IMAGING PERFORMED BY

SonoPath
Clinical Sonography & Telecytology
EDUCATIONAL TELECONSULTATION SERVICES™
1-800-838-4268 info@sonopath.com SonoPath.com

PATIENT

Kipper Williams

SPECIES

Canine

BREED

Beagle Mix

SEX

Neutered Male

AGE

9 years

WEIGHT

27.6 lbs.

INTERPRETED BY

R. McKenzie Daniel, DVM, DABVP (Canine and Feline)

IMAGING PERFORMED BY

Sarah Pender, CVT

HOSPITAL NAME

SVS Imaging QC

REFERRING VET

Dr. Haenni

INVOICE

12094

DATE

8/9/21

PRESENTING CLINICAL SIGNS

Lethargic, occasional inappetence, swollen belly

Abnormal PE/Chem/CBC/UA Results: Grade 3 murmur TP 7.9, ALP >993, ALT 249, ALB 5.1 Bile Acids Pre 7.3, Post 38.5 UA: pale yellow, SpGr 1012, pH 8, pro++

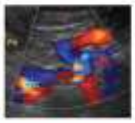
ULTRASONOGRAPHIC EXAMINATION OF THE HEART & ABDOMEN

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	5.8	2.8	1.4	1.3	48.4	81	0.43
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	BELOW	BELOW	BELOW	BELOW
PATIENT	83	1.6	0.83		3.4	3.0	

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 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. Color doppler assessment of the tricuspid valve revealed tract tricuspid valve insufficiency. 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). Color doppler assessment of the pulmonic valve revealed tract pulmonic valve insufficiency. No visible





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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, cystourethral junction, and visible pelvic urethra to a depth of 3.0 cm exhibited normal thickness and tone. Anechoic urine was present in the lumen with no uroliths or sediment. The ureteral papillae were normal. The ureters were not visible which is normal. No evidence of inflammatory or neoplastic changes was noted.

The residual prostate was symmetrically normal in size with uniform parenchyma and slight coarse echotexture measuring 0.73 cm in diameter.

The area of the aortic trifurcation was free of pathology.

Normal size and margination were present in the kidneys. A normal 1:3 cortex / medulla ratio was maintained. The medulla and cortices were uniform in texture with some increased echogenicity and mild loss of corticomedullary symmetry and definition expected for the age of the patient. No evidence of pelvic dilation was present. The left kidney measured 5.4 cm in length. The right kidney measured 5.5 cm in length.

Adrenal Glands

The bilateral adrenal glands exhibited mild prominent size yet maintained symmetrical capsule contour and primarily maintained homogeneous parenchyma. The left adrenal gland measured 2.0 cm length x 0.79 cm width at the caudal pole. The right adrenal gland measured 2.0 cm length x 0.72 cm width at the caudal pole.

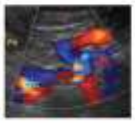
Spleen

The spleen exhibited a finely textured and homogenous parenchyma which was hyperechoic to the liver and renal cortical parenchyma. The capsule was smooth and regular without apparent expansion. The splenic vasculature at the hilus was normal in volume with no evidence of congestion or thrombosis. Acute to chronic inflammatory, neoplastic, or benign parenchyma changes were not noted.

Liver/ Gallbladder

The liver exhibited generalized enlargement. The parenchyma of the liver was subjectively normal in echogenicity compared to the spleen and renal cortices. The liver parenchyma was uniform with a mildly coarse echotexture. A solitary, primarily ovoid, symmetrically marginated homogeneous hepatoma-like mass lesion noted in the ventral mid to right liver measuring approximately 4.2 cm in diameter was present. Intermittent, echogenic to subtly hypoechoic parenchymal nodules were also present. An example of a nodule measured 1.4 cm in diameter. The hepatic and portal vasculature were normal in appearance without signs of congestion. The gallbladder was non-distended in size with mild gallbladder debris. The cystic and common bile ducts were normal.





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Gastrointestinal

The stomach presented intact wall layering with a normal wall layer ratio. The lumen of the stomach was empty with no signs of ileus, obstruction, or foreign material. The gastric body wall measured 0.35 cm width.

The small intestine presented intact wall layering with 1:3 muscularis/mucosa ratio. The lumen of the small intestine was empty with no signs of ileus, obstruction, or foreign material. The duodenum wall measured 0.41 cm width. The jejunum wall measured 0.32 cm width.

Normal visible colon wall layers were present with apparent formed feces in lumen.

Pancreas

The parenchyma of the left limb, body, and right limb of the pancreas presented isoechoic to the adjacent omental fat. A normal curvilinear capsule contour of the pancreas was present. The visible pancreatic duct was normal. No signs of active inflammation or neoplastic disease were evident.

Free Abdomen

No evidence of Intraabdominal masses, lymphadenopathy or effusion was present.

