
**PATIENT**

Muffy Spinosa

**SPECIES**

Canine

**BREED**

Chihuahua

**SEX**

Spayed Female

**AGE**

12 yrs

**WEIGHT**

6.8 lbs

**INTERPRETED BY**

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

**PRESENTING CLINICAL SIGNS**

12y/o FS Chihuahua with historical atopy, hepatopathy (LFT elevation) of unknown origin, MVDz stage B2 - on pimobendan, apoquel, ursodiol and denamarin.

Abnormal PE/Chem/CBC/UA Results: NEW weight loss of 0.3lbs in past 6 months (&lt;5% loss). Grade VI/VI pansystolic murmur PMI LHB. LFT elevations (May 2023): -AlkP 277U/L -ALT 452 U/L Remaining labs (chem/cbc) wnl. BP 170-175mmHg systolic on doppler.

**ULTRASONOGRAPHIC EXAMINATION OF THE HEART**

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	<1.3	28-40	40-100	<0.6
PATIENT			NM	1.4	48	80	0.18
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				
PATIENT		1.4	0.85		2.4	2.1	

**IMAGING PERFORMED BY**

Dr. Sorbo

**HOSPITAL NAME**

 Mill Brook Animal  
 Clinic - VBF

**REFERRING VET**

Dr. Sorbo

**INVOICE**

10334

**DATE**

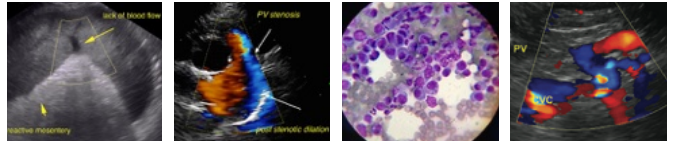
7/17/2023

**Cardiac Presentation**

The echocardiogram in this patient demonstrated minor increased left atrial size based on 2 different LA measurement methods. The cranial and caudal mitral valve leaflets presented moderate thickening (anterior > posterior) consistent with endocardiosis with mild septal leaflet prolapse. 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 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.

**Urinary System**

The urinary bladder, trigone, cystourethral junction, and visible pelvic urethra to a depth of 2 cm exhibited normal thickness and tone. Anechoic urine was present in the lumen with no uroliths or



**PATIENT**

Muffy Spinosa

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

**SPECIES**

Canine

The area of the aortic trifurcation was free of pathology.

**BREED**

Chihuahua

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. Pinpoint medullary mineral was noted in both kidneys. The left kidney measured 3.2 cm in length. The right kidney measured 3.1 cm in length.

**SEX**

Spayed Female

**Adrenal Glands**

The bilateral adrenal glands were normal in size. Mild parenchyma heterogeneity and mild capsule asymmetry was present without suspicion for overt neoplasia. The left adrenal gland measured 0.56 cm width. The right adrenal gland measured 0.47 cm width.

**AGE**

12 yrs

**Spleen**

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.

**WEIGHT**

6.8 lbs

**INTERPRETED BY**

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

**Liver/ Gallbladder**

The liver presented enlarged in size. The parenchyma of the liver was subjectively normal in echogenicity compared to the spleen and renal cortices. The liver parenchyma was uniform with a mildly coarse echotexture. The capsule of the liver was symmetrically rounded to mildly swollen in margination. The hepatic and portal vasculature were normal in appearance without signs of congestion. The gallbladder was non-distended in size with thin walls and primarily anechoic luminal content with mild to moderate variable hyperechoic nonorganized gallbladder sediment. The cystic and common bile ducts were normal.

**IMAGING PERFORMED BY**

Dr. Sorbo

**Gastrointestinal**

**HOSPITAL NAME**

Mill Brook Animal  
Clinic - VBF

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.

**REFERRING VET**

Dr. Sorbo

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.

**INVOICE**

10334

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

**DATE**

7/17/2023

**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. Consistent with age related pancreatic changes and incidental.

**Free Abdomen**

No overt lymphadenopathy or peritoneal effusion was present.



