



**PATIENT**

Chloe Monson

**SPECIES**

Canine

**BREED**

Bichon Frise

**SEX**

Spayed Female

**AGE**

11 Years

**WEIGHT**

6.62 kg

**INTERPRETED BY**

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

**IMAGING PERFORMED BY**

Dr. Schwanebeck

**HOSPITAL NAME**

Animal Emergency  
Hospital Deland

**REFERRING VET**

Dr. Schwanebeck

**INVOICE**

45846

**DATE**

3/11/23

**PRESENTING CLINICAL SIGNS**

Presented to clinic as transfer for anemia and ventricular arrhythmia. Presented for anorexia 2 days and lethargy. Patient's HCT at rDVM was 21%, ALT mildly elevated at 262. Clear abdominal effusion collected from abdomen.

Abnormal PE/Chem/CBC/UA Results: PE: Heart murmur, arrhythmia PCV: 24%, total solids: 7.3g/dL

**ULTRASONOGRAPHIC EXAMINATION OF THE HEART & ABDOMEN**

**Cardiac Presentation**

The echocardiogram in this patient demonstrated subjective mild to moderate increased **left atrial** size based on LA/AO heart base measurement. LA/AO heart base approximately 1.9. 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 subjective normal thicknesses with linear contour and was not overtly dilated nor restricted. The **myocardium** presented normal echogenicity without subjective evidence of significant fibrotic or ischemic disease. **Contractility** of the ventricular walls was subjectively adequate with approximate fractional shortening estimated at 45%. The **right atrium** and auricle revealed overtly normal size, structure and content without overt evidence of masses in the area of the right atrium/auricle. **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. 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. No overt evidence of pericardial or mediastinal mass lesions. Regional peripheral pericardial pulmonary comet tail artifact with possible discrete peripheral pulmonary nodules.

**Urinary System**

The urinary bladder, trigone, cystourethral junction, and visible pelvic urethra to a depth of 3.0 cm exhibited normal thickness and tone. Primarily anechoic urine was present in the lumen. Mild non-dependent particulate sediment was present without evidence of calculus formation, which may indicate cellular debris/protein, crystalline debris or mucus. The ureteral papillae were normal. The ureters were not visible which is normal. No evidence of inflammatory or neoplastic mural changes were noted.

Normal size and margination were present in the kidneys. A normal 1:3 cortex / medulla ratio was present with mild loss of corticomedullary border demarcation, with mild non-uniform corticomedullary parenchyma echogenicity including discrete cortical to corticomedullary nodules. Example of left kidney nodule measured 0.43 cm. Mild bilateral pyelectasia. The left kidney measured 3.5 cm. The right kidney measured 3.8 cm.

**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 0.50 cm at the cranial pole and 0.45 cm at the caudal pole. The right adrenal gland measured 0.78 cm at the cranial pole and 0.66 cm at the caudal pole.

**Spleen**

The spleen was overtly normal in size and contour with generalized parenchyma heterogeneity. Subjective normal splenic vascularity. No visualized splenic masses or nodules.



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**Liver**

The liver was overtly normal in size and contour. 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. No evidence of gallbladder wall edema or inflammatory criteria. 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.

The small intestine presented primarily intact wall layering with maintained 1:3 muscularis/mucosa ratio. A segmental intestinal mural mass potentially in the area of the duodenum was present measuring approximately 4.5 cm length x 2.1 cm in wall width, and the intestinal mural mass measured up to 1.0 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**

Moderate volume peritoneal effusion noted exhibiting mild effusion echogenic changes, which may suggest mild fluid cellularity.

Generalized non-uniform to discretely nodular parenchyma, including ill-defined non-uniform to nodular ventral omental to possible ventral body wall mass lesions. Example of mass lesions measured 3.0 cm in diameter.

No overt lymphadenopathy

**ULTRASONOGRAPHIC FINDINGS**

- Non-congested hepatopathy, normal gallbladder
- Heterogeneous spleen
- Nonuniform / nodular kidneys with bilateral pyelectasia
- Nonuniform / nodular omentum with several ill-defined ventral omental or possible ventral body wall mass lesions
- Segmental intestinal mural mass
- Mild to moderate enlarged left atrium
- Subjective normal left ventricle



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- Transdiaphragmatic and peripheral pulmonary comet tail artifact with possible discrete peripheral pulmonary nodules

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- Moderate peritoneal effusion with mild effusion echogenic changes

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**INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS**

Although the mild / moderate left atrium enlargement may predispose to left side heart congestion, the degree of left atrium enlargement was not obviously consistent with left heart failure. The right heart / right atrium was normal in conjunction with no evidence of hepatic congestion, indicating the peritoneal effusion is likely noncardiogenic in origin. A consistent to severe arrhythmia may predispose to right side heart failure, yet a significant / consistent arrhythmia i.e. tachycardia was not obvious. Likewise, the total solids (assuming albumin is adequate, albumin level not provided) suggests decreased hydrostatic pressure is less likely as a cause of the effusion. Neoplastic disease such as carcinomatosis, lymphomatosis or similar is of primary concern with concern for bicavitary involvement. Effusion analysis, cytology +/- C/S if evidence of inflammatory cells and thoracic radiographs are recommended. Extremely guarded prognosis.

