hepatopathy

SEX

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

Neutered Male

No left atrial enlargement. Blood pressure measurements recommended. No contraindication to anesthetic procedure.

AGE

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WEIGHT

19.7 Pounds



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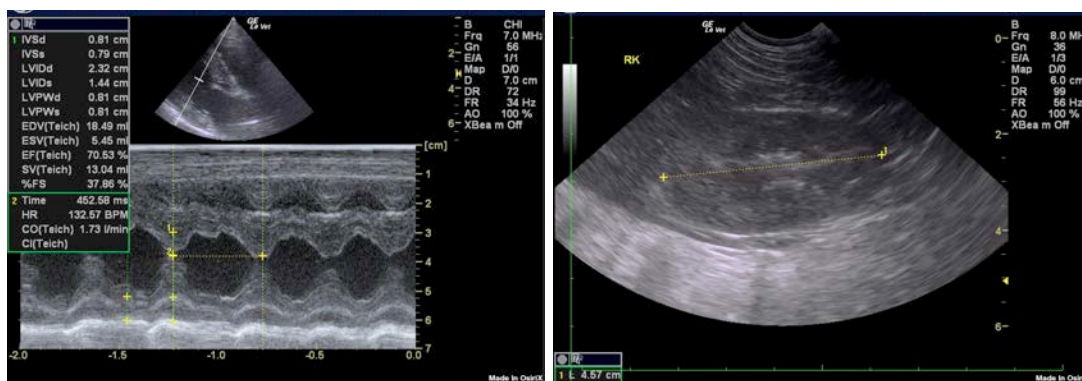
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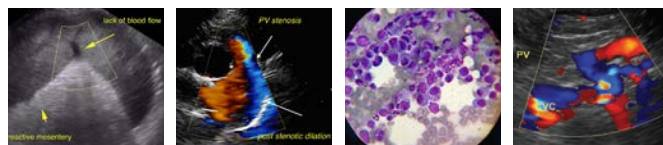
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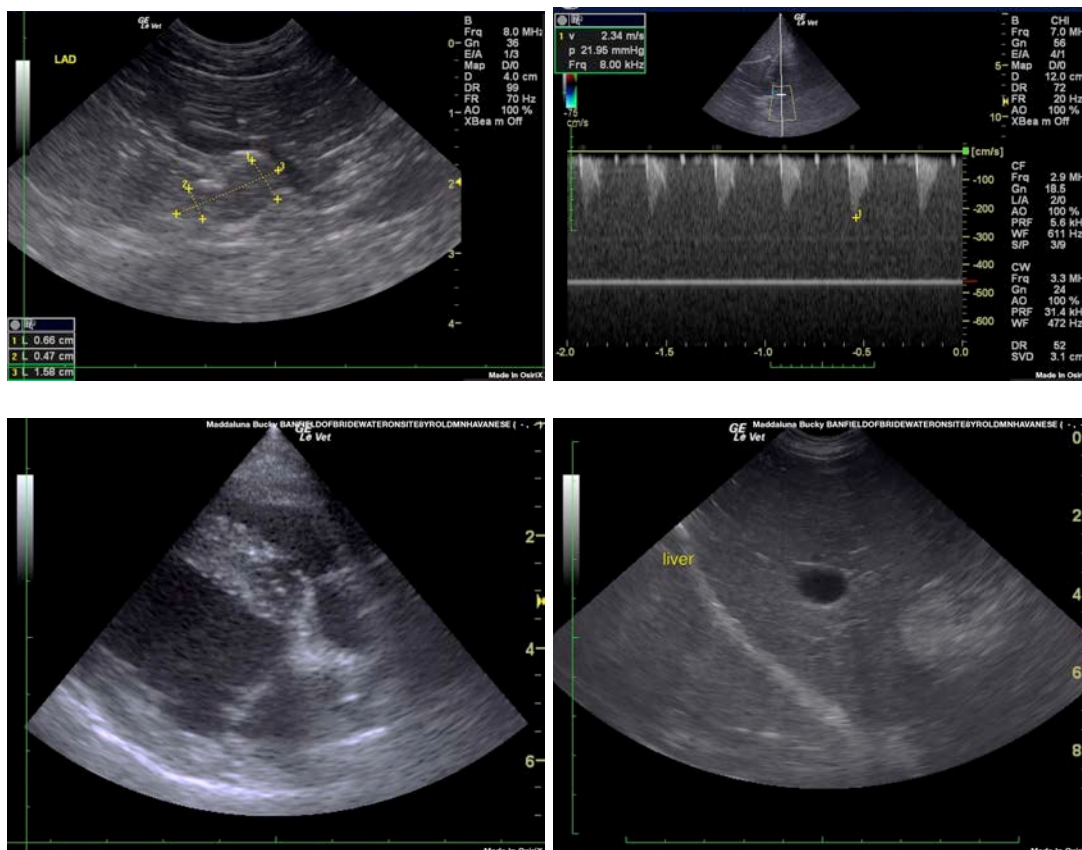
HOSPITAL NAME

Eric Lindquist, DMV, DABVP, Cert. IVUSS, CEO of SonoPath.com

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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.