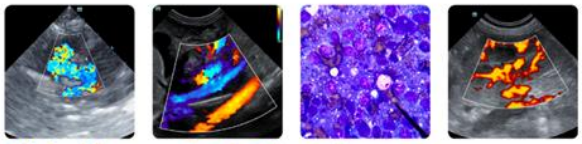


PATIENT

Charlie Smith

SPECIES

Canine

BREED

Mix

SEX

MN

AGE

11

WEIGHT

12.8

INTERPRETED BY

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

IMAGING PERFORMED BY

Dr Sharkaway

HOSPITAL NAME

Kew Gardens Animal Hospital

REFERRING VET

Dr Bassem

INVOICE
24884

DATE
05/20/2026

PRESENTING CLINICAL SIGNS

SEVERE DENTAL DISEASE

ANOREXIA

Abnormal PE/Chem/CBC/UA Results: BW- ELEVATED ALT, ALPK HEART MURMUR GRADE 3/6 AGGRESSION SEVERE DENTAL CALCULUS, GINGIVITIS

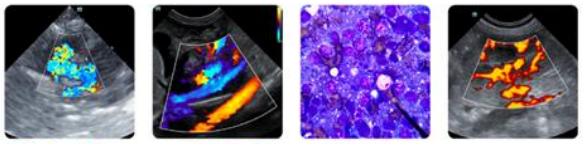
ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN AND HEART

CANINE CARDIAC PARAMETERS	MR VMAX (m/s)	TR VMAX (m/s)	LA/AO M-mode	LA/AO (Heart Base; Swe)	FS (%)	EF (%)	EPSS (cm)
NORMAL PARAMETER	4.5-5.5	<2.7	1.3	Up to 1.6	28-40	40-100	<0.6
PATIENT	--	--	--	1.3	40	72	0.1
CANINE CARDIAC PARAMETERS	**HR** (BPM)	**AV VMAX** (m/s)	**PV MAX** (m/s)	**BODY WEIGHT**	**LAD** LA MAX 4 Chamber	**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	NM	--	0.8	12.8	2.4	2.2	--

Cardiac Presentation

The echocardiogram in this patient demonstrated normal left atrial size based on 2 different LA measurement methods. Chamber volumes and echogenicity were normal. The cranial and caudal mitral valve leaflets presented vegetative thickening consistent with endocardiosis with valvular prolapse. Doppler indicated measurable moderate to significant 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.

Urinary System



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The urinary bladder, trigone, cystourethral junction, and visible pelvic urethra to a depth of 2 cm exhibited normal thickness and tone. Anechoic urine was present in the lumen with no evidence of urine/lumen sediment, mineral, or calculi. The ureteral papillae were normal. The ureters were not visible which is normal. No evidence of inflammatory or neoplastic changes was noted.

The area of the residual prostate appeared normal and free of pathology.

Normal renal size with asymmetrical margination was present in both kidneys. The renal cortex presented uniformly increased in echogenicity with uniform echotexture. The renal cortex appeared to be hypertrophied resulting in an altered cortex: medulla ratio. Moderate to marked loss of corticomedullary distinction was also present. The renal medullary volume was subjectively reduced. Bilateral pyelectasia was present. The left kidney measured 3.6 cm in length. The right kidney measured 3.2 cm in length.

The area of the aortic trifurcation was free of pathology.

Adrenal Glands

The left and right adrenal glands were not definitively visualized. No obvious pathology was present in the area of the bilateral adrenal glands.

Spleen

The spleen exhibited primarily finely textured and homogenous parenchyma which was hyperechoic to the liver and renal cortical parenchyma. Discrete hyperechoic nodule/nodules were present throughout the cranial to caudal parenchyma. An example measured 0.36 cm in diameter. 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 or neoplastic changes were not noted. The echogenic nodules tend to trend benign and are most consistent with benign hyperplasia or myelolipomas.

Liver/Gallbladder

The liver presented normal in size. Mild non-homogenous hyperechoic hepatic parenchyma exhibiting multiple discrete hypoechoic intraparenchymal nodules. An example measured 0.66 cm in diameter. The capsule of the liver was symmetrical in margination. The hepatic and portal vasculature were normal in appearance without signs of congestion. Subjective adequate vascular volume. The gallbladder was non-distended in size with mild non-organized debris. The cystic and common bile ducts were normal.

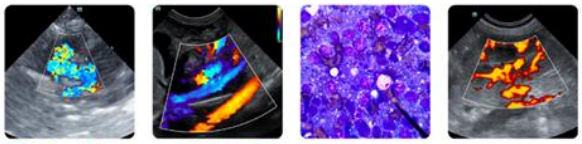
Gastrointestinal

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 small intestine presented intact wall layering with 1:3 muscularis/mucosa ratio. The lumen of the small intestine was empty with no signs of mechanical/metabolic ileus, obstruction or foreign material.