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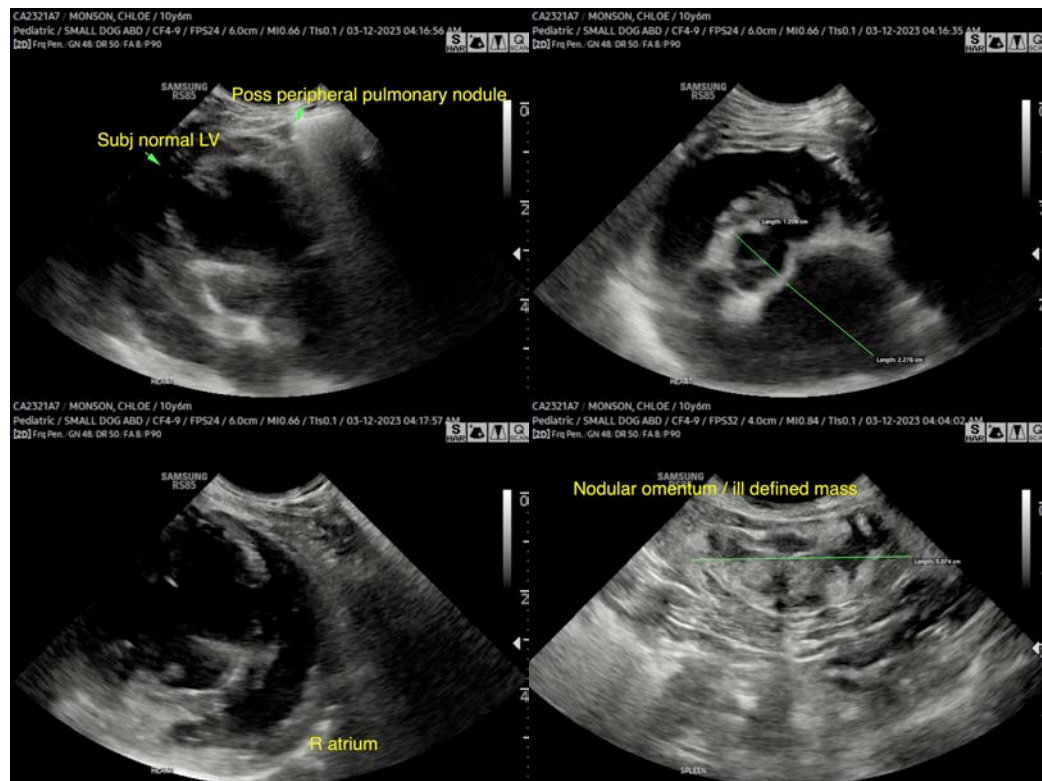
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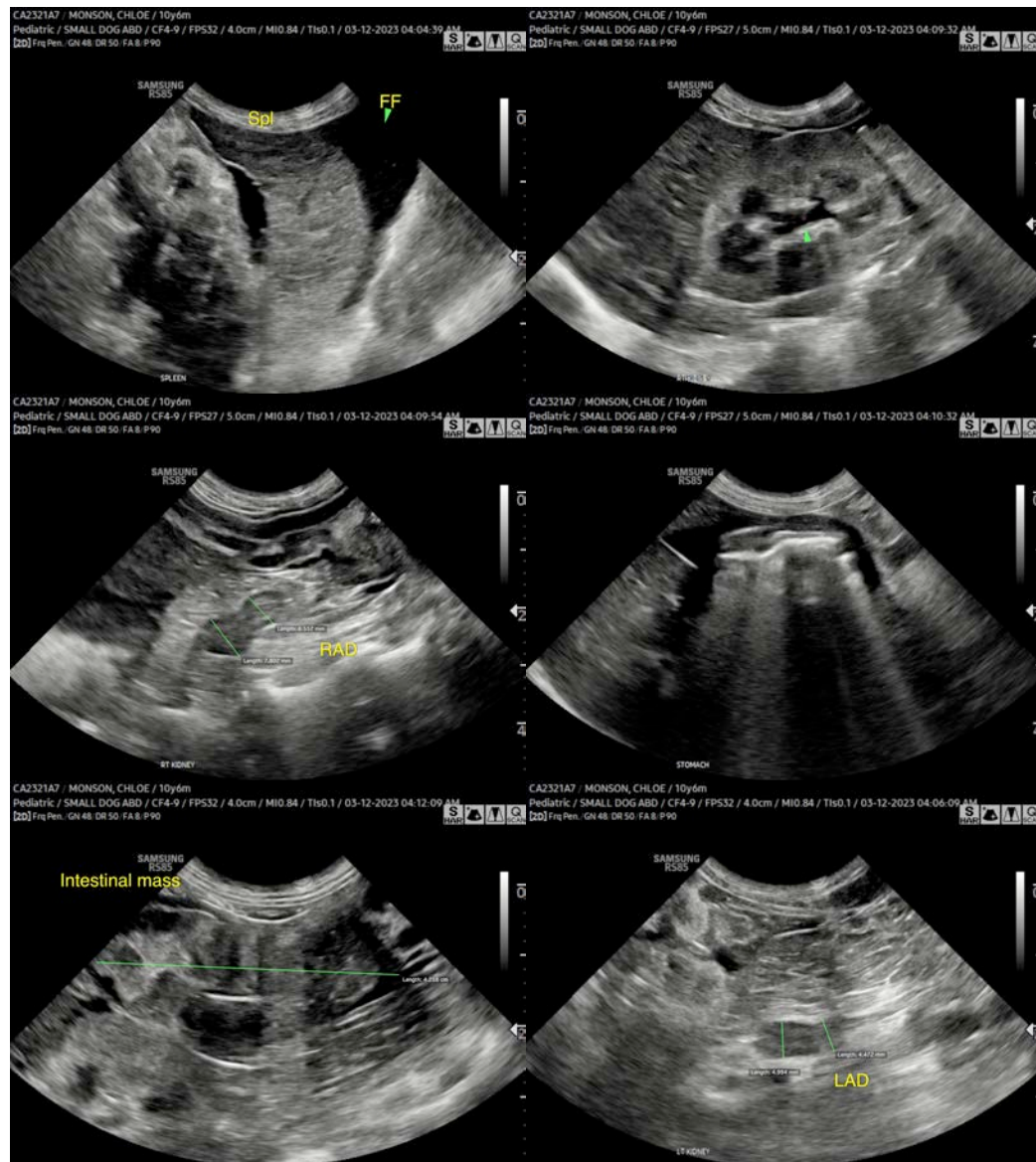
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