



## PATIENT

Lola Behman

## SPECIES

Canine

## BREED

Beagle

## SEX

FS

## AGE

13 years

## WEIGHT

26.4 lbs

## INTERPRETED BY

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

## IMAGING PERFORMED BY

Kelly Vazquez

## HOSPITAL NAME

Animal Paradise  
Hospital

## REFERRING VET

Dr. ElShafie

## INVOICE

15026

## DATE

9-29-22

## PRESENTING CLINICAL SIGNS

Patient presents for a grade 2/6 heart murmur and ALP of 486.  
Abnormal PE/Chem/CBC/UA Results: ALP 486, T4 3.2.

## ULTRASONOGRAPHIC EXAMINATION OF THE HEART & ABDOMEN

CANINE	MR	TR	LA/AO	LA/AO	FS	EF	EPSS
<b>CARDIAC PARAMETERS</b>	<b>VMAX</b> (m/s)	<b>VMAX</b> (m/s)	(Boon method)	(Heart Base; Swe)	(%)	(%)	(cm)
<b>NORMAL PARAMETER</b>	4.5-5.5	<2.7	1.3	<1.3	28-40	40-100	<0.6
<b>PATIENT</b>	5.8	<2.0	1.23	1.43	47.4	82.3	0.2
CANINE	HR	AV	PV	BODY WEIGHT	LA	LVIDd	LVIDs
<b>CARDIAC PARAMETERS</b>	(BPM)	<b>VMAX</b> (m/s)	<b>MAX</b> (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)
<b>NORMAL PARAMETER</b>	50-100	0.7-1.7	0.7-1.6				
<b>PATIENT</b>	110	1.3	1.0		3.5	3.1	

### Cardiac Presentation

The echocardiogram in this patient demonstrated normal **left atrial** size based on 3 different LA measurement methods. Chamber volumes and echogenicity were normal. The cranial and caudal **mitral** valve leaflets presented vegetative thickening consistent with endocardiosis. Doppler indicated measurable insufficiency. 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 or chamber overload. **Tricuspid** valvular assessment revealed 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.

### Urinary System

The urinary bladder, trigone, cystourethral junction, and visible pelvic urethra to a depth of 2.0 cm exhibited normal thickness and tone. Anechoic urine was present in the lumen with no uroliths or



<b>PATIENT</b>	sediment. The ureteral papillae were normal. The ureters were not visible which is normal. No evidence of inflammatory or neoplastic changes was noted.
Lola Behman	
<b>SPECIES</b>	The area of the aortic trifurcation was free of pathology.
Canine	Normal size and margination were present in the left kidney. A normal 1:3 cortex / medulla ratio was maintained. Subjective mild cortical hypertrophy was noted. 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. No evidence of pyelectasia was present. The left kidney measured 4.8 cm in length. The right kidney was not visualized.
<b>BREED</b>	
Beagle	
<b>SEX</b>	<b>Adrenal Glands</b>
FS	The bilateral adrenal glands were mildly prominent in size based on caudal pole width. Mild parenchyma heterogeneity and mild capsule asymmetry was present without suspicion for overt neoplasia. The left adrenal gland measured 2.0 cm length x 0.72 cm width at the caudal pole. The right adrenal gland measured 1.6 cm length x 0.8 cm width at the caudal pole. No evidence of adrenal tumors was noted.
<b>AGE</b>	<b>Spleen</b>
13 years	The spleen exhibited a finely textured and homogenous parenchyma which was hyperechoic to the liver and renal cortical parenchyma. 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. Acute to chronic inflammatory, neoplastic, or benign parenchyma changes were not noted.
<b>WEIGHT</b>	<b>Liver/ Gallbladder</b>
26.4 lbs	The liver exhibited generalized enlargement with a maintained symmetrical capsule contour. Mild increased parenchyma echogenicity comparable to the spleen was present with moderate coarse echotexture and evidence of minor parenchymal remodeling. No masses or nodules were noted. The gallbladder was non-distended in size containing mild, primarily dependent, non-congealed, mildly hyperechoic gallbladder debris. No evidence of gallbladder or peripheral gallbladder inflammation was noted. The cystic and common bile ducts were normal.
<b>INTERPRETED BY</b>	<b>Gastrointestinal</b>
R. McKenzie Daniel, DVM, DABVP (Canine and Feline)	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.
<b>IMAGING PERFORMED BY</b>	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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<b>HOSPITAL NAME</b>	<b>INVOICE</b>
Animal Paradise Hospital	Normal visible colon wall layers were present with apparent formed feces in lumen.
<b>REFERRING VET</b>	<b>Pancreas</b>
Dr. ElShafie	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.
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**PATIENT**

