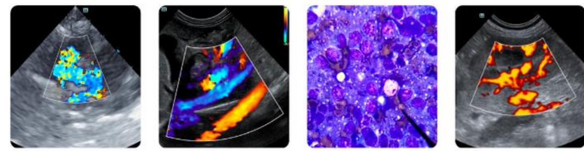

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**PATIENT**

Shadow Malcom

**SPECIES**

Feline

**BREED**

DSH

**SEX**

FS

**AGE**

15yr

**WEIGHT**

9lb

**INTERPRETED BY**

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

**IMAGING PERFORMED BY**

Rebecca Hamilton

**HOSPITAL NAME**

Flanders Vet Clinic

**REFERRING VET**

Dr Cheng

**INVOICE**
23255

**DATE**
12/17/2025

## PRESENTING CLINICAL SIGNS

Severe ascites, heart murmur 3/4, trying to determine a cause of ascites. Tachycardia, 325 ml fluid removed from abd. Via abdominocentesis meds: amlodipine 1.25 mg SID

Abnormal PE/Chem/CBC/UA Results: Elevated BUN/CR - mild, increased calcium

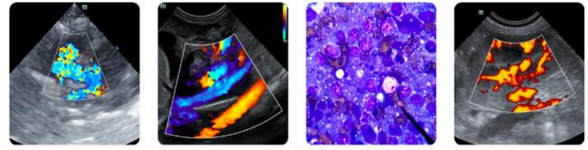
## ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN AND HEART

| FELINE CARDIAC PARAMETERS | BODY WEIGHT (kg) | HR (BPM) | IVSd (cm) | LVIDd (cm) | LVWd (cm) | FS (%) | EF (%) |
|---|---|---|---|---|---|---|---|
| NORMAL PARAMETER | ------ | 150-240 | 0.3-0.6 | 1.0-2.1 | 0.25-0.6 | 35-67 | 80-100 |
| PATIENT | -- | NM | 0.59 | 0.9 | 0.6 | 36 | 69 |
| **FELINE CARDIAC PARAMETERS** | **LA/AO** M-Mode | **LA/AO HEART BASE** (Sisson) | **LAD** LA MAX 4 Chamber | | **LVOT VEL.** (m/s) | **RVOT VEL.** (m/s) | **IVRT** (m/) |
| NORMAL PARAMETER | <1.5 | 1.6 | 0.7-1.7 | | <1.6 | <1.3 | 40-60 |
| PATIENT | -- | 1.2 | 1.0 | | 1.0 | 0.8 | NM |
| Sisson D et al. JVIM 1991; 5: 232, Jacobs et al. Am J Vet Res 1985; 46:1705 | | | | | | | |

### *Cardiac Presentation*

The echocardiogram in this patient demonstrated normal to possible volume contracted left atrial size with normal structure. No LA spontaneous contrast. Chamber volume and blood echogenicity were normal. The cranial and caudal mitral valve leaflets presented minor irregular age-related changes that are not clinically significant at this time with adequate extension in systole and union in diastole. No overt MR on Doppler. The left ventricle presented increased free wall and septal thicknesses with mild alinear contour. Mild decreased left ventricle internal dimension. The myocardium presented some echogenic remodeling consistent with expected age-related change. Contractility of the ventricular walls was adequate and in normal range for this breed and patient size. The left ventricular outflow tract demonstrated normal laminar flow with subjectively unremarkable structure. Subjective assessment of the right atrium and auricle revealed normal size, structure and content. No evidence of masses was noted. Tricuspid valvular assessment demonstrated expected findings for this age patient. The right ventricle was of normal size (1/3 diameter of LV), echogenicity and thickness. Pulmonic tract assessment revealed normal valve structure, laminar flow, and diameter (approx.1:1 pa/ao ratio). No dilation due to heartworm disease, cor pulmonale, stenosis, or pulmonic hypertension was noted. No visible pericardial or free pleural fluid was noted. The mediastinum was free of masses in the visible window. No overt arrythmia was present.

### *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.

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 to moderate loss of corticomedullary symmetry and definition expected for the age of the patient. No evidence of pelvic dilation was present. The left kidney measured 3.6 cm in length. The right kidney measured 3.4 cm in length.

The area of the aortic trifurcation was free of pathology.

### *Adrenal Glands*

The left adrenal gland was uniform in size and contour with a uniformly hypoechoic parenchyma. The left adrenal gland measured 0.52 cm width. The right adrenal gland was uniform in size and contour with a uniformly hypoechoic parenchyma. The right adrenal gland measured 0.47 cm width.

### *Spleen*

The spleen exhibited subnormal size (0.38 cm at the mid spleen) and 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 was subjectively normal in size, structure, and contour. The liver parenchyma was uniform and hypoechoic to the spleen with a mild coarse echotexture. Normal vascular volume. The hepatic and portal vasculature were normal in appearance without signs of congestion. The gallbladder was non-distended in size with thin walls and primarily anechoic luminal content. 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.