ULTRASONOGRAPHIC FINDINGS

Primary Findings

- Chronic mitral valve disease (ACVIM B1)
- Trace tricuspid valve and pulmonic valve insufficiency - no evidence of clinical pulmonary hypertension
- Hepatomegaly with focal hepatoma-like mass lesion and intermittent nonspecific parenchymal nodules
- Minor gallbladder debris (non-mucocele)
- Mild age-related kidneys
- Subjective mild prominent bilateral adrenal glands

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

The cause of the murmur is chronic degenerative valvular changes with secondary eccentric mitral valve insufficiency. The lack of left atrial enlargement implies that the risk of complication secondary to mitral valve insufficiency is low at this time and, without current clinical signs, indicates that medical therapy is not required. Conservative monitoring is recommended with a recheck echocardiogram in 6-12 months, sooner if clinical signs suggestive of heart disease develop.

Assuming normal clotting status, hepatic parenchymal FNA, as well as FNA of the hepatoma-like mass lesion, may be considered for screening cytology. The additional parenchymal nodules noted In the liver, although nonspecific, are likely suggestive of areas of nodular to lymphoid hyperplasia,

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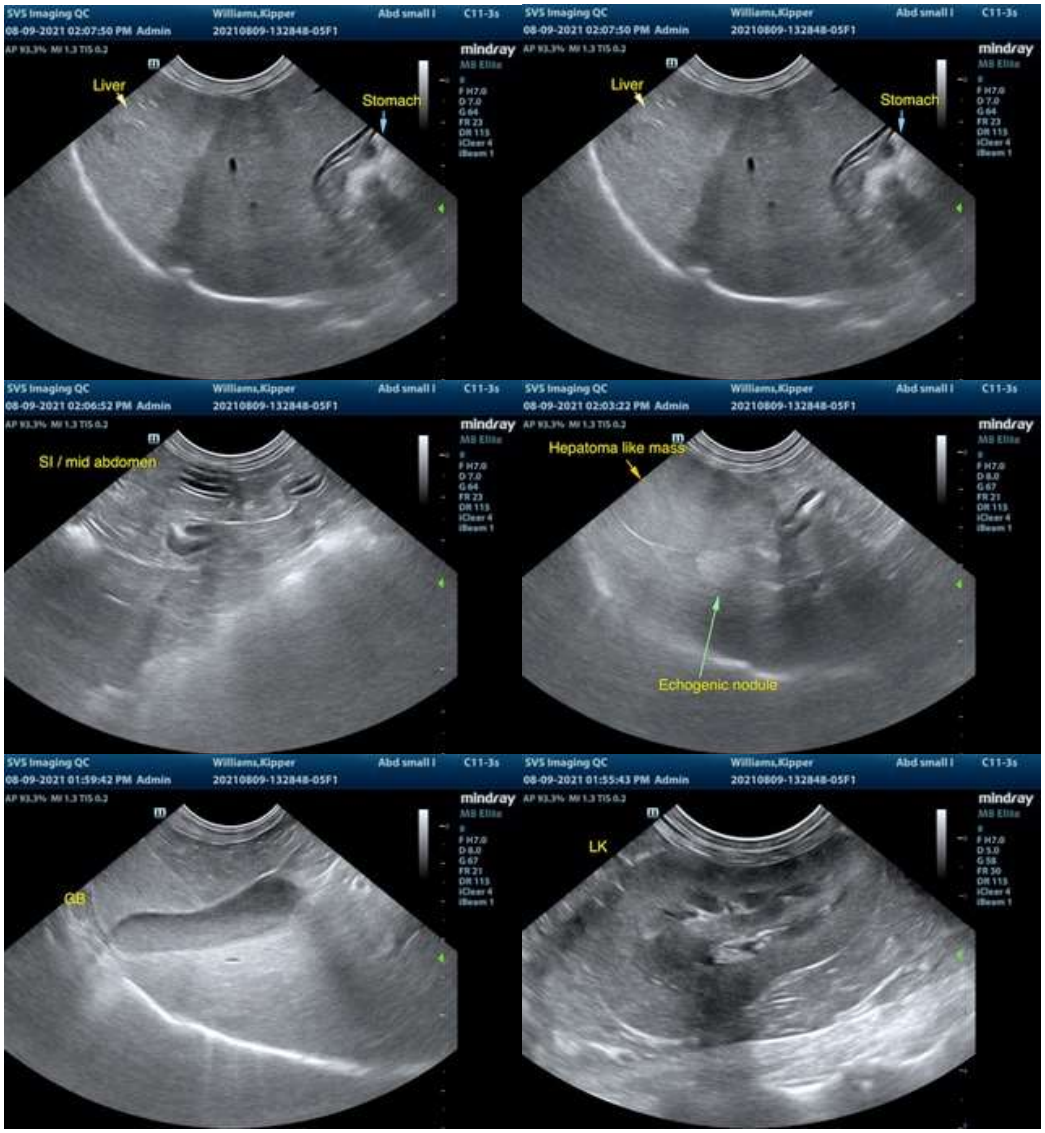
hematopoiesis, or small lipogranulomas. Potential for hepatic neoplasia cannot be definitively excluded yet is considered a less likely differential diagnosis.
Full adrenal workup may be considered if clinical signs suggestive of hyperadrenocorticism are present, given the specific gravity (<1020).

