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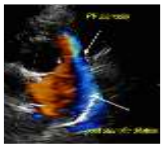
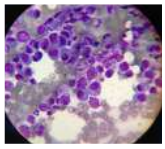
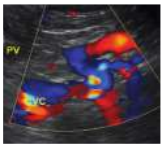
Clinical Sonography & Telecytology
EDUCATIONAL TELECONSULTATION SERVICES™

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

**PATIENT**

Knoll Sullivan

**SPECIES**

Canine

**BREED**

Golden Retriever

**SEX**

MN

**AGE**

12 years

**WEIGHT**

68.4 lbs.

**INTERPRETED BY**

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

**IMAGING PERFORMED BY**

Shari Reffi, CVT

**HOSPITAL NAME**

Animal Mansion

**REFERRING VET**

Dr. Parker

**INVOICE**

13188

**DATE**

1/27/22

## PRESENTING CLINICAL SIGNS

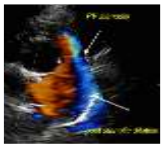
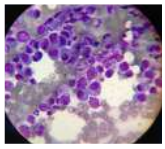
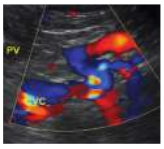
Semi-acute hx of coughing. Now anorexic and lethargic. Weight loss, abdominal breathing and palpated cranial organomegaly. No current meds.
Abnormal PE/Chem/CBC/UA Results: Pending

## 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** | | | 1.4 | 1.33 | 32.6 | 64.6 | 0.43 |
| **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 | BELOW | BELOW | BELOW | BELOW |
| **PATIENT** | 86 | 1.3 | 1.0 | | 3.84 | 3.8 | |

### *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. Brief sonographic assessment of the subjective cranial thorax revealed potential for possible sternal lymphadenopathy, cranial thoracic pulmonary nodule or other. This potential lymph node or nodule measured approximately 1.0 cm in diameter.

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### *Urinary System*

The urinary bladder, trigone, and cystourethral junction 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 was noted.

The residual prostate was symmetrically normal in size with uniform parenchyma and slight coarse echotexture.

Several medial iliac lymph nodes were present. These lymph nodes were homogenous, mildly hypoechoic and smoothly marginated. A normal width: length ratio was maintained (<0.5). Evidence of perilymphatic inflammation was evident. An example of lymph node size was 2.3 cm x 1.0 cm.

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. The left kidney measured 7.2 cm in length. The right kidney measured 7.5 cm in length.

### *Adrenal Glands*

The left adrenal gland was uniform in size and contour with a uniformly hypoechoic parenchyma. The left adrenal gland measured 3.0 cm length x 0.52 cm width at the caudal pole.

A non-expansive, uniform hyperechoic nodule was present occupying the majority of the right adrenal parenchyma. The nodule did not exhibit signs of mineralization or vascular invasion. The nodule measured 2.7 cm x 1.0 cm. The overall right adrenal gland measured 4.2 cm length x 1.6 cm width at the cranial pole and 0.80 cm width at the caudal pole.

### *Spleen*

The spleen exhibited generalized enlargement yet maintained symmetrical capsule contour with primarily maintained a finely textured homogeneous parenchyma with intermittent discreet, non-expansive, hypoechoic nodules.

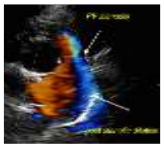
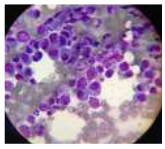
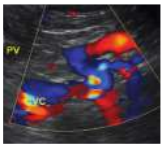
### *Liver/ Gallbladder*

The liver presented enlarged in size. The parenchyma of the liver was subjectively normal in echogenicity compared to the spleen and renal cortices. The liver parenchyma was uniform with a mildly coarse echotexture. The capsule of the liver was symmetrically rounded to mildly swollen in margination. The hepatic and portal vasculature were normal in appearance without signs of congestion. Mild to moderate, nondependent yet nonorganized, nonmineralized gallbladder debris was present. 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 contained mild, retained ingesta/chyme most consistent with post prandial presentation without 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 ileus, obstruction, or foreign material.

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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 were evident.

***Free Abdomen***

No omental masses or lymphadenopathy was noted. A small scant pocket of peritoneal free fluid was noted between the cranial spleen and caudal left liver.

## ULTRASONOGRAPHIC FINDINGS

***Primary Findings***

- Overtly normal cardiac structure and function
- Possible sternal lymphadenopathy, cranial pulmonary nodule or other
- Mild splenomegaly exhibiting focal to intermittent nonspecific yet non-expansive nodules
- Nonspecific hepatomegaly
- Overtly normal gastrointestinal tract
- Right adrenal nodule - functional vs nonfunctional adenoma, hyperplasia, emerging neoplasia such as pheochromocytoma, adenocarcinoma or other
- Mild medial iliac lymphadenopathy
- Small pocket of scant perihepatic to perisplenic free fluid

## INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

Assuming normal clotting status, hepatosplenic FNA using a 25-gauged needle is recommended for screening cytology and further clarification.