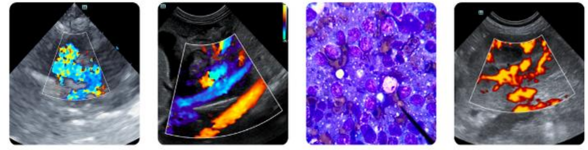
The small intestine presented intact wall layering with 1:3 muscularis/mucosa ratio. The lumen of the small intestine was empty with no signs of mechanical/metabolic ileus, obstruction or foreign material.

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

### *Pancreas*

The area of the pancreas was sonographically normal.

### *Free Abdomen*





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Generalized non-uniform omentum and moderate volume mildly echogenic peritoneal effusion was present with no overt visualized significant omental lymphadenopathy.

## ULTRASONOGRAPHIC FINDINGS

### Primary

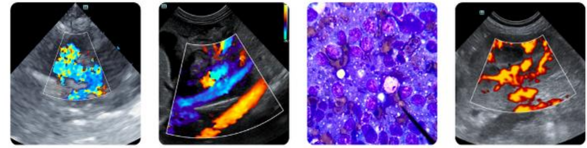
- Borderline thickened LV with mild decreased LV internal dimension, adequate LV systolic function
- Normal LA
- Normal RA / RV
- Non-congested liver
- Subjective volume contracted spleen
- Sonographically unremarkable gastrointestinal tract
- Bilateral chronic renal changes
- Moderate volume mildly echogenic peritoneal effusion and generalized non-uniform omentum

## INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

The LV presentation may indicate mild pseudohypertrophy secondary to volume change / dehydration or mild primary hypertrophic cardiomyopathy. Regardless of classification, the lack of left or right heart chamber enlargement or volume overload, normal LV systolic function or arrhythmia is not consistent with cardiogenic peritoneal effusion. A definitive cause of the murmur was not obvious with flow murmur suspected.

The free fluid has mild echogenic changes to it. Given no reported subnormal albumin that would diminish oncotic pressures to the point of causing free fluid, no evidence of passive congestion of the hepatic vasculature or vena cava, no significant diffuse hepatic disease as well as no evidence of intestinal perforation or other pathology that would be responsible for effusion of this nature, lymphatic obstruction owing to carcinomatosis and lymphomatosis or similar is of primary concern.

Recommend abdominocentesis, rapid cytospin and rapid slide preparation of the sediment to conserve the integrity of the cells would be recommended in order to optimize the cytological interpretation. Culture of the fluid can also be considered if any suspicion of inflammatory elements is noted. FIP or nonspecific peritonitis are also potentials therefore FIP titers on the fluid may be considered if clinically indicated and pending additional fluid analysis however FIP is thought less likely given patient age. Carcinomatosis/ lymphomatosis are the primary differentials.