Without evidence of intraabdominal masses, lymphadenopathy, or effusion, the reported swollen belly may be owing to hepatomegaly. Hepatosupportive medications including Denamarin and Ursodiol may prove beneficial empirically.



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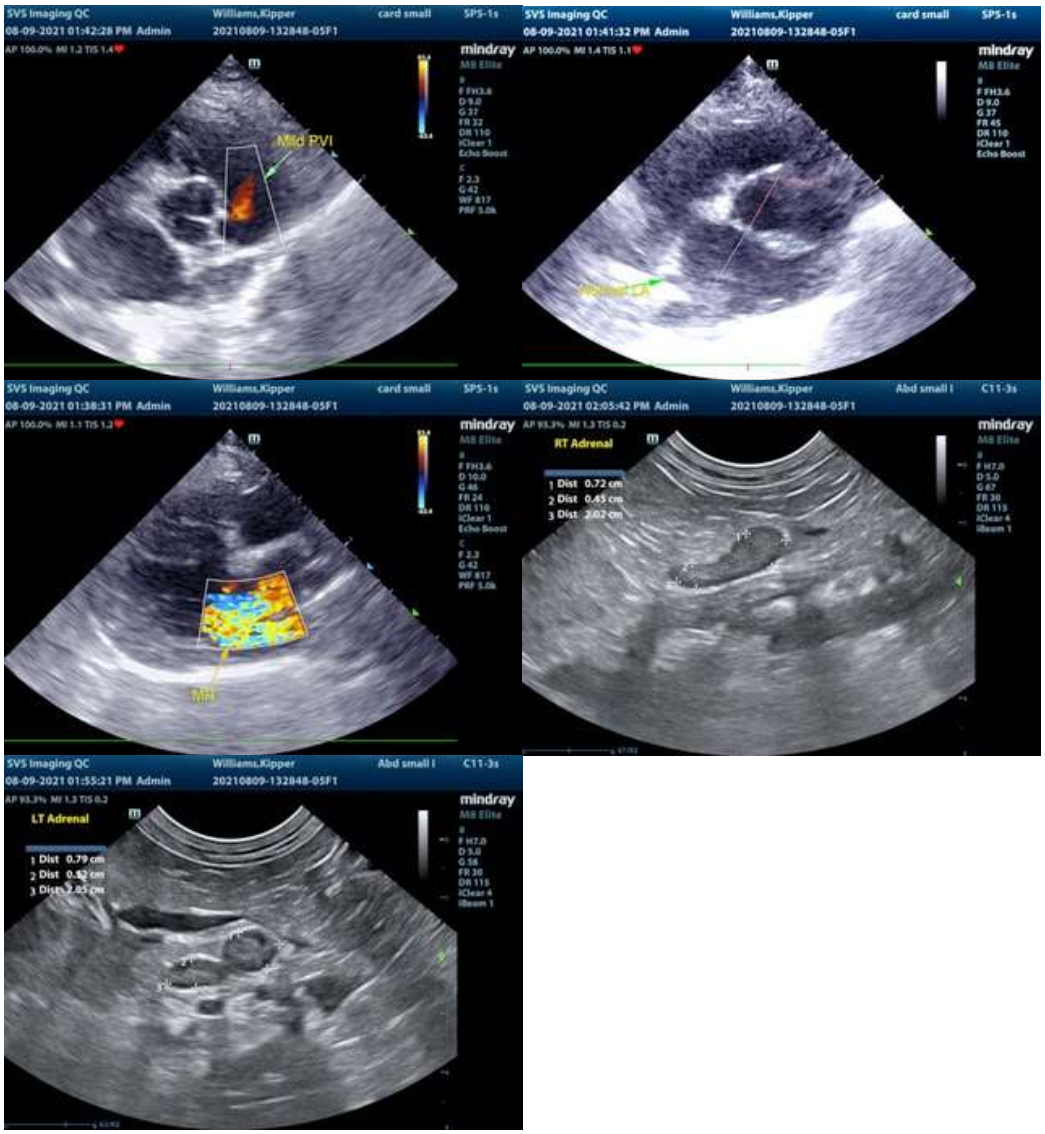

The information and recommendations provided are based on the images presented by the referring veterinarian. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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.

R. McKenzie Daniel, DVM, DABVP (Canine / Feline Practice)
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