If accessible, medial Iliac lymphatic FNA could also be considered yet may be difficult given the current size of the medial iliac lymph nodes and location. Sonographic monitoring for progressive enlargement of the medial iliac lymph nodes, liver and spleen would be a more conservative approach. Screening blood pressure, given the right adrenal nodule, to assess for evidence of hypertension is recommended. Correlation with pending lab work is recommended, while further assessment may include a GI panel to include PLI/TLI/Cobalamin/Folate to rule out occult gastrointestinal disease, as well as three view chest radiographs, given the potential for noncardiogenic lower respiratory disease and possible pulmonary nodules vs. sternal lymphadenopathy.

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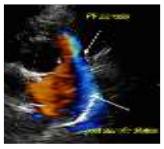
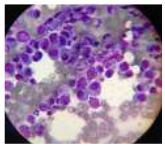
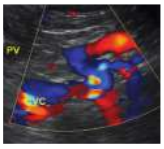

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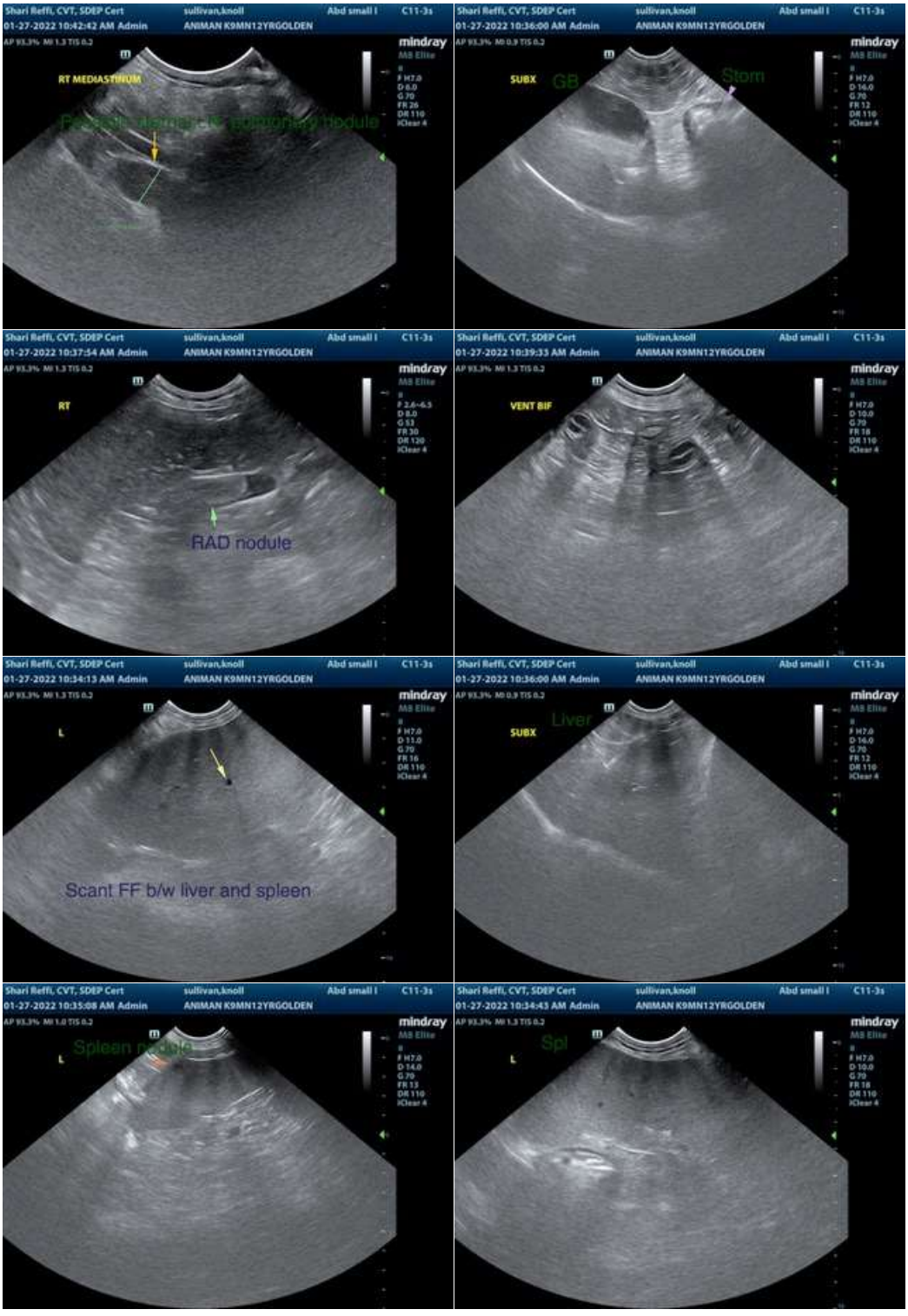

