



PATIENT

Sandy Weierstall

SPECIES

Canine

BREED

Cocker Spaniel

SEX

FS

AGE

13 yrs

WEIGHT

27.8 lbs.

INTERPRETED BY

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

IMAGING PERFORMED BY

Kelly Vazquez

HOSPITAL NAME

Ramapo Valley AH

REFERRING VET

Dr. Katara

INVOICE

14841

DATE

9/13/22

PRESENTING CLINICAL SIGNS

Elevated liver values, gradually increasing. New left-sided systolic murmur grade 3/6.
Abnormal PE/Chem/CBC/UA Results: ALT 192, ALP 632, GGT 17.

ULTRASONOGRAPHIC EXAMINATION OF THE HEART & ABDOMEN

| CANINE | MR | TR | LA/AO | LA/AO | FS | EF | EPSS |
|---------------------------|----------------------|----------------------|---------------------|-------------------|------------------------------------|---------------------------------------|---------------------------------------|
| CARDIAC PARAMETERS | VMAX (m/s) | VMAX (m/s) | (Boon method) | (Heart Base; Swe) | (%) | (%) | (cm) |
| NORMAL PARAMETER | 4.5-5.5 | <2.7 | 1.3 | <1.3 | 28-40 | 40-100 | <0.6 |
| PATIENT | 6.4 | | | 1.3 | 35.3 | 68.1 | 0.21 |
| CANINE | HR | AV | PV | BODY WEIGHT | LA | LVIDd | LVIDs |
| CARDIAC PARAMETERS | (BPM) | VMAX (m/s) | MAX (m/s) | (kg) | 2D short axis Base view (cm) | Avg; 2D and m-mode short axis (cm) | Avg; 2D and m-mode short axis (cm) |
| NORMAL PARAMETER | 50-100 | 0.7-1.7 | 0.7-1.6 | | | | |
| PATIENT | 122 | 1.3 | 1.0 | | 4.1 | 3.8 | |

Cardiac Presentation

The echocardiogram in this patient demonstrated normal **left atrial** size based on 3 different LA measurement methods. The cranial and caudal **mitral** valve leaflets presented vegetative thickening consistent with endocardiosis. No evidence of valvular prolapse. Doppler indicated measurable moderate eccentric insufficiency with mild elevated MR velocity. The **left ventricle** presented normal 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 or chamber overload. **Tricuspid** valvular assessment demonstrated adequate linear morphology. The **right ventricle** was of normal size (1/3 diameter of LV), chordae structure, myocardial echogenicity and 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.

Urinary System

The urinary bladder, trigone, cystourethral junction, and visible pelvic urethra to a depth of 3.0 cm exhibited normal thickness and tone. Anechoic urine was present in the lumen with no uroliths or



| | |
|--|--|
| PATIENT | sediment. The ureteral papillae were normal. The ureters were not visible which is normal. No evidence of inflammatory or neoplastic changes was noted. |
| Sandy Weierstall | |
| SPECIES | The area of the aortic trifurcation was free of pathology. |
| Canine | 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 5.6 cm in length. The right kidney measured 5.7 cm in length. |
| BREED | |
| Cocker Spaniel | |
| SEX | Adrenal Glands |
| FS | The left adrenal gland was normal in size. Mild parenchyma heterogeneity and mild capsule asymmetry was present without suspicion for overt neoplasia. The left adrenal gland measured 2.6 cm length x 0.66 cm width at the caudal pole. |
| AGE | |
| 13 yrs | The right adrenal gland was mildly prominent in size. Mild parenchyma heterogeneity and mild capsule asymmetry was present without suspicion for overt neoplasia. The right adrenal gland measured 2.1 cm length x 0.77 cm width at the caudal pole. |
| WEIGHT | Spleen |
| 27.8 lbs. | The spleen exhibited primarily finely textured parenchyma which was hyperechoic to the liver and renal cortical parenchyma. Mild generalized parenchyma heterogeneity was present without evidence of nodular changes. 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. The parenchymal heterogeneity is likely consistent with benign changes such as extramedullary hematopoiesis or age-related remodeling with minor potential for inflammatory or neoplastic disease. |
| INTERPRETED BY | Liver/ Gallbladder |
| R. McKenzie Daniel, DVM, DABVP (Canine and Feline) | The liver exhibited generalized enlargement with primarily maintained symmetrical capsule contour with nonuniform to heterogeneous hepatic parenchyma exhibiting intermittent discrete nonhomogeneous intraparenchymal nodules. An example of a nodule size measured 1.8 cm in diameter. The gallbladder was non-distended in size containing mild nondependent, mobile, mildly echogenic gallbladder debris. No evidence of gallbladder or peripheral gallbladder inflammatory criteria was noted. The cystic and common bile ducts were normal. |
| IMAGING PERFORMED BY | Gastrointestinal |
| Kelly Vazquez | 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. |
| HOSPITAL NAME | |
| Ramapo Valley AH | 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. |
| REFERRING VET | |
| Dr. Katara | Normal visible colon wall layers were present with apparent formed feces in lumen. |
| INVOICE | |
| 14841 | |
| DATE | |
| 9/13/22 | |



