



**PATIENT**

Benji Mansell

**SPECIES**

Canine

**BREED**

Schnoodle

**SEX**

Neutered male

**AGE**

12 years

**WEIGHT**

8.8 kg

**INTERPRETED BY**

Eric Lindquist, DMV  
DABVP, Cert. IVUSS

**IMAGING PERFORMED BY**

Dr. Belan

**HOSPITAL NAME**

Signal Hill AH

**REFERRING VET**

Dr. Lebouldus

**PRESENTING CLINICAL SIGNS**

Increased ALT, hyperlipemia and history of chronic pancreatitis. Chest x ray VHS 10.8, no murmur auscultated. Pre anesthetic workup. Echo 48 images abdominal scan 46 images 94 total

**ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN**

**Urinary System**

The **urinary bladder** was largely normal with a focal calculus that measured 0.28 cm. A separate calculus measured 0.47 cm and was non-obstructive. The residual prostate was uniform and measured 0.72 cm. The pelvic urethra was imaged 2.0 cm beyond the cystourethral junction and appeared normal.

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 this age patient. Medullary structure differed distinctly from that of the cortex and no evidence of pelvic dilation was present. Slight mineralization was noted. The right kidney measured 5.26 cm. The left kidney measured 4.56 cm.

**Adrenal Glands**

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 0.46 cm. The left adrenal gland measured 0.36 cm at the cranial pole and 0.42 cm at the caudal pole.

**Spleen**

The **spleen** was largely smooth with subtle heterogeneous parenchymal changes while maintaining normal echogenic relationship to the liver and kidney. Hyperechoic lipogranulomatous nodule was noted at the cranial pole and measured 1.27 cm. These changes are consistent with normal age-related alteration. The capsule was smooth without noticeable impingement from within the spleen or from pathology in the adjacent abdomen. The splenic vasculature demonstrated normal volume without signs of congestion or significant contraction. No evidence of active acute or chronic inflammatory, neoplastic, or infarctual changes was noted.

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**Liver**

The **liver** was uniformly swollen with minor, excessive gallbladder debris and over distension with dependent and suspended bile without evidence of overt mucocele formation. However, excessive sludge was present. The liver presented coarse architecture with mildly increased portal markings and subtle, mixed echogenic changes. This is consistent with vacuolar hepatopathy and some level of remodeling and history of inflammatory component. There was no overt suspicion of neoplasia.



**PATIENT** *Gastrointestinal*

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Examination of the **gastrointestinal tract** revealed a stomach and intestine free of stasis, of normal wall thickness, acceptable curvilinear mural detail, and peristaltic activity. 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.

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*Pancreas*

The right and left limbs of the **pancreas** revealed mixed, echogenic, heterogenous parenchymal changes. There was no overt evidence of neoplasia. The right limb revealed a nodular change measuring 1.17 x 1.0 cm. An irregular pancreatic duct was noted.

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**ULTRASONOGRAPHIC EXAMINATION OF THE HEART**

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The echocardiogram in this patient demonstrated normal **left atrial** size based on 3 separate methods of LA evaluation. The cranial and caudal **mitral valve** leaflets presented normal linear structure, extension in systole, and union in diastole with normal kinesis. 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. **Tricuspid** valvular assessment demonstrated adequate linear morphology and kinesis. The **right ventricle** was of normal size (1/3 diameter of LV), chordae structure, myocardial echogenicity and thickness. **Pulmonary outflow** 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. The cranial **mediastinum and pericardial and extra-cardiac regions** were free of masses in the visible window.

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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			1.3	1.46	55	87	0.1
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	93		1.0	8.8	1.6	2.2	



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**ULTRASONOGRAPHIC FINDINGS**

Age related renal changes with minor mineralization.

Splenic lipogranulomas.

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Low-grade inflammatory hepatopathy.

Normal echocardiogram.

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**INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS**

FNA of the liver warranted for further definition. At times VHS scoring can be increased if the radiographs are taken during diastole or with overlying excessive thoracic fat. However, structurally and functionally the heart is normal.

