



## PATIENT

Keely Campbell

## SPECIES

Canine

## BREED

Golden Retriever

## SEX

Spayed Female

## AGE

12 Years

## WEIGHT

Not Provided

## PRESENTING CLINICAL SIGNS

History: Suspect hemoabdomen (tapped and confirmed) Current meds: Diabetic on insulin 22u BID  
Abnormal PE/Chem/CBC/UA Results: HCT 64% today (was 45% on 8/19/21)

## 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                   | --            | --            | 1.0                 | 1.07                    | --                              | --                                       | 0.1                                      |
| 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                   | --            | 1.52          | 1.00                | --                      | 3.27                            | --                                       | --                                       |

## INTERPRETED BY

Eric Lindquist, DMV  
DABVP, Cert. IVUSS

## IMAGING PERFORMED BY

Jessica Miller

## HOSPITAL NAME

Basking Ridge AH

## REFERRING VET

Dr. Hollo

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## DATE

11/15/21

### Cardiac Presentation

The echocardiogram in this patient demonstrated normal **left atrial** size based on 3 separate methods of LA evaluation. Trivial **mitral** insufficiency noted. 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. **Pulmonary outflow** tract assessment revealed normal valve structure, laminar flow, and diameter (approx.1:1 pa/ao ratio). Arrhythmogenic activity noted. The left heart is unremarkable to slightly volume contracted. The right atrium and right auricle in this patient revealed heterogeneous changes noted at the right ventricular free wall. The right auricle was not collapsed at the time of the sonogram. No overt masses noted, however, I am concerned for emerging neoplasia in this region. A mild to moderate amount of pericardial effusion noted.

### Urinary System

The **urinary bladder**, trigone, and pelvic urethra presented normal thicknesses and normal tone. The ureters were not visible which is normal. No uroliths or sediment were visualized and anechoic urine was present. No evidence of inflammatory or neoplastic changes were noted. Ureteral papillae were normal.



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The **kidneys** revealed normal size and structure, corticomedullary definition and ratio for this age. The cortices presented largely uniform texture with normal echogenic relationship to liver and spleen. Medullary structure differed distinctly from the cortex and no evidence of pelvic dilation was present. The capsules were acceptably uniform without significant irregularities. The left kidney measured 7.2 cm. The right kidney measured 7.2 cm.

**SPECIES**

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**Adrenal Glands**

**BREED**

Golden Retriever

The **right adrenal gland** was visualized and recognized as having normal shape, size, position and echogenicity for this breed. The phrenic vasculature, glandular echogenicity and detail were unremarkable. Capsule, cortex, and medullary definition were normal for this age patient. The right adrenal gland measured 2.62 cm x 0.41 cm at the caudal pole and 0.95 cm at the cranial pole.

**SEX**

Spayed Female

The **left adrenal gland** measured 2.67 cm x 0.84 cm at the caudal pole and 0.51 cm at the cranial pole. Slight irregular contour of the caudal pole of the left adrenal gland was noted.

**Spleen**

**AGE**

12 Years

The **spleen** revealed an expansive mixed hypoechoic (1.26 cm) nodule at the mid splenic body. The remainder of the spleen revealed minor heterogeneous changes.

**Liver**

**WEIGHT**

Not Provided

The **liver** was slightly heterogeneous yet expected for this age patient. The gallbladder and common bile duct were unremarkable.

**Gastrointestinal**

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Examination of the **gastrointestinal tract** revealed a stomach and intestine free of stasis, of normal wall thickness, acceptable curvilinear mural detail, and peristaltic activity. Small and large intestine demonstrated normal luminal chyme and stool consistency respectively. No obstructive or overt infiltrative disease was noted. No associated abnormal lymphatic activity was noted.

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**Pancreas**

The base and limbs of the **pancreas** were observed to be largely isoechoic to surrounding omental fat. Pancreatic duct and capsular contour were acceptably normal and parenchyma respected normal curvilinear patterns. No overt evidence of active inflammatory or neoplastic disease was noted.

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**Free Abdomen**

Ascites noted in the **abdomen** with passive congestion of the liver.