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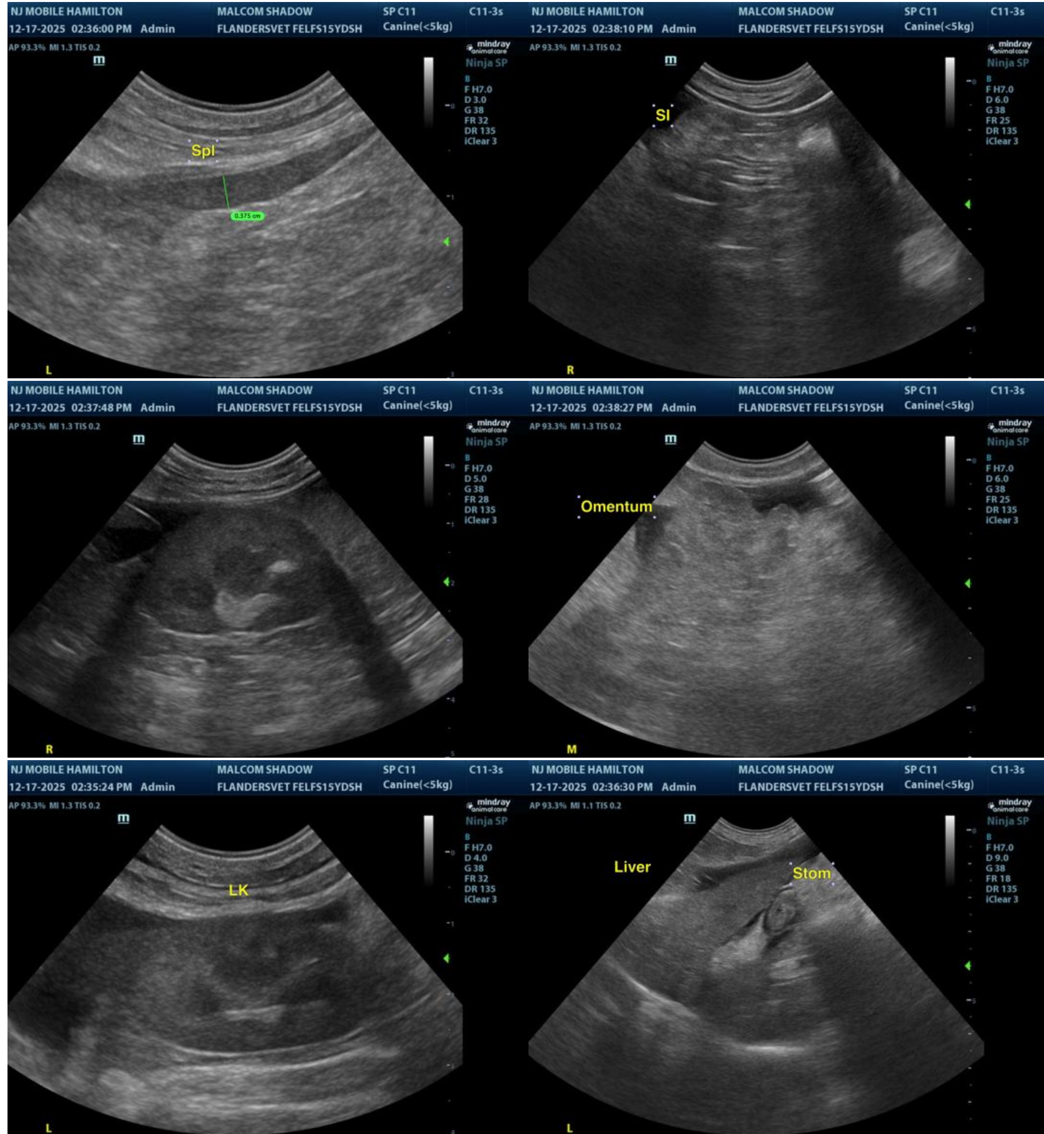
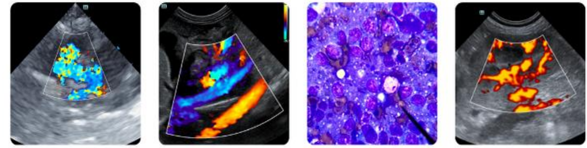


New Jersey Mobile
FUELED BY SONOPATH VETERINARY ULTRASOUND



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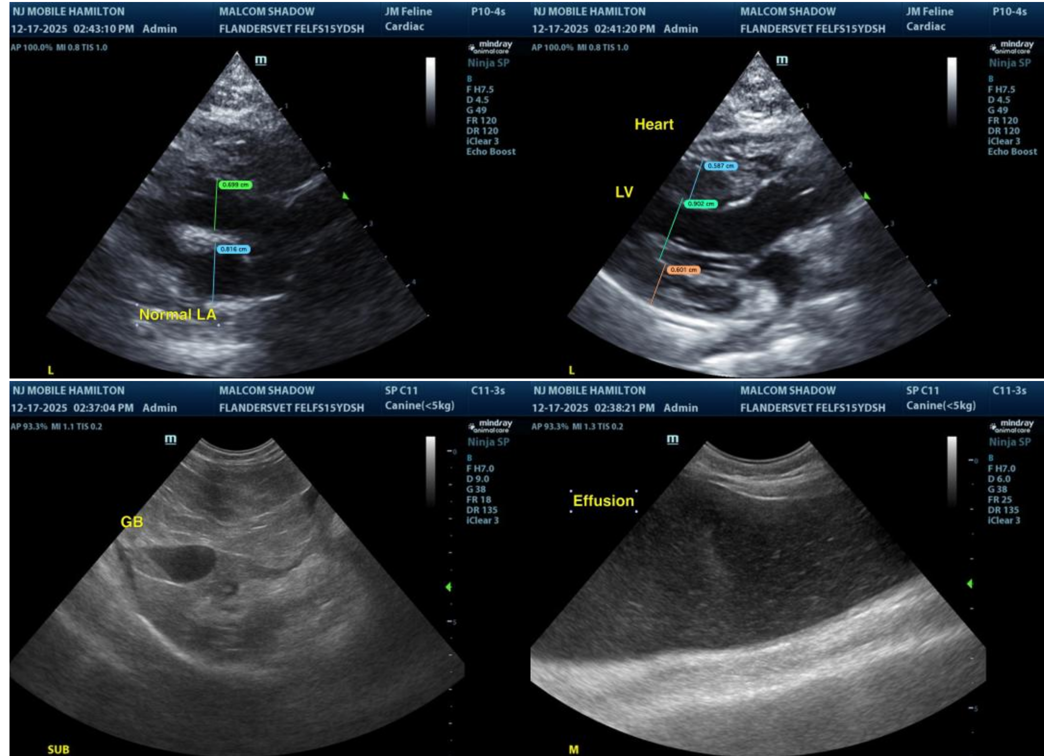


**The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.**

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.

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