**Free Abdomen**

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No overt lymphadenopathy or peritoneal effusion was present.

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**ULTRASONOGRAPHIC FINDINGS**

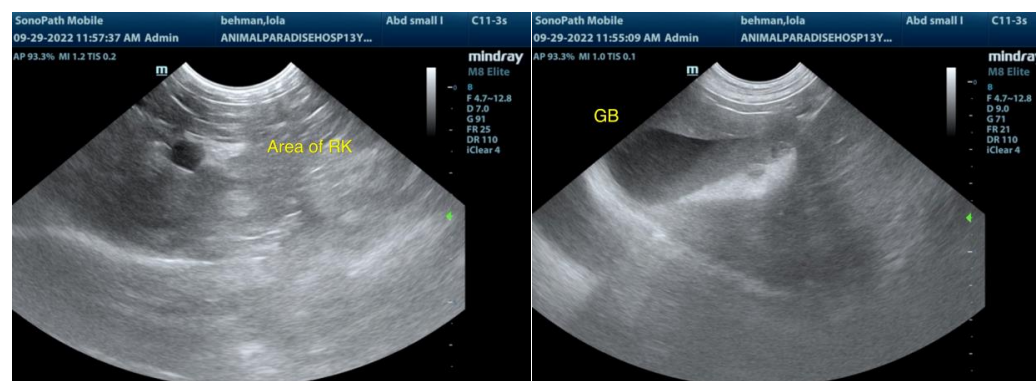
- Chronic mitral valve disease (ACVIM B1)
- Benign hepatopathy - vacuolar hepatopathy pattern
- Mild gallbladder debris (non-mucocele)
- Left kidney mild to moderate chronic renal changes
- Non-visualized right kidney - renal agenesis or severe atrophy possible
- Bilateral prominent adrenal glands

**INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATION**

The cause of the murmur is chronic degenerative valvular changes with secondary eccentric mitral valve insufficiency. The lack of left atrial enlargement implies that the risk of complication secondary to mitral valve insufficiency is low at this time and, without current clinical signs, indicates that medical therapy is not required. No other additional issues such as LV systolic dysfunction or evidence of clinical pulmonary hypertension. Conservative monitoring is recommended with a recheck echocardiogram in 6-12 months, sooner if clinical signs suggestive of heart disease develop.

The bilateral prominent adrenal glands are nonspecific and of unclear clinical significance, give the lack of clinical signs i.e., PU/PD, polyphagia, etc. A patient/age-related patient variant, mild benign hyperplasia, or non-functional adenomatous change is possible. No evidence of adrenal neoplastic criteria was noted. Assessment of systemic BP is recommended.

Hepatosupportive medications including Denamarin and Ursodiol may prove beneficial.