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**ULTRASONOGRAPHIC FINDINGS**

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- Passive congestion liver with focal splenic mass
- Minor ascites could be justified from the splenic mass and/or passive congestion given the patient hemoabdomen and bleeding from the spleen likely.
- Pericardial effusion and irregular right auricle, strongly suggestive for metastatic disease of hemangiosarcoma
- Left adrenal gland, slight irregular contour
- Splenic nodule

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**INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS**



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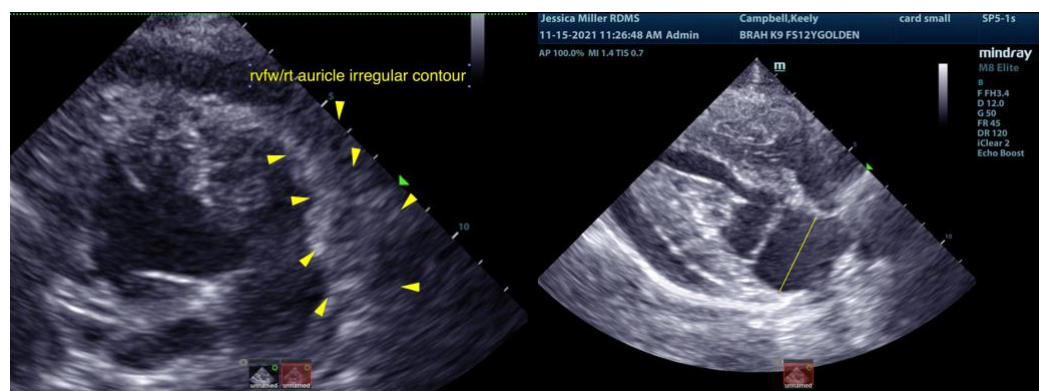
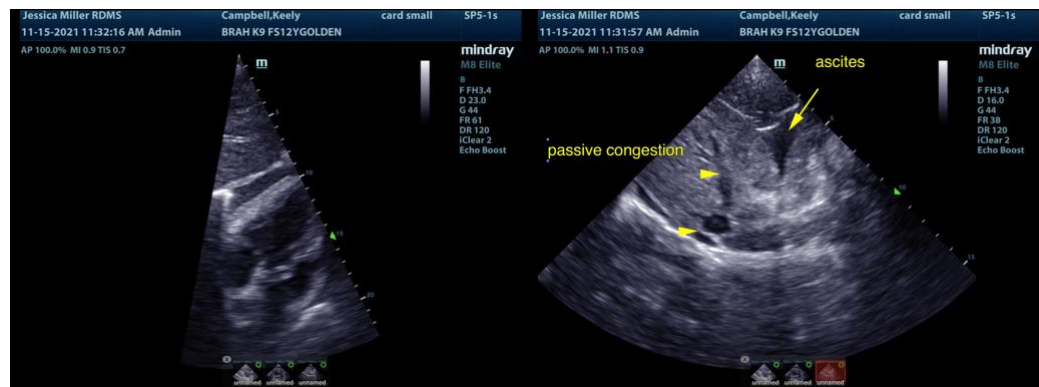
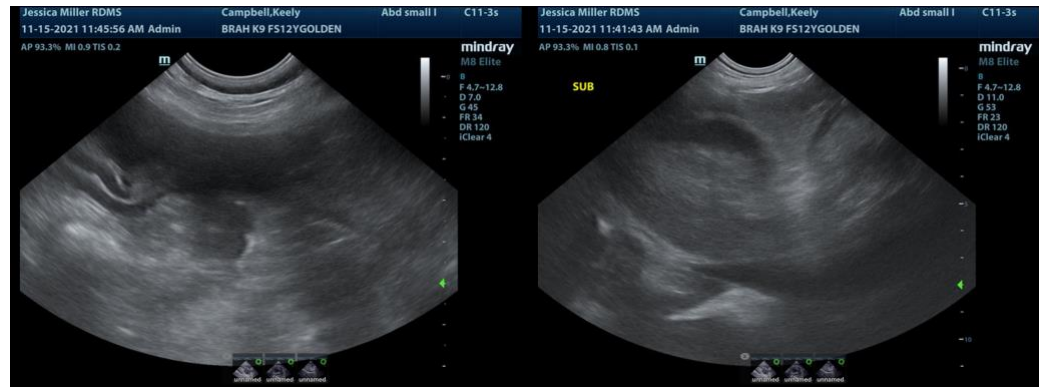
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Oncological referral warranted. Chest CT would be ideal for further definition. Lung lesions or caudal mediastinal lesions may be playing a role in this case. Prognosis long-term is poor. However, some response to chemotherapy may be helpful. The pericardial effusion is relatively mild to moderate at this point and is causing minimal functional effect. However, if it increases, then pericardial drainage indicated from a palliative perspective. The right auricle was not collapsed at the time of the sonogram, therefore, given the passive congestion pattern in the liver, I'm concerned for caudal mediastinal pathology that may be contributing.





