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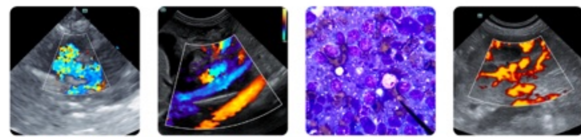


Clinical Sonography & Telecytology
Educational Teleconsultation Services™

PATIENT

Benji Chiu

SPECIES

Canine

BREED

Yorkshire Terrier

SEX

Neutered male

AGE

14 year

WEIGHT

6.8 lbs

INTERPRETED BY

Eric Lindquist, DMV
DABVP, Cert. IVUSS

IMAGING PERFORMED BY

Rebecca Hamilton

HOSPITAL NAME

Animal General
Hudson

REFERRING VET

Dr. Zelinski

INVOICE

72093

DATE

3/2/26

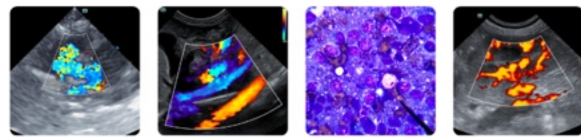
PRESENTING CLINICAL SIGNS

- New heart murmur
- follow up 3/1/25: L medial liver lobectomy and Splenectomy: Hepatocellular carcinoma
- no current meds
- BUN 38, Creat 1.7, ALT 243, AP

ULTRASONOGRAPHIC EXAMINATION OF THE HEART

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. Periodic arrhythmia was noted.

CANINE CARDIAC PARAMETERS	**MR VMAX** (m/s)	**TR VMAX** (m/s)	**LA/AO**	**LA/AO** (Heart Base)	**FS** (%)	**EF** (%)	**EPSS** (cm)
NORMAL PARAMETER	4.5-5.5	<2.7	1.3	<1.6	28-40	40-100	<0.6
PATIENT	5.28	-	1.3	1.3	42	75	0.3
CANINE CARDIAC PARAMETERS	**HR** (BPM)	**AV VMAX** (m/s)	**PV MAX** (m/s)	**BODY WEIGHT**	**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	BELOW	BELOW	BELOW	BELOW
PATIENT	70	1.01	0.58	6.8 lbs	2.1	2.47	



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ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN

Urinary System

The **urinary bladder** presented apical polypoid changes with a minimal amount of urine at the time of the sonogram. There were no calculi or overt masses.

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 in the kidneys. The right kidney measured 2.5 cm. The left kidney measured 2.4 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 1.17 x 0.48 cm at the cranial pole and 0.39 cm at the caudal pole. The left adrenal gland measured 1.72 x 0.5 cm at the cranial pole and 0.52 cm at the caudal pole.

Spleen

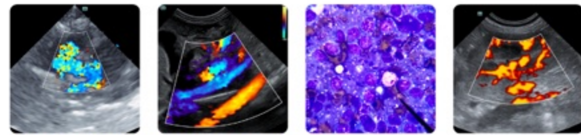
The **spleen** was not visualized as it was previously removed.

Liver

The left medial **liver** was not visualized owing to prior left medial liver lobectomy. The remainder of the liver presented a moderate amount of remodeling and subnormal size (in part from the prior lobectomy), yet increased portal markings are present. This is consistent with a history of inflammatory hepatopathy. There are some isoechoic to hypoechoic nodular changes noted. The portal vein to vena cava ratio was 1:1. The gallbladder presented acceptably thin walls with primarily anechoic content. The cystic and common bile ducts were normal.

Gastrointestinal

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 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 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.
Periodic arrhythmia.
Bladder polyps and cystitis pattern. Minor potential for carcinoma, yet likely polypoid hyperplasia potentially related to UTI.
Geriatric abdomen with degenerative renal, pancreatic and hepatic changes.
Isoechoic to hypoechoic nodular hepatic changes.

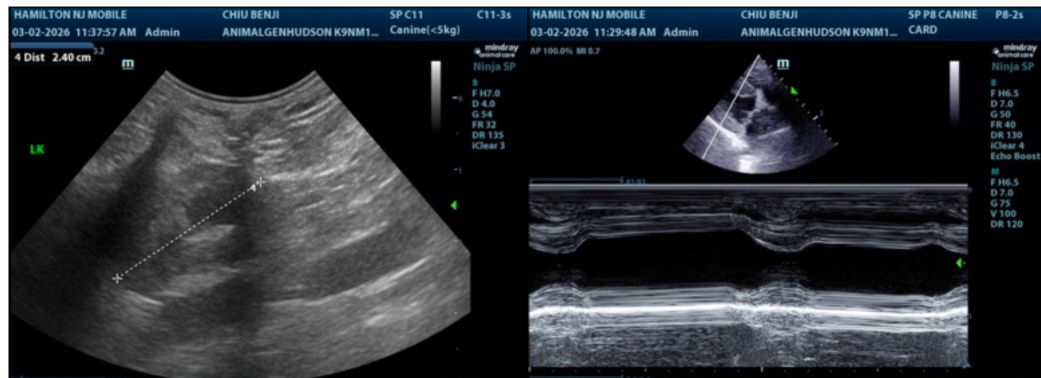
INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

EKG is indicated in this patient. The heart is stable without clinical disease. No overt contraindication for anesthesia of brief to moderate duration. I suggest Torbutrol premed, Propofol induction, Isoflo maintenance or similar protocol if anesthesia is desired. Blood pressure recommended if not already performed and 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 months, earlier if murmur grade increases or clinical signs initiate.

There was no evidence of return of the prior pathology.

Free catch urine with urinalysis is warranted to assess for any inflammatory sediment or abnormal transitional cells. BRAF testing may be appropriate. If the patient is negative for BRAF testing and there is no evidence of abnormal cells noted in the urine then cystocentesis and culture are indicated.

Bile acid profile is warranted to assess for any early hepatic dysfunction.



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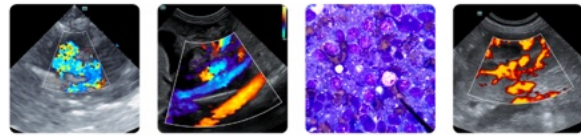
The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology



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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, Cert. IVUSS, CEO of SonoPath.com

info@SonoPath.com