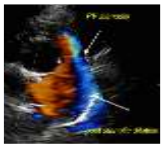
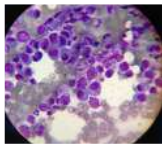
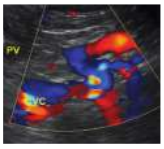
SonoPath
Clinical Sonography & Telecytology
EDUCATIONAL TELECONSULTATION SERVICES™

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

PATIENT
Lacey Lukae

SPECIES
Canine

BREED
Cocker Spaniel

SEX
Spayed Female

AGE
11 years

WEIGHT
23.2 lbs.

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

IMAGING PERFORMED BY
Diane McFadden

HOSPITAL NAME
Newton VH

REFERRING VET
Dr. Kim

INVOICE
12212

DATE
9/3/12

PRESENTING CLINICAL SIGNS

grade 3/4 systolic murmur, possible syncopal episodes; abdominal distension, azotemia, hypoalbuminemia. On grain free diet.
Abnormal PE/Chem/CBC/UA Results: BUN 133, crea 1.7, Phos10.6, TP 5.1, albumin 2.4, chol 343, ALKP 233. CBC: lymphs 0.6 low, eos 0.02 low, RBCs 5.08 low, HCT 38%

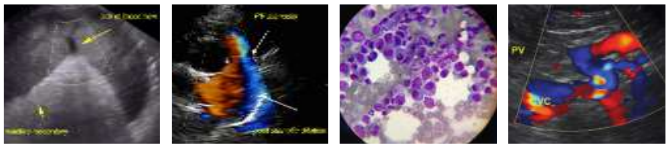
ULTRASONOGRAPHIC EXAMINATION OF THE HEART & ABDOMEN

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			1.7	1.36	25.6	54.6	0.37
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	95	2.4	1.8		2.78	3.6	

Cardiac Presentation

The echocardiogram in this patient demonstrated normal **left atrial** size based on 2 separate methods of LA evaluation. The cranial and caudal **mitral** valve leaflets presented minor thickening with normal extension in systole, and union in diastole with overtly normal kinesis. Color doppler assessment of the mitral valve revealed mild, primarily eccentric mitral valve insufficiency directed toward the intra-atrial septum. The **left ventricle** presented normal thicknesses and linear contour with mild subjective increased left ventricle volume. The **myocardium** presented normal echogenicity without subjective evidence of significant fibrotic or ischemic disease. **Contractility** of the ventricular walls was mildly subnormal, indicated 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. Mild tricuspid valve insufficiency was present on doppler assessment. 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. The cranial **mediastinum and pericardial and extra-cardiac regions** were free of masses in the visible window. No overt evidence of arrhythmogenic activity.

SonoPath
Clinical Sonography & Telecytology
EDUCATIONAL TELECONSULTATION SERVICES™



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

PATIENT

Lacey Lukae

SPECIES

Canine

BREED

Cocker Spaniel

SEX

Spayed Female

AGE

11 years

WEIGHT

23.2 lbs.

INTERPRETED BY

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

IMAGING PERFORMED BY

Diane McFadden

HOSPITAL NAME

Newton VH

REFERRING VET

Dr. Kim

INVOICE

12212

DATE

9/3/12

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 sediment. The ureteral papillae were normal. The ureters were not visible which is normal. No evidence of inflammatory or neoplastic changes was noted.

The area of the aortic trifurcation was free of pathology.

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 to moderate loss of corticomedullary symmetry and definition expected for the age of the patient. Subtle cortical hypertrophy was present in both kidneys. No evidence of pelvic dilation was present. The left kidney measured 5.5 cm in length. The right kidney measured 5.8 cm in length.

Adrenal Glands

The bilateral adrenal glands were mildly prominent in size with primarily symmetrical contour and mild hypoechoic to nonhomogeneous parenchyma. The left adrenal gland measured 2.3 cm length x 0.83 cm width at the caudal pole. The right adrenal gland measured 2.6 cm length x 0.83 cm width at the caudal pole.

Spleen

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.

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. The hepatic and portal vasculature were normal in appearance without signs of congestion. The gallbladder was non distended in size with mild, nondependent, echogenic, gallbladder debris. The debris was non organized with a subtle, anechoic to hypoechoic rim noted between the debris and inner luminal wall. No evidence of gallbladder or peripheral inflammation. The cystic and common bile ducts were normal.

