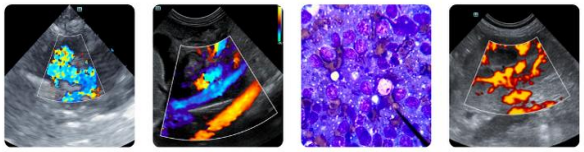


Clinical Sonography & Telecytology
Educational Teleconsultation Services™

**PATIENT**

Isabelle Galante

**SPECIES**

Canine

**BREED**

Yorkshire

**SEX**

FS

**AGE**

NA

**WEIGHT**

8.2lb

**INTERPRETED BY**

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

**IMAGING PERFORMED BY**

Rebecca Hamilton

**HOSPITAL NAME**

Newton Veterinary Hospital

**REFERRING VET**

Dr Chan

**INVOICE**
24543

**DATE**
04/21/2026

## PRESENTING CLINICAL SIGNS

Suspected CHf, resp distress, cyanotic, suspected crackles

Meds: Lasix, Cerenia

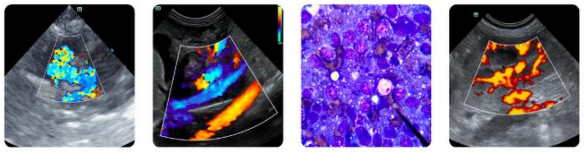
Abnormal PE/Chem/CBC/UA Results: WBC 19.2, Neu 17, BUN 37, Phos 9.3, GLU 163, Alb 4.6, TP 7.8

## 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 | -- | 4.7 | -- | 1.45 | 45 | 78 | 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 | 1.2 | 1.1 | 8.2lb | 2.1 | 1.7 | -- |

### *Cardiac Presentation*

The echocardiogram in this patient demonstrated normal to mildly reduced left atrial size compared to the previous study and 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. Doppler indicated moderate eccentric insufficiency. The left ventricle presented thicknesses with linear contour and was not dilated nor restricted with mild decreased LV dimension compared to the previous study. 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 mild increased size with normal structure and content. No evidence of masses was noted or chamber overload. Tricuspid valvular assessment demonstrated thickening with moderate TR on Doppler. Measured TR velocity 4.7 m/s max (estimated ~ 88 mmHg) The right ventricle was mildly increased in dimension compared to the previous study with normal free wall 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.





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### *Urinary System*

The urinary bladder, trigone, cystourethral junction, and visible pelvic urethra 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 loss of corticomedullary symmetry and definition expected for the age of the patient. No evidence of pelvic dilation was present. Minor bilateral medullary mineral was present. The left kidney measured 3.4 cm in length. The right kidney measured 3.6 cm in length.

The area of the aortic trifurcation was free of pathology.

### *Adrenal Glands*

The bilateral adrenal glands were normal in size. Mild parenchyma heterogeneity and mild capsule asymmetry was present without suspicion for overt neoplasia. The left adrenal gland measured 0.55 cm width in the caudal pole. The right adrenal gland measured 0.53 cm width in the caudal pole.

### *Spleen*

The spleen exhibited primarily finely textured and homogenous parenchyma which was hyperechoic to the liver and renal cortical parenchyma. Multiple to coalescing hyperechoic nodules were present throughout the medial parenchyma. An example measured 0.75 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.

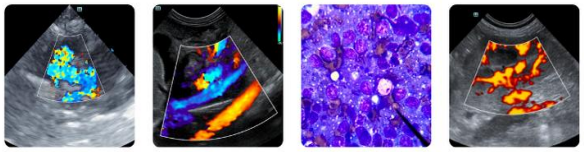
### *Liver/Gallbladder*

The liver 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. Normal hepatic and caudal vena cava vascular volume without evidence of congestion. The gallbladder was non-distended in size with thin walls and primarily anechoic luminal content. No evidence of gallbladder/peripheral gallbladder inflammation or wall edema was present. The cystic and common bile ducts were normal.

Transdiaphragmatic view revealed comet tail lung pattern, which is echogenic sound wave interface with microconsolidations within the caudal lung field. The lung field should not be visualized by sonogram unless pathology is present.  Chest radiographs are recommended to rule out alveolar/lung disease such as neoplasia, thromboembolic disease, chronic inflammatory disease with microconsolidation.

### *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.





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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 pancreas was normal in size and contour with heterogeneous mildly hyperechoic parenchyma compared to adjacent omentum. No signs of active inflammation or neoplasia.