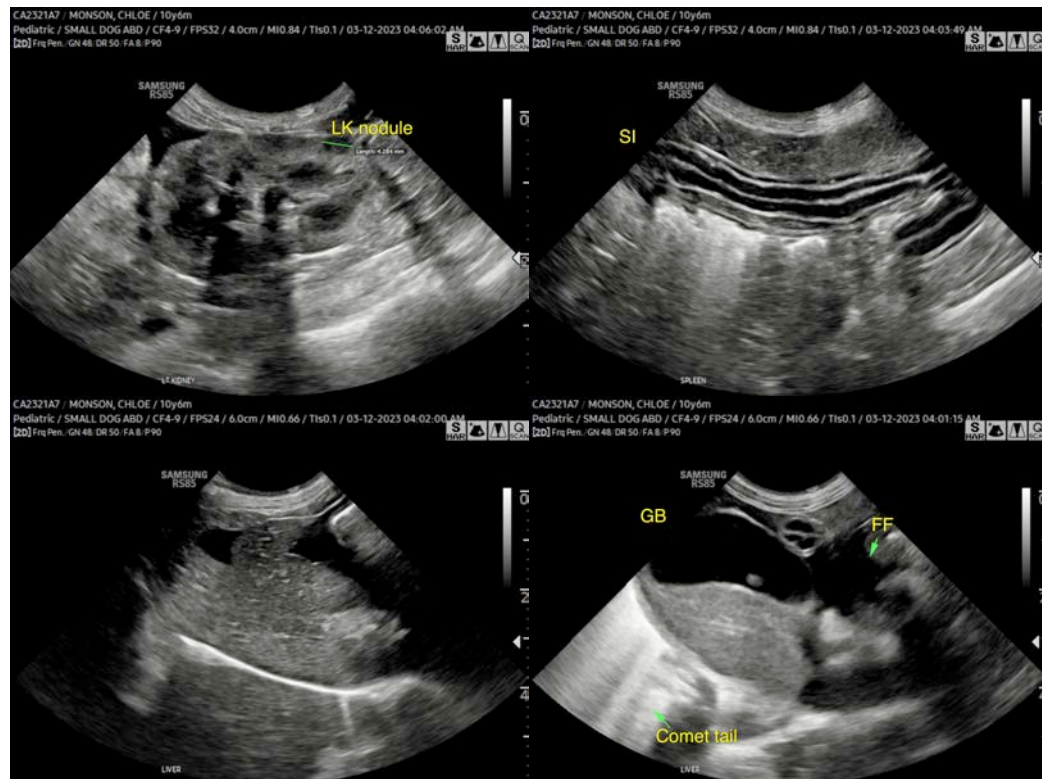
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The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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