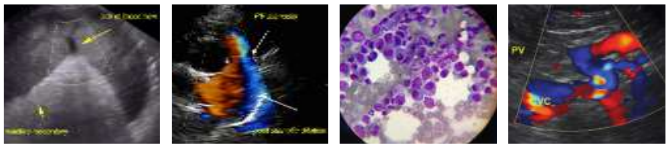
Gastrointestinal

The stomach presented intact wall layering with a normal wall layer ratio. The lumen of the stomach was empty with no 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.

Normal visible colon wall layers were present with apparent formed feces in lumen.

SonoPath
Clinical Sonography & Telecytology
EDUCATIONAL TELECONSULTATION SERVICES™
SonoPath.com
1-800-838-4268 info@sonopath.com



PATIENT

Lacey Lukae

SPECIES

Canine

BREED

Cocker Spaniel

SEX

Spayed Female

AGE

11 years

WEIGHT

23.2 lbs.

INTERPRETED BY

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

IMAGING PERFORMED BY

Diane McFadden

HOSPITAL NAME

Newton VH

REFERRING VET

Dr. Kim

INVOICE

12212

DATE

9/3/12

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 evidence of intraabdominal masses, lymphadenopathy or effusion was present.

ULTRASONOGRAPHIC FINDINGS

Primary Findings

- Mild subjective increased left ventricle volume
- Mild decreased left ventricle systolic function
- Mild MR/TR - estimated pulmonary pressure gradient based on TR velocity not consistent with clinical pulmonary hypertension
- Chronic nephropathy
- Subjective mild prominent bilateral adrenal glands
- Hepatic parenchymal remodeling - subjectively benign
- Emerging gallbladder mucocele

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

The cause of the murmur is most likely owing to mitral valve Insufficiency potentially owing to endocardiosis.

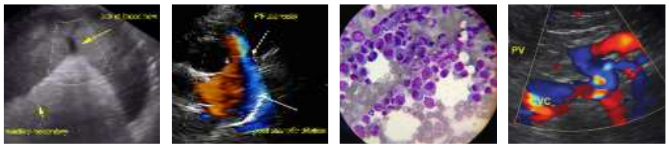
Given the patient's history, taurine levels as well as changing to a traditional diet are recommended.

ECG assessment +/- Holter Monitor may be indicated to assess for arrhythmogenic disease, given the possible syncopal episodes. Although no evidence of impending decompensation, empirical pump support with Pimobendan 0.3 mg/kg PO BID may be considered pending taurine and transition to a traditional diet. Full urinary workup including urinalysis, urine C/S, UPC is recommended in addition to an assessment of systemic blood pressure. Recheck echo suggested in 3-4 months for reassessment.

The clinical significance of the subjective prominent adrenal glands is unclear and may be a patient variant or mild stress hypertrophy. Adrenal workup may be considered If clinically indicated.

Sonographic monitoring of the gallbladder is recommended. Especially if evidence of increasing cholestasis.

SonoPath
Clinical Sonography & Telecytology
EDUCATIONAL TELECONSULTATION SERVICES™



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

PATIENT

Lacey Lukae

SPECIES

Canine

BREED

Cocker Spaniel

SEX

Spayed Female

AGE

11 years

WEIGHT

23.2 lbs.

