



PATIENT

Molly Koop

SPECIES

Canine

BREED

Chihuahua

SEX

F/S

AGE

13

WEIGHT

4.2 kg.

INTERPRETED BY

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

IMAGING PERFORMED BY

Dr. Belan

HOSPITAL NAME

Beddington Trail AH

REFERRING VET

Dr. Bahadur

INVOICE

16512

DATE

4/5/23

PRESENTING CLINICAL SIGNS

Presented for pre dental work up. 4/6 left sided murmur found on exam not on any meds or clinical Fri heart disease at this time. Ab scan 52 images echo 62 images total 115

Abnormal PE/Chem/CBC/UA Results: Moderate elevation of liver enzymes and mild elevation of both pre and post prandial bile acids

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	6.0	2.5		2.1	44.8	78	0.2
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	196	1.3	0.7		3.4	3.0	

Cardiac Presentation

The echocardiogram in this patient demonstrated moderately enlarged **left atrial** size based on 3 different LA measurement methods. Minor deviation of the interatrial septum towards the right atrium, suggestive of increased left atrial pressure, was present. The cranial and caudal **mitral** valve leaflets presented moderate (anterior > posterior), consistent with endocardiosis. Minor prolapse of the septal leaflet was noted. Doppler indicated measurable moderate eccentric insufficiency. Borderline increased measured MR velocity was noted. The **left ventricle** presented thicknesses with linear contour with increased left ventricle volume. 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 mild thickening with mild TR on Doppler. 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.



PATIENT

Urinary System

Molly Koop

The urinary bladder, trigone, and cystourethral junction exhibited normal thickness and tone. Anechoic urine was present in the lumen with no uroliths or sediment. No evidence of mineral or calculi was noted. The ureteral papillae were normal. The ureters were not visible which is normal. No evidence of inflammatory or neoplastic changes was noted.

SPECIES

Canine

BREED

Chihuahua

The area of the aortic trifurcation was free of pathology.

SEX

F/S

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 moderate loss of corticomedullary symmetry and definition expected for the age of the patient. No evidence of pelvic dilation was present. Minor medullary mineral was noted. The left kidney measured 3.1 cm in length. The right kidney measured 3.6 cm in length.

AGE

13

Adrenal Glands

The bilateral adrenal glands were normal in size, based on caudal pole width measurement in light of body weight. Mild parenchyma heterogeneity and mild capsule asymmetry was present without suspicion for overt neoplasia. The left adrenal gland measured 0.33 cm width in the cranial pole and 0.40 cm width in the caudal pole. The right adrenal gland measured 0.68 cm width in the cranial pole and 0.38 cm width in the caudal pole.

WEIGHT

4.2 kg.

INTERPRETED BY

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

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.

IMAGING PERFORMED BY

Dr. Belan

Liver/ Gallbladder

HOSPITAL NAME

Beddington Trail AH

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 containing anechoic content with mild gallbladder primarily in the gallbladder neck. No evidence of post hepatic obstruction or biliary inflammatory criteria was noted.

REFERRING VET

Dr. Bahadur

INVOICE

16512

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.

DATE

4/5/23

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.



PATIENT

Pancreas

Molly Koop

The pancreas was normal in size and contour with isoechoic to heterogeneous parenchyma compared to adjacent omentum. No signs of active inflammation or neoplasia.

SPECIES

Canine

Free Abdomen

No overt lymphadenopathy or peritoneal effusion was present.

BREED

Chihuahua

ULTRASONOGRAPHIC FINDINGS

SEX

F/S

AGE

13

WEIGHT

4.2 kg.

- Chronic mitral valve disease with mild septal leaflet prolapse (ACVIM B2)
- Mild TR - no evidence of clinical pulmonary hypertension
- Moderate chronic renal changes with discrete medullary mineral
- Nonspecific hepatopathy - subjectively benign, vacuolar hepatopathy, chronic inflammatory disease, hyperplasia, hematopoiesis, fibrosis, or other hepatopathy with infiltrative neoplasia thought less likely, no overt evidence of a portosystemic vascular anomaly
- Minor gallbladder debris (non-mucocele)
- Mild pancreatic remodeling - benign

INTERPRETED BY

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

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

Evidence of moderately increased left heart volume indicates that the current and future risk secondary to MR in this patient is moderately elevated. Pimobendan 0.3 mg/kg PO BID is recommended. No overt indication for diuretic therapy, given no reported clinical signs consistent with congestion. Serial monitoring of resting respiration rate going forward is advised. Anesthetic risk is considered moderately elevated, yet may be somewhat reduced once on Pimobendan for 3-5 days.

