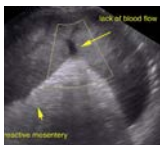
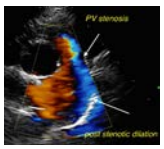
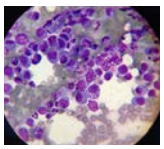
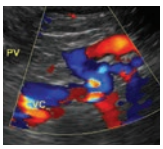
SonoPath
Clinical Sonography & Telecytology
EDUCATIONAL TELECONSULTATION SERVICES™

SonoPath.com
1-800-838-4268 info@sonopath.com

PATIENT
Sophie Tobia

SPECIES
Canine

BREED
Pug

SEX
Spayed Female

AGE
13 Years

WEIGHT
22 Pounds

PRESENTING CLINICAL SIGNS

Chest - chronic cough. Unresponsive recently to antibiotics and theophylline. Abd - weight loss. Current meds: theophylline and gabapentin.
Abnormal PE/Chem/CBC/UA Results: ALP 1200.

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			1.2	1.3	43.4	78	0.22
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	NM	1.1	0.8		2.25	2.58	

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

IMAGING PERFORMED BY
Kelly Vazquez

HOSPITAL NAME
Ho-Ho-Kus VH

REFERRING VET
Dr. Dan Eisenberg

INVOICE
26356

DATE
10/19/21

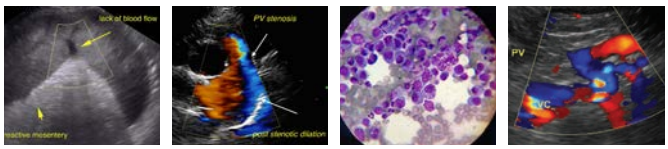
Cardiac Presentation

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.

Urinary System

The urinary bladder, trigone, cystourethral junction, and visible pelvic urethra to a depth of 2.0 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 were noted.

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



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loss of corticomedullary symmetry and definition expected for the age of the patient. No evidence of pelvic dilation was present. The left kidney measured 4.0 cm. The right kidney measured 4.5 cm.

The area of the aortic trifurcation was free of pathology.

Adrenal Glands

The adrenal glands were uniform in size and contour with a uniformly hypoechoic parenchyma. The left adrenal gland measured 1.4 cm length x 0.58 cm at the caudal pole. The right adrenal gland measured 1.3 cm length x 0.48 cm 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

The liver was subjectively normal in size, structure, and contour. The liver parenchyma was mildly nonuniform and hypoechoic to the spleen with a moderate coarse echotexture and subjective mild to benign parenchymal remodeling. The hepatic and portal vasculature were normal in appearance without signs of congestion. The gallbladder was non-distended with moderate non-dependent, subjectively mobile, uniformly echogenic luminal debris. Subtle anechoic to hypoechoic rim was noted between the non-dependent debris and inner luminal walls, suggestive of mucus. No evidence of gallbladder or peripheral inflammation. The common bile duct was 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. Gastric body wall measured 0.33 cm.

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. Minor to intermittent jejunal mucosal speckling was noted. Duodenum wall measured 0.5 cm. Jejunum wall measured 0.34 cm.

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 was evident.

Free Abdomen

No overt lymphadenopathy or peritoneal effusion was present.

ULTRASONOGRAPHIC FINDINGS

- Normal echocardiogram
- Heterogeneous pancreas
- Structurally normal gastrointestinal tract with mild jejunal mucosal speckling
- Moderate gallbladder debris, possible early gallbladder mucocele
- Mild age related kidneys
- Mild vacuolar hepatopathy pattern

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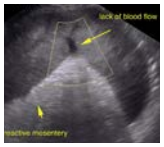
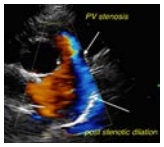
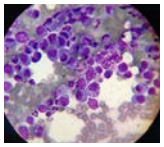
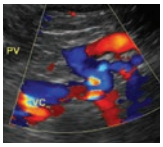

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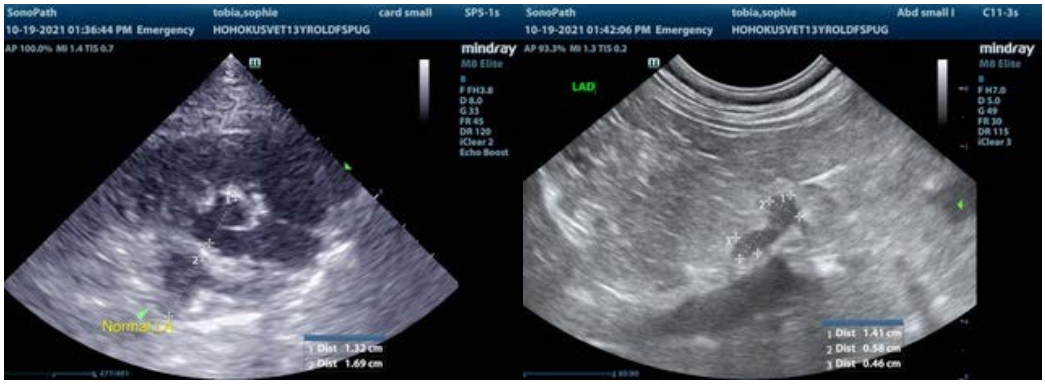
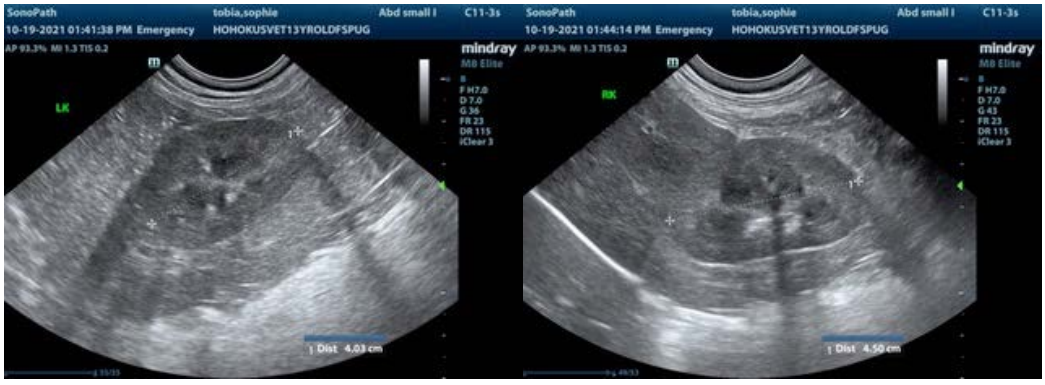
INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