**PATIENT**

Muffy Spinosa

**SPECIES**

Canine

**BREED**

Chihuahua

**SEX**

Spayed Female

**AGE**

12 yrs

**WEIGHT**

6.8 lbs

**INTERPRETED BY**

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

**IMAGING  
PERFORMED BY**

Dr. Sorbo

**HOSPITAL NAME**

Mill Brook Animal  
Clinic - VBF

**REFERRING VET**

Dr. Sorbo

**INVOICE**

10334

**DATE**

7/17/2023

**ULTRASONOGRAPHIC FINDINGS**

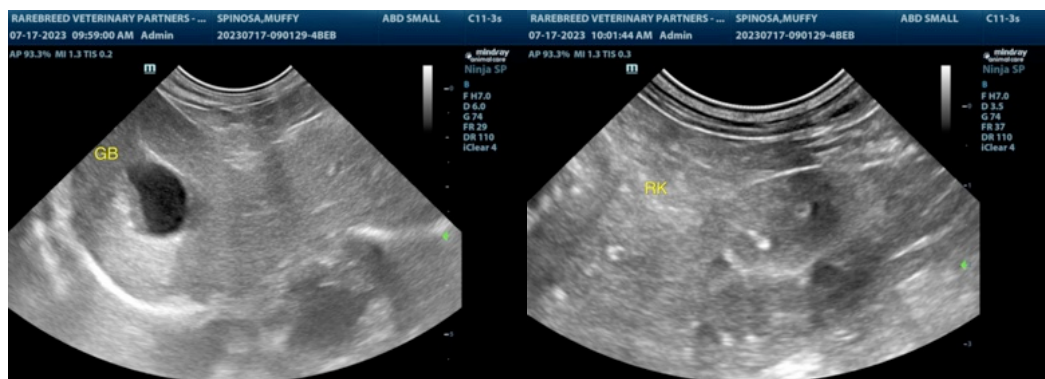
**Primary Findings**

- Compensated chronic mitral valve disease (ACVIM mild B2)
- Nonspecific hepatopathy – sonographically consistent with benign hepatopathy criteria
- Gallbladder sediment (non-mucocele)
- Sonographically unremarkable gastrointestinal tract
- Bilateral chronic renal changes.

**INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS**

The lack of significant LA enlargement or evidence of left heart volume overload indicates that the current and future risk of complication secondary to MR at this stage is low. No overt indication for cardiac medications yet continued Pimobendan would be reasonable. As this medication may potentially prolong cardiac changes associated with MR, serial sonographic monitoring is recommended. Recheck echocardiogram suggested in 6 months, sooner if clinically indicated.

Largely mild geriatric abdomen without sonographic evidence of significant pathology. Screening hepatic FNA cytology could be considered assuming normal clotting status for further assessment. A GI panel to include PLI/TLI/Cobalamin/Folate, as well as three view chest radiographs and neurological / musculoskeletal examination, are recommended to assess for or rule out occult disease which may cause weight loss. Continued hepatic supportive medication with monitoring of liver enzymes going forward is recommended.