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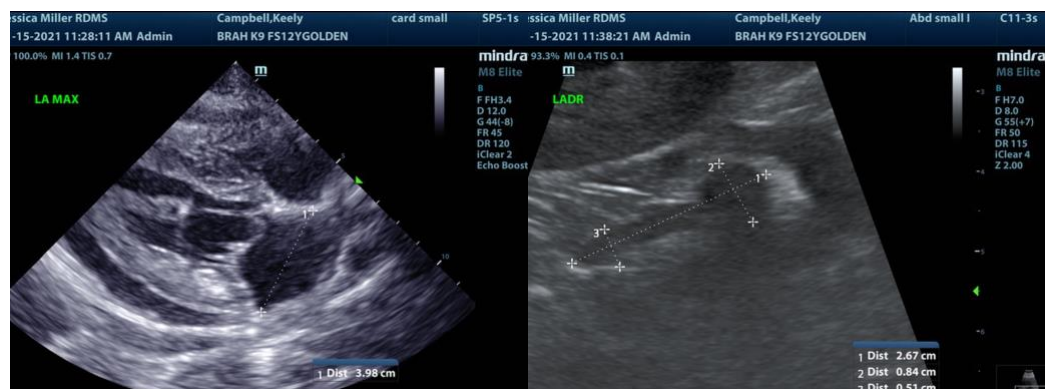
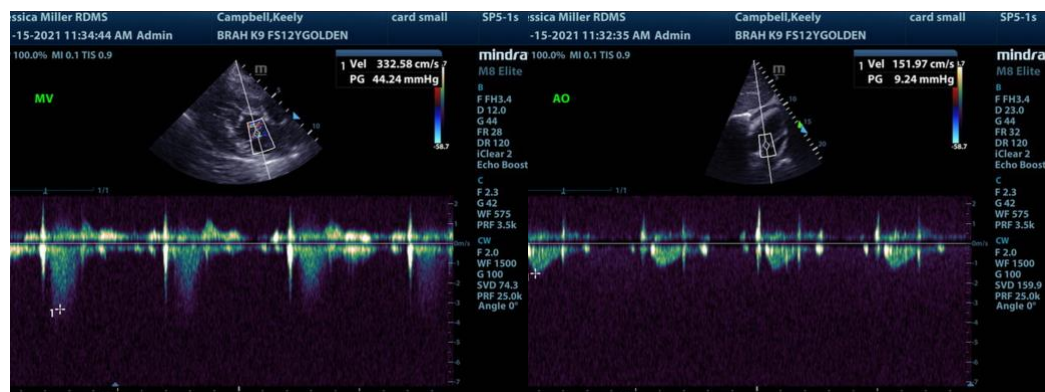
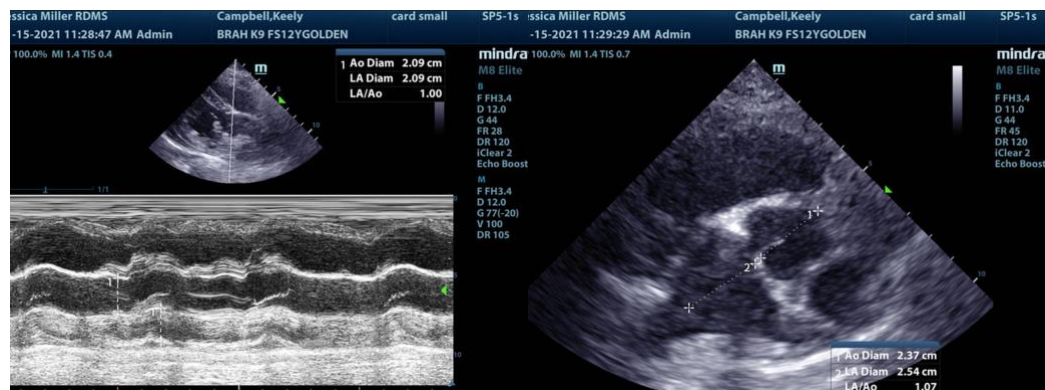
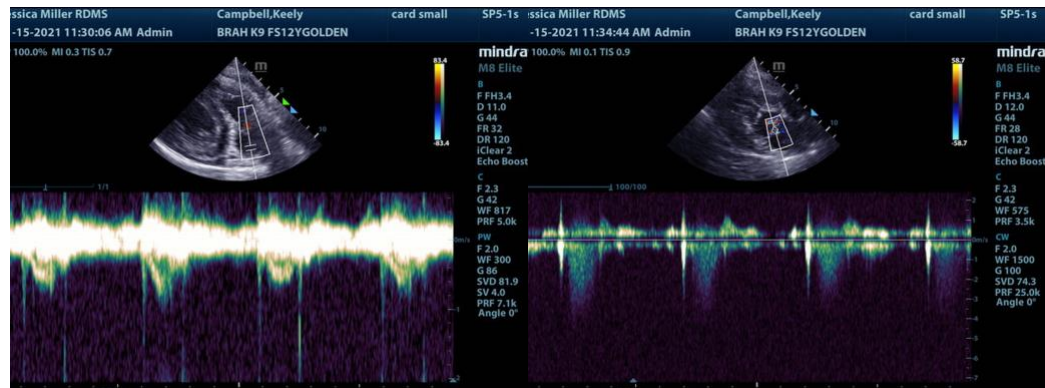
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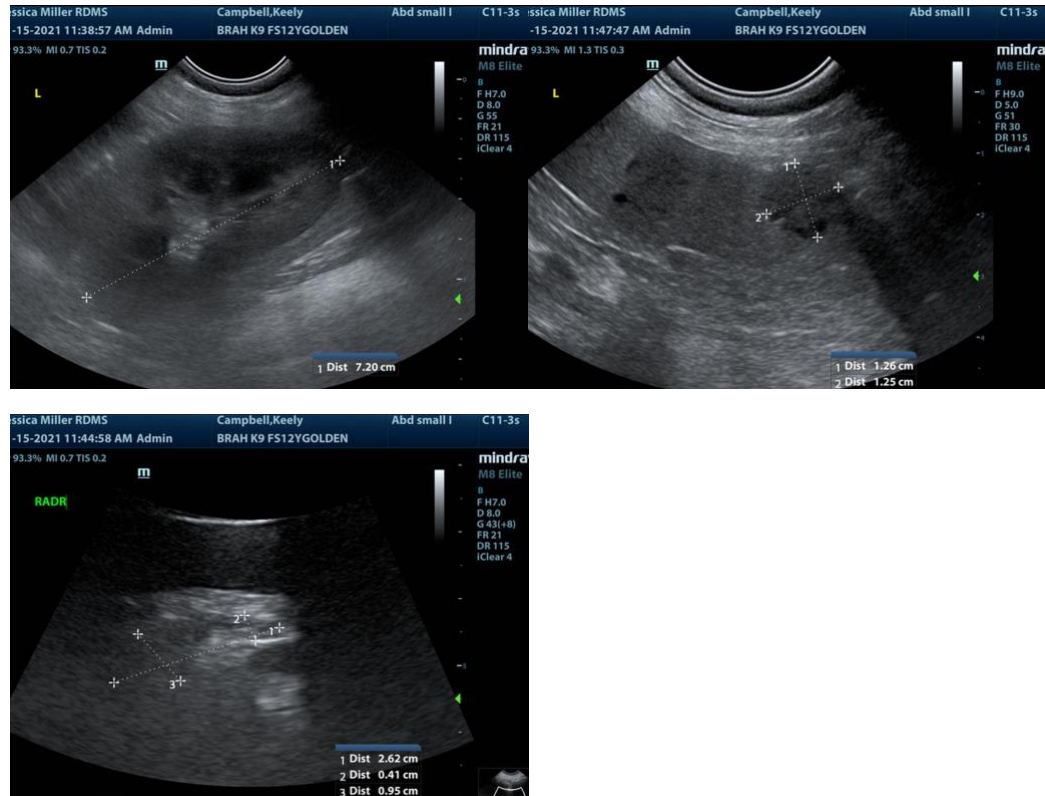
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The information and recommendations provided are based on the images presented by the referring veterinarian. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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.

**Eric Lindquist**, DMV, DABVP, Cert. IVUSS, CEO of SonoPath.com  
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