### *Free Abdomen*

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

## ULTRASONOGRAPHIC FINDINGS

### Primary

- Persistent compensated chronic mitral valve disease (B1)
- Mild reduced LA /LV dimension- likely secondary to diuretic therapy
- Moderate to severe pulmonary hypertension -compensated
- Normal volume moderate remodeled liver with transdiaphragmatic comet tail artifact
- Pancreatic remodeling/ fibrosis pattern
- Mild chronic renal changes with mild medullary mineral
- Hyperechoic to coalescing splenic nodules - most consistent with benign myelolipomas

## INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

No evidence of left or right congestive heart failure criteria. The patient's clinical signs are owing to moderate to severe pulmonary hypertension which appears progressive compared to the previous study. In cases of pulmonary hypertension, aside from heartworm disease underlying etiology is often misunderstood yet may be associated with concurrent chronic or acute on chronic lower airway disease, thromboembolic disease or other.

No evidence of overt abdominal pathology as a contributing factor i.e. neoplasia or adrenal disease. Sildenafil trial 1-3 mg/kg PO BID based on clinical response with concurrent respiratory support is recommended. No overt indication for diuretic therapy given no evidence of right or left congestive heart failure. Exercise restriction is advised. This patient will remain at increased risk for progressive pulmonary hypertension with potential for sudden death.

Sonographic monitoring indicated with recheck echo suggested in 4-6 weeks, sooner if clinically indicated. Elective anesthesia is not advised.

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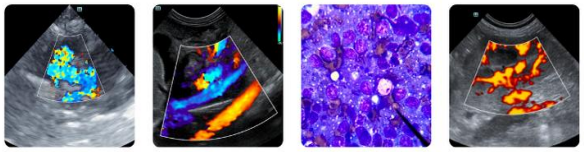

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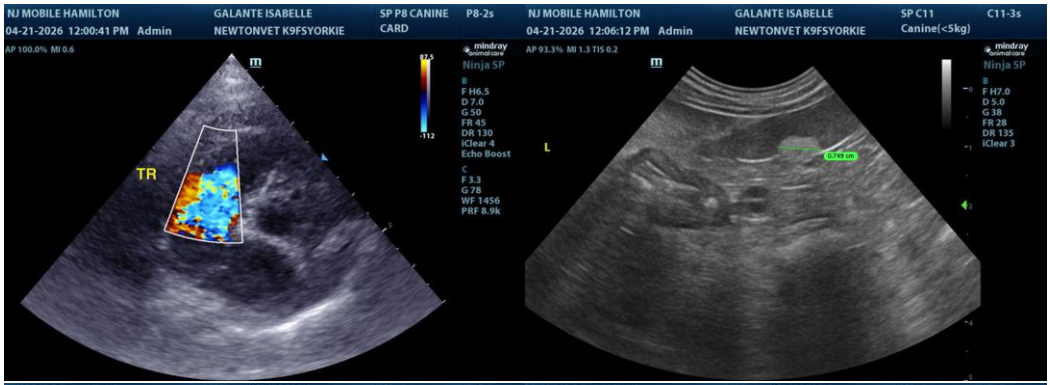