**PATIENT**

Muffy Spinosa

**SPECIES**

Canine

**BREED**

Chihuahua

**SEX**

Spayed Female

**AGE**

12 yrs

**WEIGHT**

6.8 lbs

**INTERPRETED BY**

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

**IMAGING  
PERFORMED BY**

Dr. Sorbo

**HOSPITAL NAME**

Mill Brook Animal  
Clinic - VBF

**REFERRING VET**

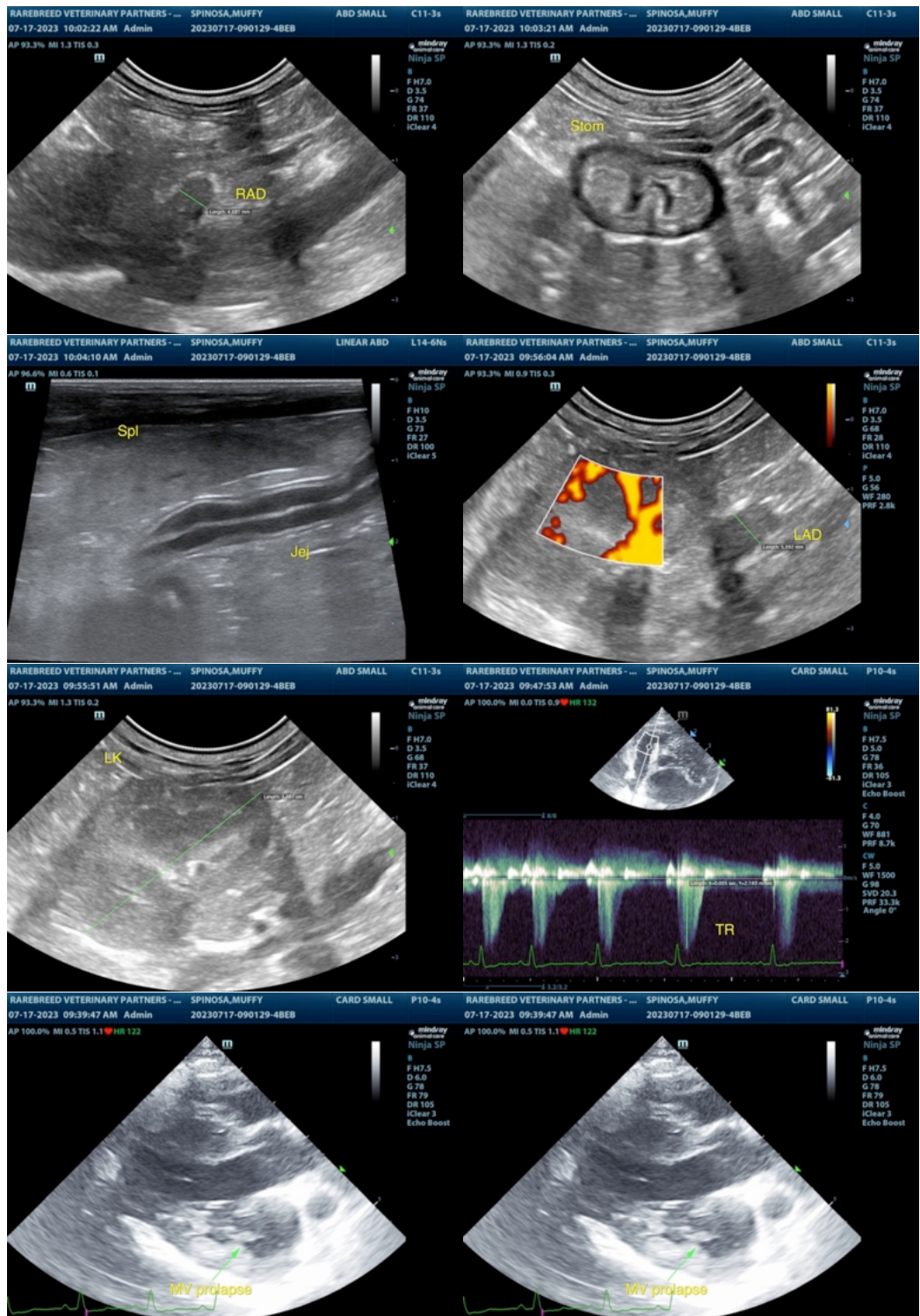
Dr. Sorbo

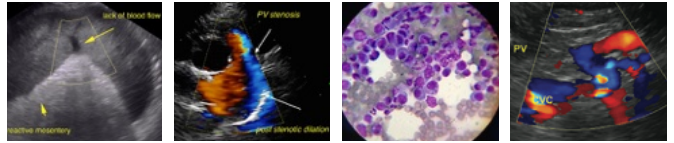
**INVOICE**

10334

**DATE**

7/17/2023





**PATIENT**

Muffy Spinosa

**SPECIES**

Canine

**BREED**

Chihuahua

**SEX**

Spayed Female

**AGE**

12 yrs

**WEIGHT**

6.8 lbs

**INTERPRETED BY**

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

**IMAGING  
PERFORMED BY**

Dr. Sorbo

**HOSPITAL NAME**

Mill Brook Animal  
Clinic - VBF

**REFERRING VET**

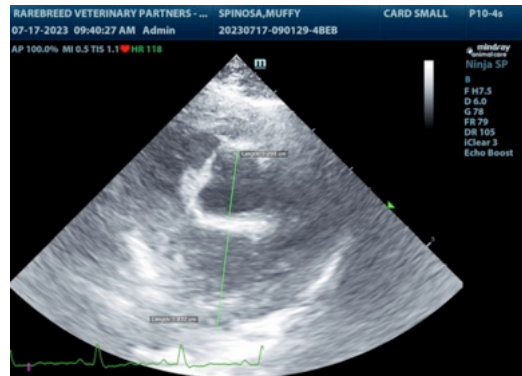
Dr. Sorbo

**INVOICE**

10334

**DATE**

7/17/2023



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