Overtly normal cardiac structure and function without evidence of significant valvular insufficiency, systolic dysfunction, or evidence of clinical pulmonary hypertension. The lack of left or right heart chamber enlargement indicates that the coughing in this patient is non-cardiogenic in origin. No indication for cardiac medications. Correlation with 3-view chest radiographs (if not recently done) is suggested.

No overt evidence of significant abdominal visceral pathology as an obvious cause of weight loss. The heterogeneous pancreas is non-specific and may indicate age related pancreatic changes, while the possibility of low-grade to chronic pancreatitis (which may present essentially sonographically normal) may be possible. Correlation with cranial abdominal palpation to assess for discomfort as well as GI panel to include PLI, TLI, cobalamin and folate (given the patient's weight loss) is recommended. Hepatosupportive medications including Ursodiol with continued monitoring for evidence of increasing cholestasis is suggested.





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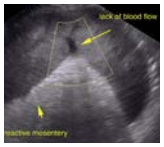
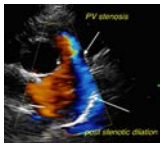
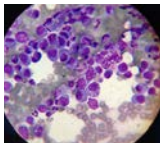
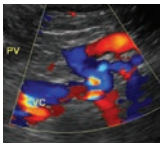

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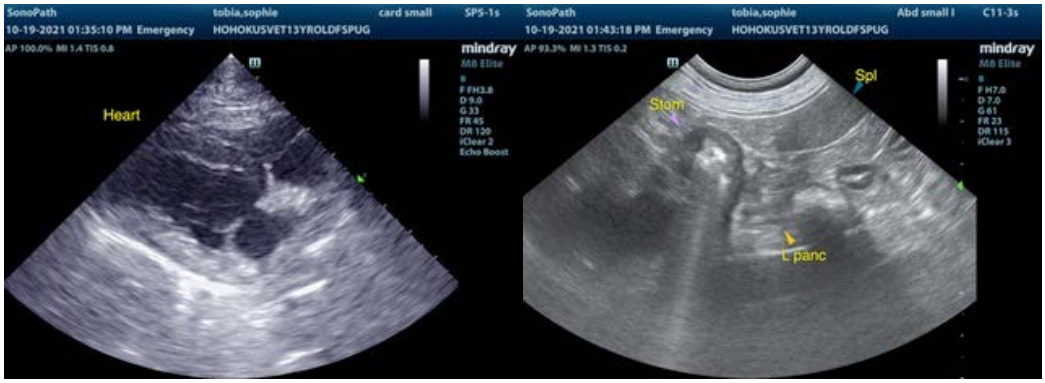

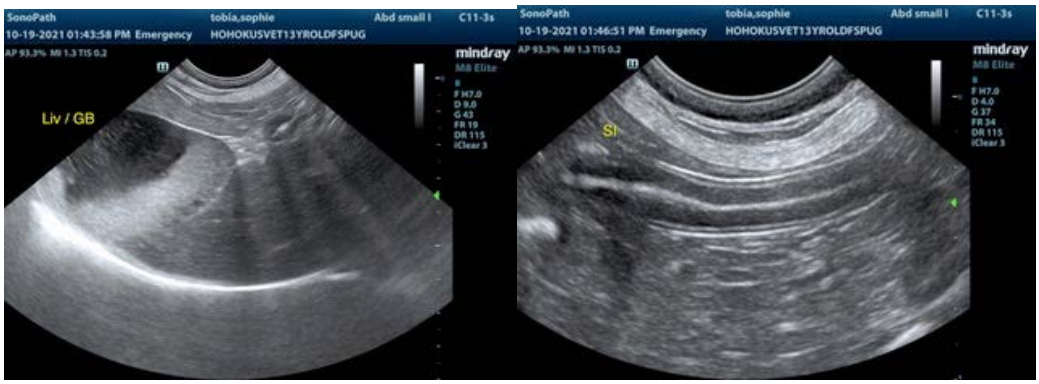

The information and recommendations provided are based on the images presented by the referring veterinarian. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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