PATIENT

Sandy Weierstall

SPECIES

Canine

BREED

Cocker Spaniel

SEX

FS

AGE

13 yrs

WEIGHT

27.8 lbs.

Pancreas

The pancreas was normal in size and contour with isoechoic to heterogeneous parenchyma compared to adjacent omentum. No signs of active inflammation or neoplasia. This is likely consistent with age-related pancreatic changes and minor remodeling.

Free Abdomen

No overt lymphadenopathy or peritoneal effusion was present.

ULTRASONOGRAPHIC FINDINGS

- Chronic mitral valve disease (ACVIM B1)
- Mild increased MR velocity
- Nonuniform heterogeneous to discretely nodular liver
- Mild gallbladder debris (non-mucocele)
- Bilateral chronic renal changes
- Mildly prominent to mild irregular right adrenal gland - nonspecific

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

The cause of the murmur secondary to chronic degenerative valvular changes with secondary eccentric mitral valve insufficiency. The lack of left atrium enlargement or evidence of left heart volume overload indicates that the relative risk secondary to mitral valve insufficiency at this stage is low. However, prognosis is highly variable, and serial sonographic monitoring is required for further assessment. In a nonclinical patient without evidence of significant chamber enlargement, no overt indication for cardiac medications. Recheck echocardiogram is suggested in 6 months, sooner if clinical signs arise.

Overall, the liver was nonspecific with considerations including vacuolar hepatopathy, inflammatory / immune-mediated disease, nodular hyperplasia, hematopoiesis, fibrosis, infiltrative neoplasia thought less likely, or other hepatopathy.

The mildly prominent right adrenal gland may indicate age-related variant, benign hyperplasia, and adenomatous change, with emerging adrenal neoplasia considered less likely, yet cannot be definitively excluded. Assessment of systemic BP is recommended for evidence of hypertension, given the elevated MR velocity, which may potentially allude to an emerging right pheochromocytoma. Full adrenal workup is suggested if clinically indicated, i.e., evidence of PU/PD, polyphagia, etc.

Assuming normal clotting status, screening hepatic FNA cytology could be considered with hepatosupportive medications and monitoring of hepatic enzymes. Sonographic monitoring of the right adrenal gland for evidence of progressive enlargement is suggested.

INTERPRETED BY

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

IMAGING PERFORMED BY

Kelly Vazquez

HOSPITAL NAME

Ramapo Valley AH

REFERRING VET

Dr. Katara

INVOICE

14841

DATE

9/13/22



PATIENT

Sandy Weierstall

SPECIES

Canine

BREED

Cocker Spaniel

SEX

FS

AGE

13 yrs

WEIGHT

27.8 lbs.

