



**PATIENT PRESENTING CLINICAL SIGNS**

Laika Rodriguez

Patient presented as a referral for an abdominal ultrasound to further evaluate an abdominal mass and abdominal distention. Pt presented originally for intermittent bloody diarrhea which improved with hypoallergenic diet and doing well with the gastrointestinal problems 3-3-22. Presented again for evaluation as pt was distended and painful. Apparent abdominal mass was identified on radiographs on March 03, 2022. PT is currently on Doxycycline 50 mg, ½ tab PO BID x 28 d started on March 03, 2022. After the abdominal u/s and echocardiogram, an abdominocentesis was done and removed 985mls of transudate or modified transudate fluid.

**SPECIES**

Canine

**BREED**

Shih Tzu

Abnormal PE/Chem/CBC/UA Results: PE: not provided by rDVM, but prior to abdominal study a grade 4/6 systolic and diastolic Heart murmur were auscultated. Also abdominal distention palpated with fluid wave. X-rays: possible abdominal mass 4DX: Anaplasma positive on March 03,2022 BW: 3-3-22 Chem: wnl CBC: RBC 3.74 (5.5-8.5) HGB 6.5 (12-18) HCT 22.33 ( 37-55) PLT 130 (165-500)

**SEX**

Spayed Female

**ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN**

**Urinary System**

**AGE**

10 years

The **urinary bladder**, trigone, and pelvic urethra presented normal thicknesses and normal tone. The ureters were not visible which is normal. No uroliths or sediment were visualized and anechoic urine was present. No evidence of inflammatory or neoplastic changes was noted. Ureteral papillae were normal.

**WEIGHT**

13.8 lbs

The **kidneys** revealed normal size and structure, corticomedullary definition and ratio for this age. The cortices presented largely uniform texture with normal echogenic relationship to liver and spleen. Medullary structure differed distinctly from the cortex and no evidence of pelvic dilation was present. The capsules were acceptably uniform without significant irregularities. The right kidney measured 4.3 cm. The left kidney measured 4.3 cm.

**INTERPRETED BY**

Eric Lindquist, DMV  
DABVP, Cert. IVUSS

**Adrenal Glands**

**IMAGING PERFORMED BY**

Dr. Ferrer

Both **adrenal glands** were visualized and recognized as having normal shape, size, position and echogenicity for this breed. The phrenic vasculature, glandular echogenicity and detail were unremarkable. Capsule, cortex, and medullary definition were normal for this age patient.

**HOSPITAL NAME**

Paseos VC

**Spleen**

**REFERRING VET**

Dr. Montanez

The **spleen** revealed a complex, mixed echogenic parenchymal mass that measured 4.6 cm with nodular changes elsewhere.

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**Liver**

**DATE**

4/13/22

The **liver** images from right and left intercostal as well as subcostal views revealed subjectively normal liver size, contour, and structure. Some age-related parenchymal remodeling was noted but likely not clinically significant at this time. Hepatic vein dilation was noted. This is consistent with passive congestion. The gallbladder presented some dependent debris with essentially normal contour. The cystic and common bile ducts were normal. No overt evidence of active inflammatory, infiltrative or



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regenerative pathology was noted but should be paired with current or past LE elevations regarding any clinical significance to this presentation. The hepatic lymph nodes were unremarkable.

**SPECIES**

Canine

**Gastrointestinal**

The **stomach** appeared normal. Variable gastrointestinal thickening was noted.

**BREED**

Shih Tzu

**Pancreas**

The base and limbs of the **pancreas** were observed to be largely isoechoic to surrounding omental fat. Pancreatic duct and capsular contour were acceptably normal and parenchyma respected normal curvilinear patterns. No overt evidence of active inflammatory or neoplastic disease was noted.

**SEX**

Spayed Female

**Free Abdomen**

**AGE**

10 years

Ascites was noted in this patient.

**WEIGHT**

13.8 lbs

**ULTRASONOGRAPHIC EXAMINATION OF THE HEART**

The echocardiogram in this patient revealed severe volume overload of the right heart with tachyarrhythmia. Right atrial and right ventricular dilation was noted. Tricuspid insufficiency was noted. This is consistent with severe pulmonary hypertension. No masses are present. There was no pericardial effusion present. Volume contraction of the left heart was noted with paradoxical septal motion of the left ventricle.