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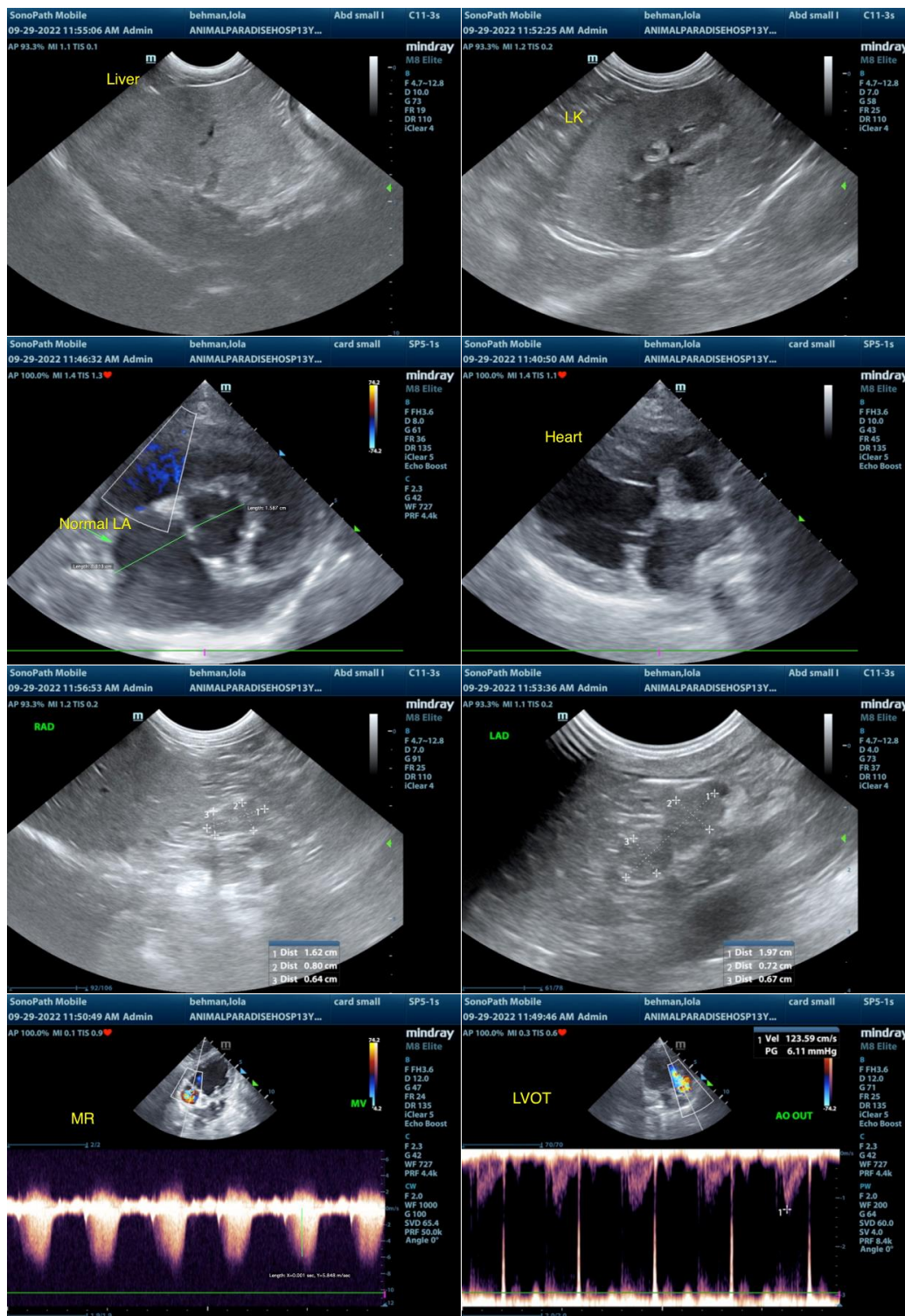
Dr. ElShafie

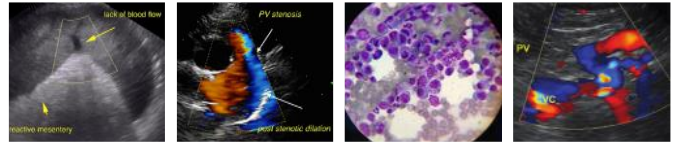
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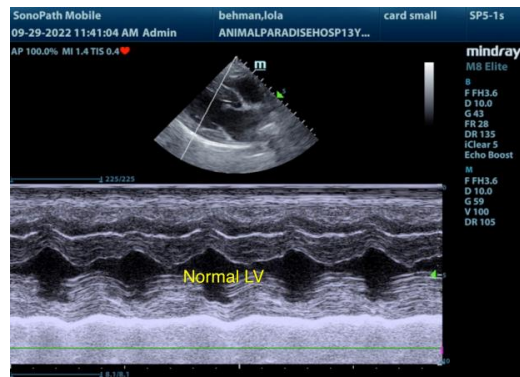
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The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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