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

Pancreas



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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 was evident.

Free Abdomen

No omental masses, overt lymphadenopathy or peritoneal effusion was present.

ULTRASONOGRAPHIC FINDINGS

Primary

- Chronic mitral valve disease with valve prolapse (B1)
- Chronic renal changes exhibiting pyelectasia
- Small hyperechoic splenic nodule/ nodules- suggestive of probable benign myelolipomas
- Hepatopathy exhibiting hyperechoic parenchyma and discrete hyperechoic nodules- vacuolar hepatopathy, nodular hyperplasia, hematopoiesis, inflammatory disease such as cholangiohepatitis or similar, fibrosis, occult neoplasia thought less likely yet not excluded
- Non-organized gallbladder debris

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

The cause of the murmur is subjective mild chronic degenerative valvular changes with secondary MR. No evidence of additional issues such as DCM criteria, LV systolic dysfunction or clinical pulmonary hypertension. The lack of left atrial enlargement implies that the risk of complication secondary to mitral valve insufficiency is relatively low at this time and, without current clinical signs, indicates that medical therapy is not required at this stage. Prognosis at this stage is variable and serial sonographic monitoring is recommended with a recheck echocardiogram in 6 months, sooner if clinical signs suggestive of heart disease develop. Cardiac anesthetic risk is considered mild.

A urinary workup including UA, C/S +/- UPC level if non-inflammatory proteinuria for renal staging is recommended. The pyelectasia in both kidneys is suspected to be secondary to chronic renal changes or pelvic scarring, although unilateral or bilateral chronic infection not excluded. An FNA cytology of the liver assuming normal clotting status and using 25ga needle is warranted for further clarification. Further assessment of the liver may include adrenal screening if clinical signs consistent with adrenal disease and bile acid profile.

Abdominal anesthetic risk at least mild given degree of chronic renal changes and non-specific hepatopathy. Correlation with urinary workup and assessment ALB, GLU, BUN and CHOL levels as indicators of hepatic function prior to anesthesia is recommended.

Suggested anesthetic protocol may include opioid or Benzodiazepine pre-med, induction with Propofol or Alfaxalone, and appropriate gas anesthesia with avoidance of alpha 2 agonists.

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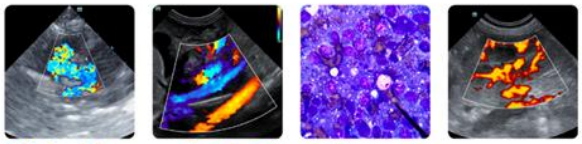

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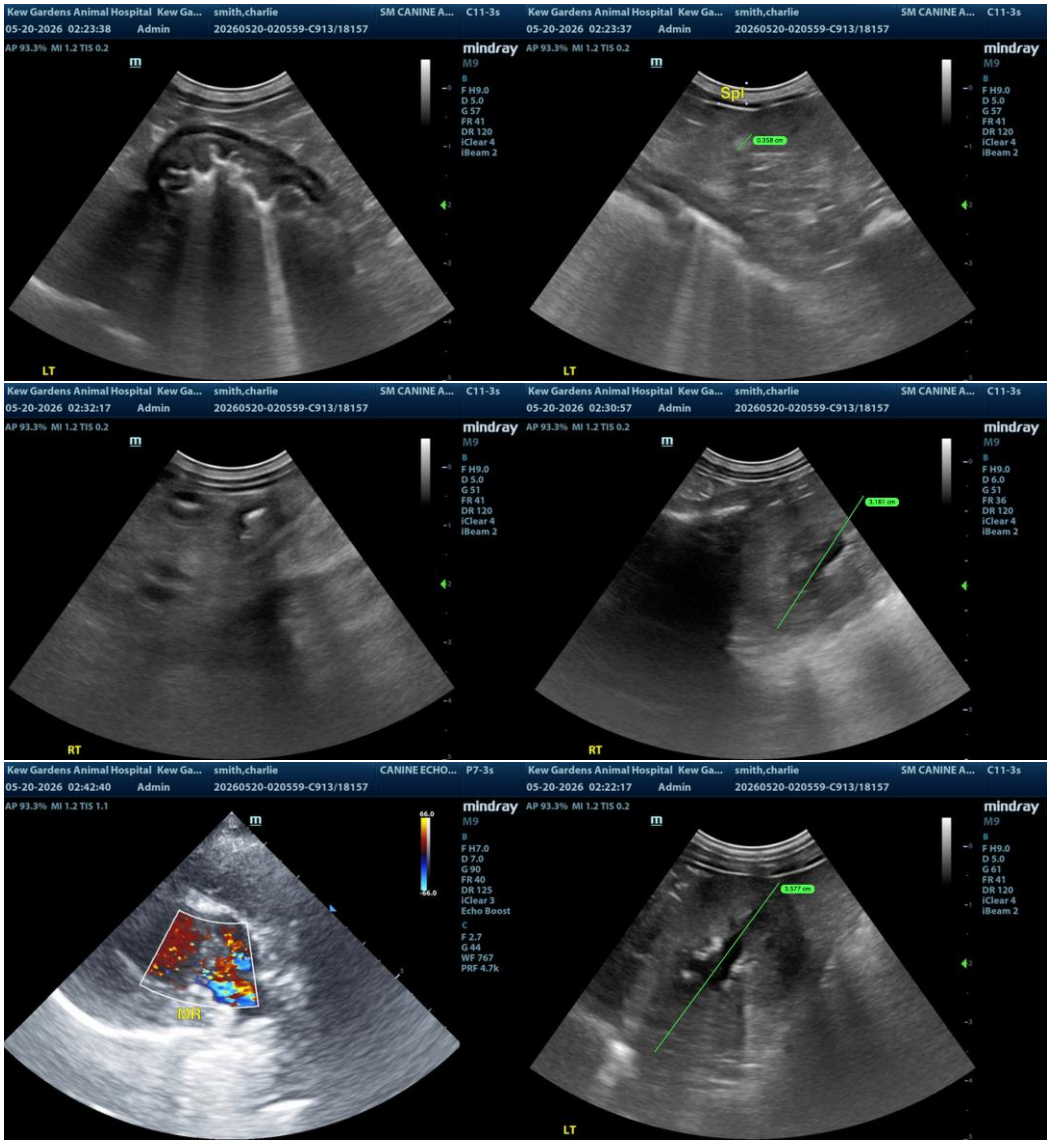