INTERPRETED BY

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

IMAGING PERFORMED BY

Diane McFadden

HOSPITAL NAME

Newton VH

REFERRING VET

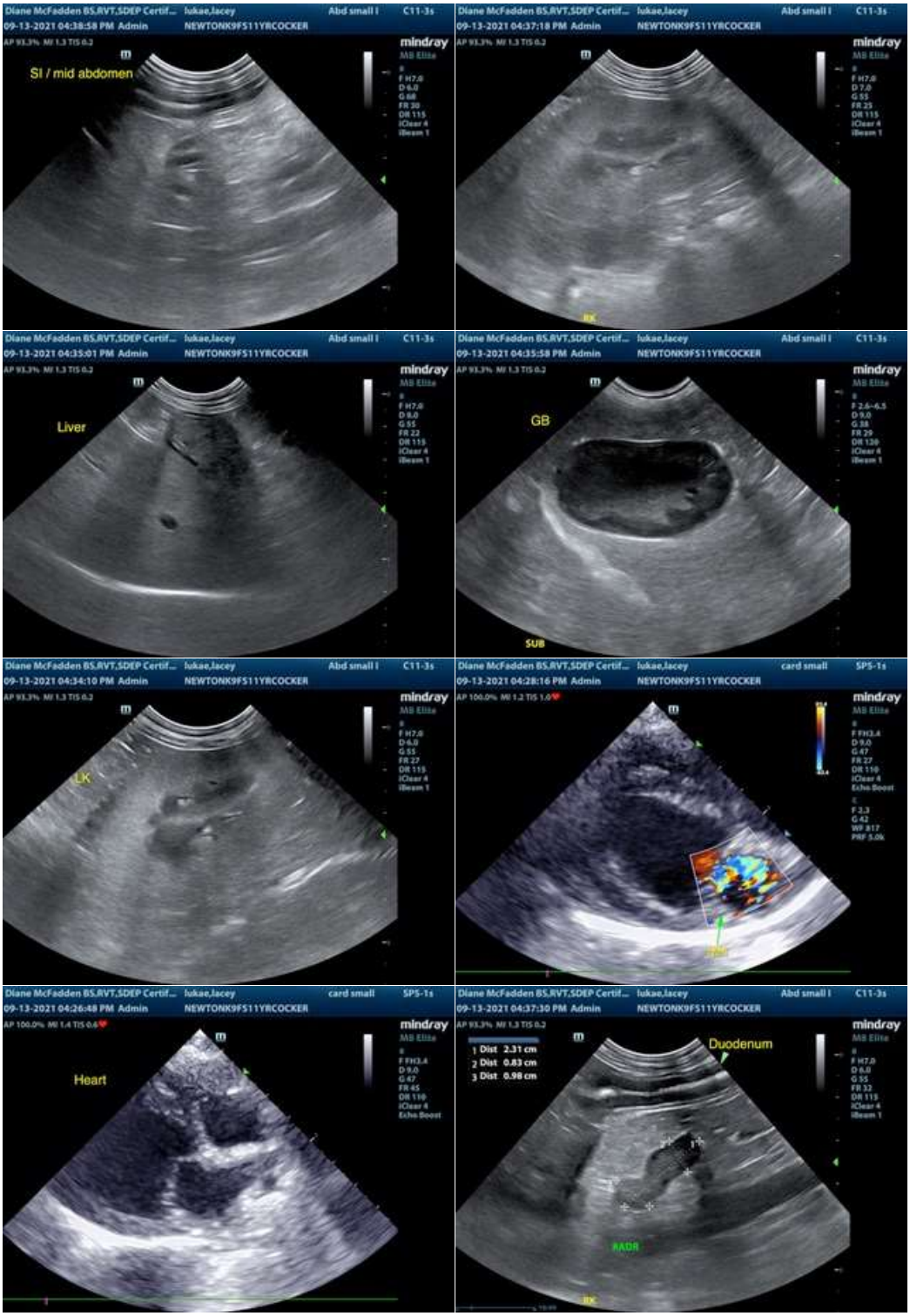
Dr. Kim

INVOICE

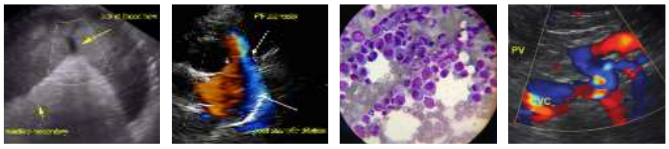
12212

DATE

9/3/12



SonoPath
Clinical Sonography & Telecytology
EDUCATIONAL TELECONSULTATION SERVICES™



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

PATIENT

Lacey Lukae

SPECIES

Canine

BREED

Cocker Spaniel

SEX

Spayed Female

AGE

11 years

WEIGHT

23.2 lbs.

INTERPRETED BY

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

IMAGING PERFORMED BY

Diane McFadden

HOSPITAL NAME

Newton VH

REFERRING VET

Dr. Kim

INVOICE

12212

DATE

9/3/12

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.

R. McKenzie Daniel, DVM, DABVP (Canine / Feline Practice)
info@SonoPath.com