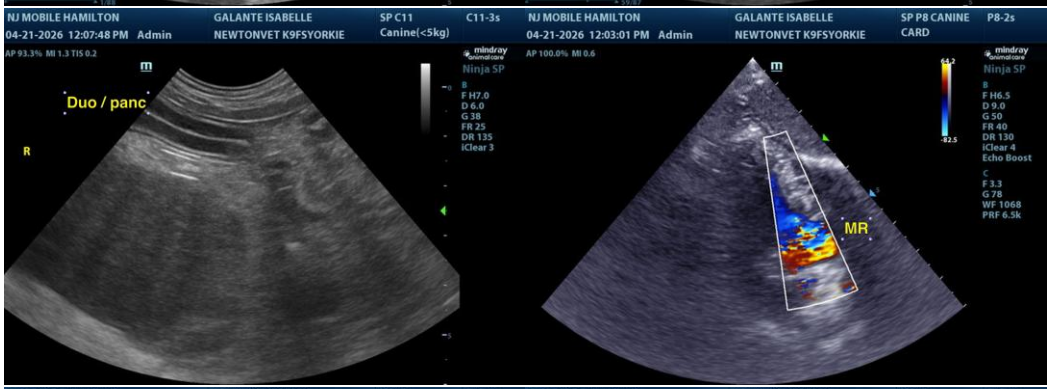


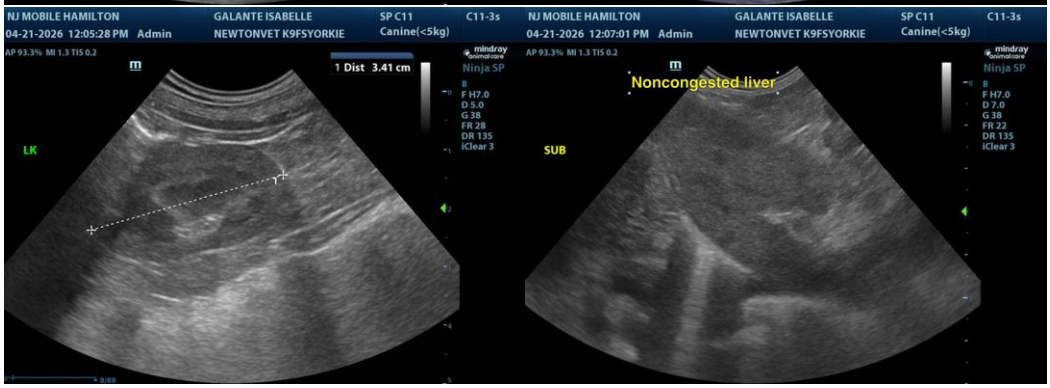

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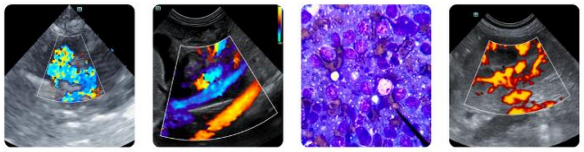

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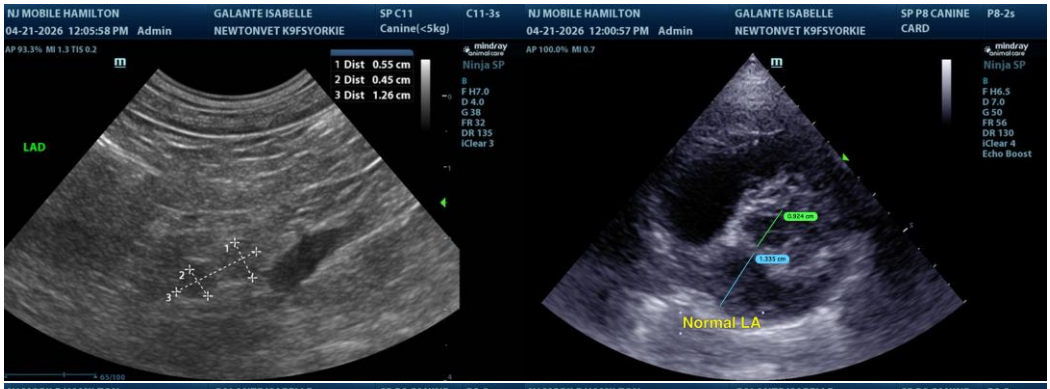


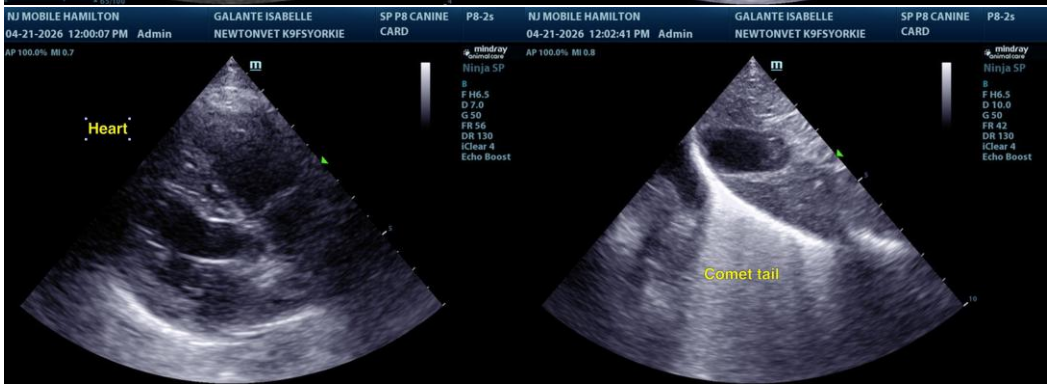


**The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.**

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