INTERPRETED BY

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

IMAGING PERFORMED BY

Kelly Vazquez

HOSPITAL NAME

Ramapo Valley AH

REFERRING VET

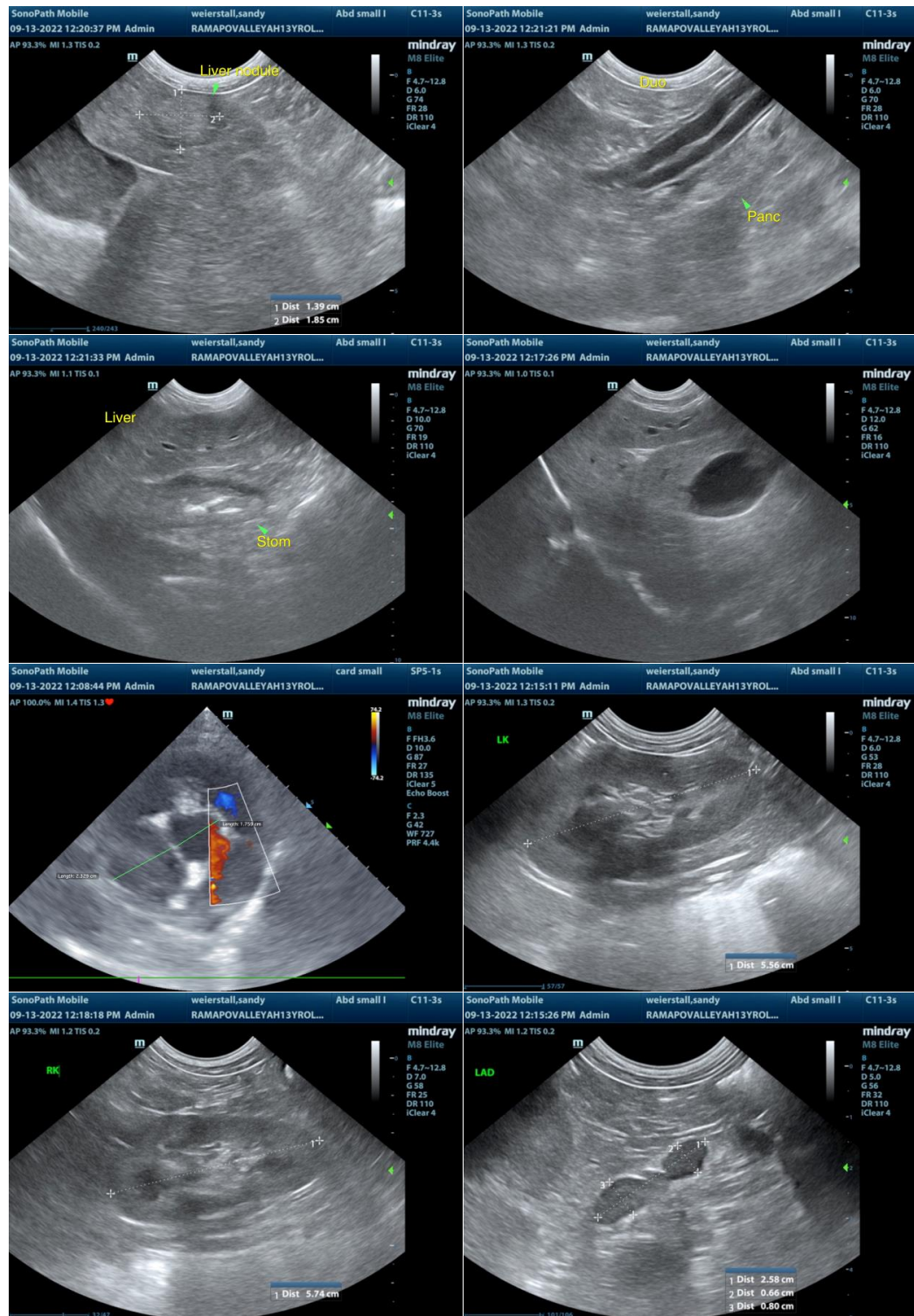
Dr. Katara

INVOICE

14841

DATE

9/13/22





PATIENT

Sandy Weierstall

SPECIES

Canine

BREED

Cocker Spaniel

SEX

FS

AGE

13 yrs

WEIGHT

27.8 lbs.

INTERPRETED BY

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

IMAGING PERFORMED BY

Kelly Vazquez

HOSPITAL NAME

Ramapo Valley AH

REFERRING VET

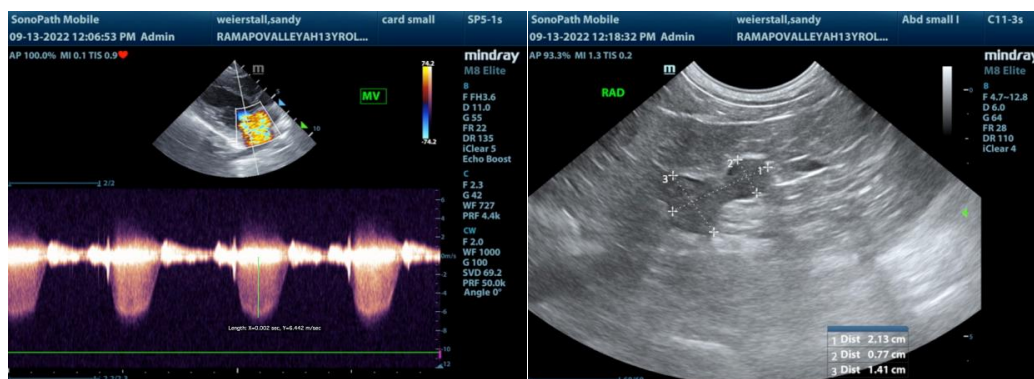
Dr. Katara

INVOICE

14841

DATE

9/13/22



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