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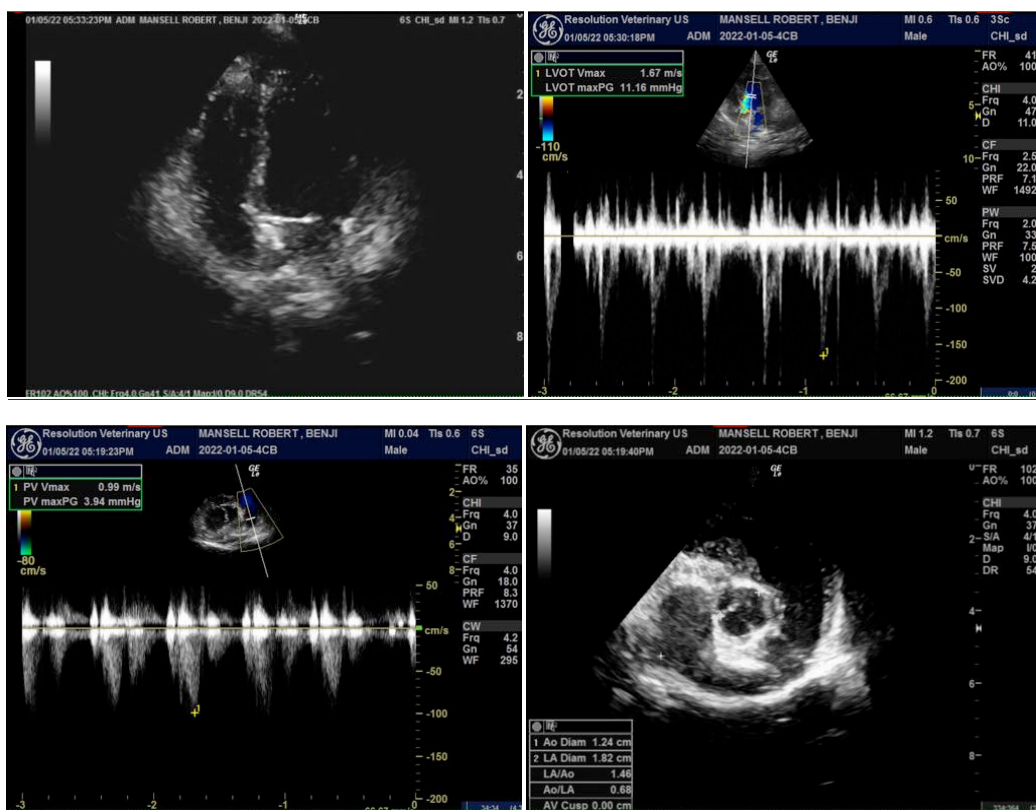
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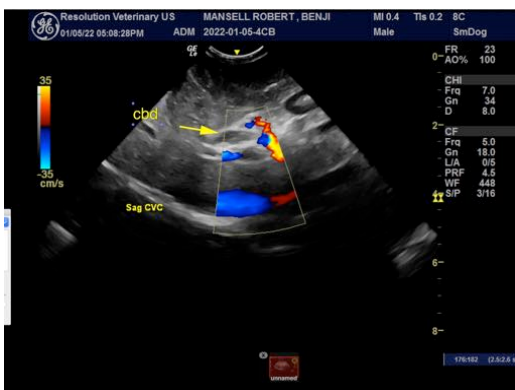
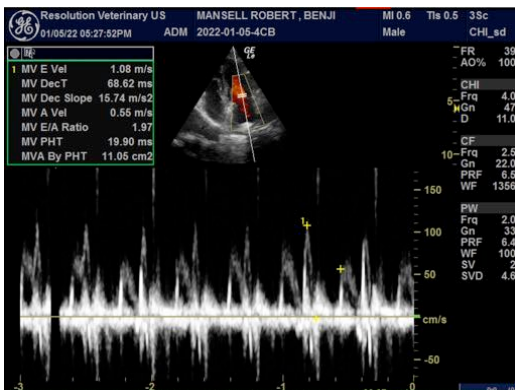
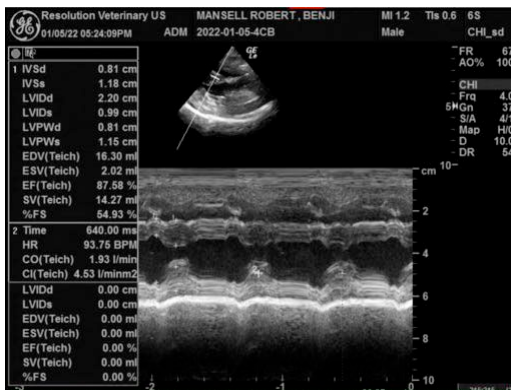
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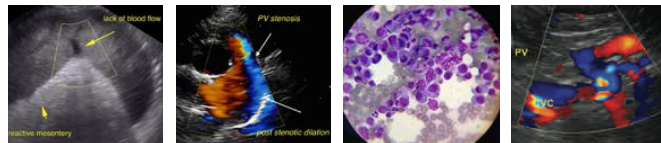
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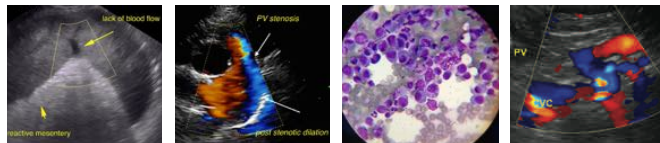
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The information and recommendations provided are based on the images presented by the referring veterinarian. No evaluation can be communicated regarding pathology that was not visible in the



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image/video clips provided.

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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.

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info@SonoPath.com

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