IMAGING PERFORMED BY

Dr. Belan

Further renal staging to include urine C/S and protein: creatinine ratio on sterile urine sample may be considered.

HOSPITAL NAME

Beddington Trail AH

Although mild reported increased bile acids, hepatic functionality is suspected to be adequate if normal albumin, glucose, cholesterol, and BUN levels. Hepatosupportive medications including Denamarin +/- Ursodiol, if tolerated, may prove beneficial. Hepatic sampling is required for a definitive diagnosis.

REFERRING VET

Dr. Bahadur

The following anesthetic protocol is suggested if anesthesia is considered essential with concurrent judicious IV fluid use and limited anesthetic time. Prognosis for the heart is considered variable with serial sonographic monitoring recommended for further assessment. Recheck echocardiogram is suggested in 6 months, sooner if clinical signs arise.

INVOICE

16512

Suggested anesthetic protocol may include opioid or Benzodiazepine pre-med, induction with Propofol or Alfaxalone, and appropriate gas anesthesia with avoidance of alpha 2 agonists.

DATE

4/5/23



PATIENT

Molly Koop

SPECIES

Canine

BREED

Chihuahua

SEX

F/S

AGE

13

WEIGHT

4.2 kg.

INTERPRETED BY

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

IMAGING PERFORMED BY

Dr. Belan

HOSPITAL NAME

Beddington Trail AH

REFERRING VET

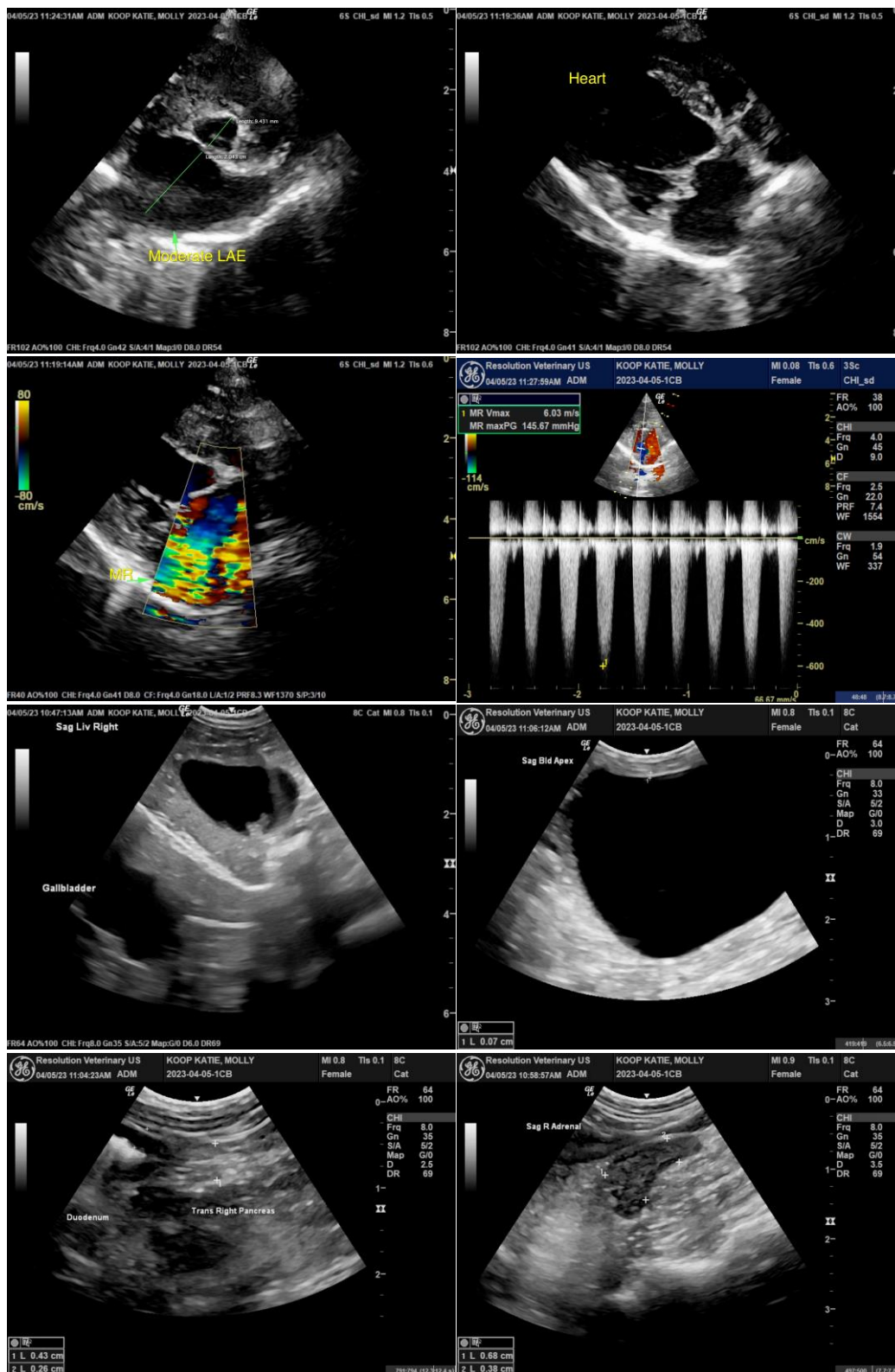
Dr. Bahadur

INVOICE

16512

DATE

4/5/23





PATIENT

Molly Koop

SPECIES

Canine

BREED

Chihuahua

SEX

F/S

AGE

13

WEIGHT

4.2 kg.

INTERPRETED BY

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

IMAGING PERFORMED BY

Dr. Belan

HOSPITAL NAME

Beddington Trail AH

REFERRING VET

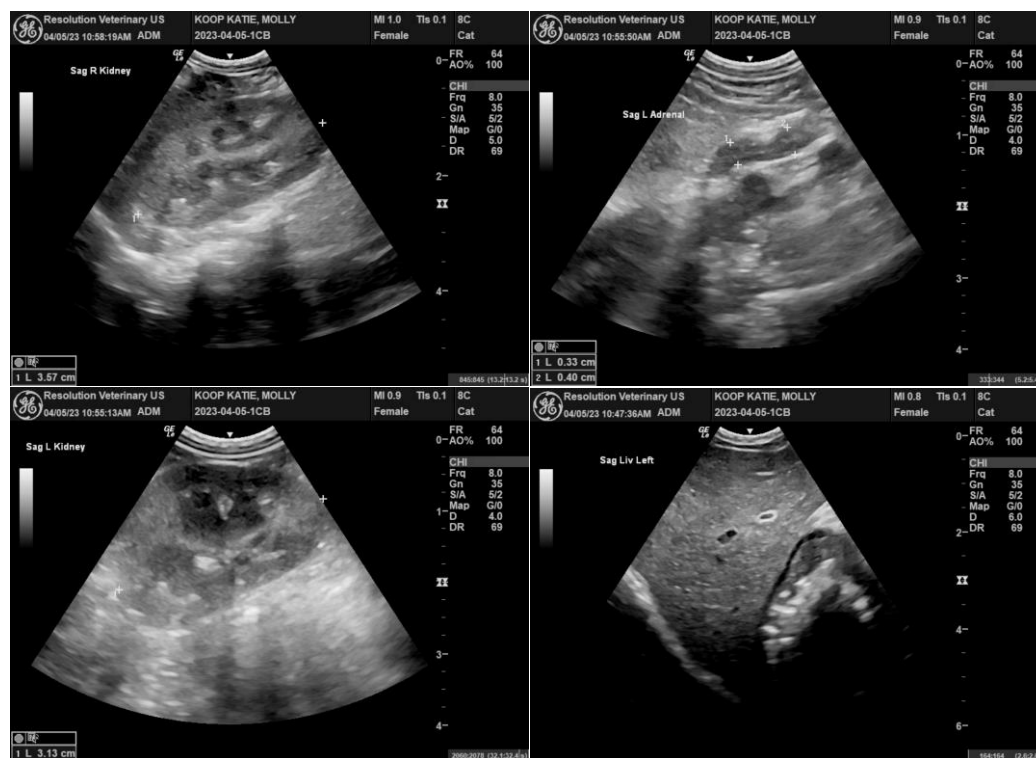
Dr. Bahadur

INVOICE

16512

DATE

4/5/23



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