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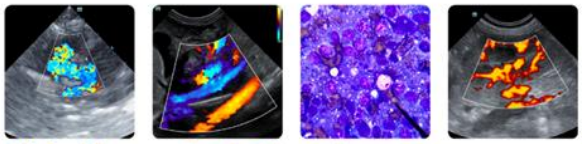

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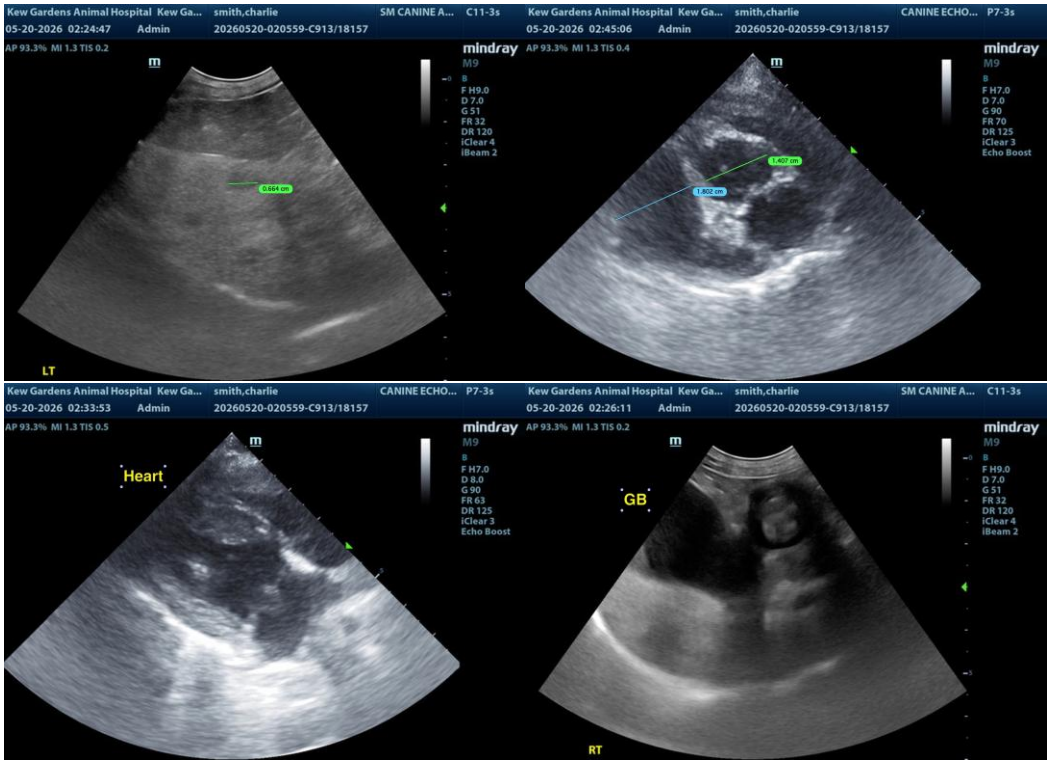

The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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.

R. McKenzie Daniel, DVM, DABVP (Canine/Feline Practice)
info@sonopath.com