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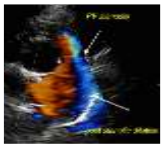
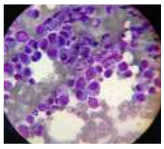
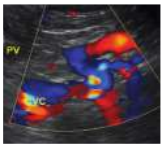

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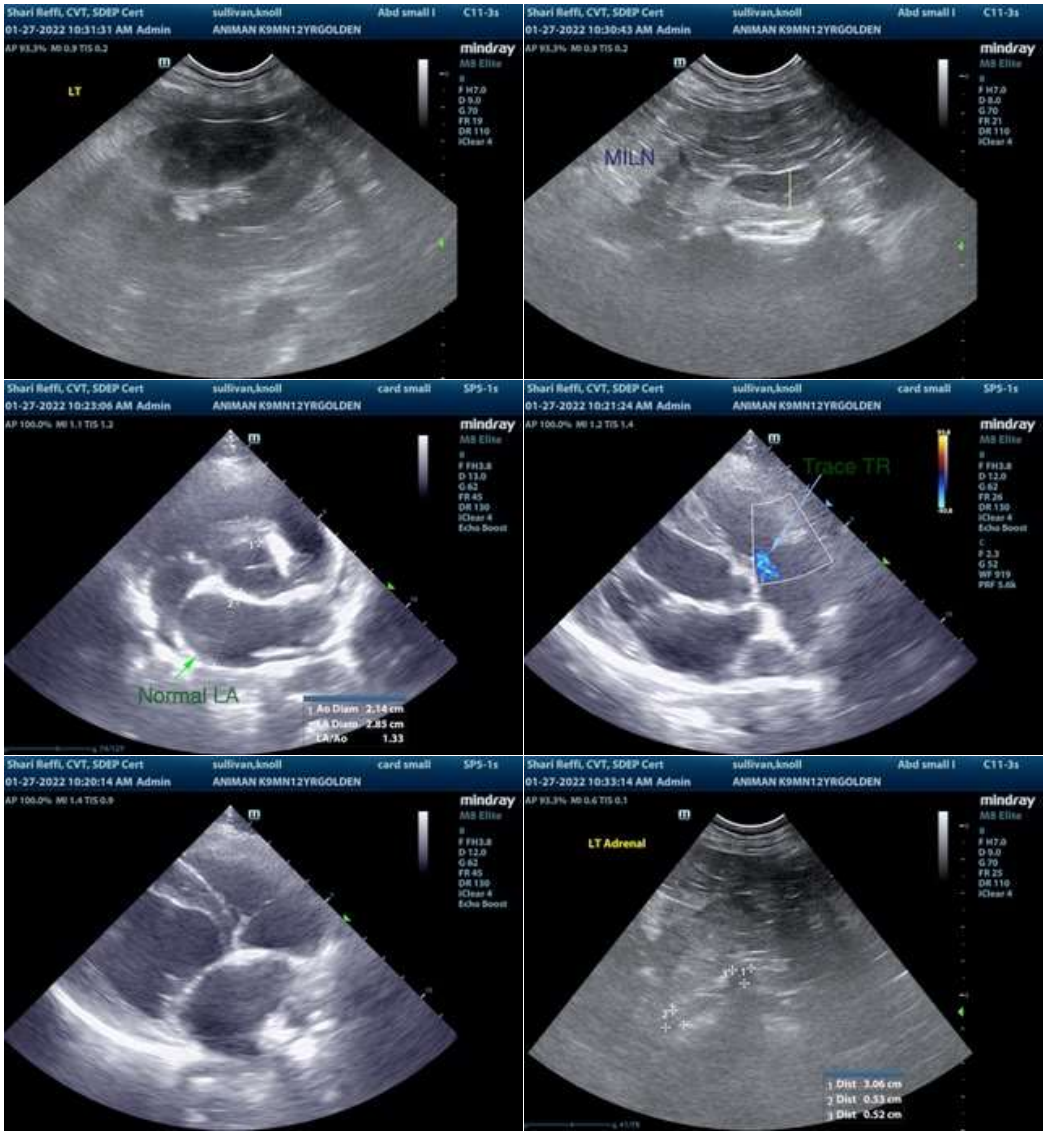


**The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.**

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**