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**DATE**

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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>		4.5	1.15	1.2			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)		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>			2.5	13.8 lbs	1.35 max	1.0	



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**ULTRASONOGRAPHIC FINDINGS**

Right-sided heart failure, pulmonary hypertension. Passive congestion, moderate.

Concurrent splenic mass and ascites.

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Canine

**INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS**

**BREED**

Shih Tzu

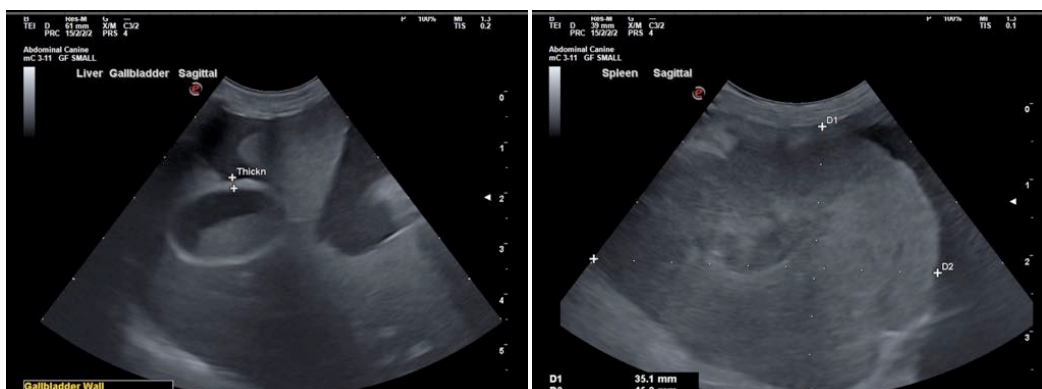
Ascites could be contributing to pulmonary hypertension and right sided failure, yet concurrent exfoliating neoplasia is also possible. Cytospin of the free fluid is recommended to assess for exfoliating neoplasia. FNA of the splenic mass and chest radiographs are warranted to assess for pulmonary disease that may be causing or contributing to pulmonary hypertension. The prognosis is poor. Treatment for right-sided heart failure with Spironolactone, ace inhibitor and Sildenafil would all be indicated as a temporary measure. If the right heart can be stabilized then eventual splenectomy would be warranted. However, multi-focal neoplastic process may be in play.

**AGE**

10 years

**WEIGHT**

13.8 lbs



**INTERPRETED BY**

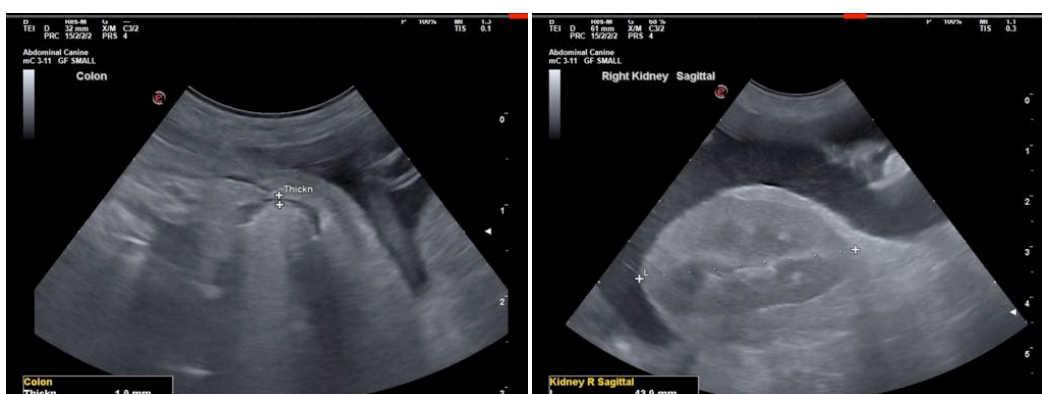
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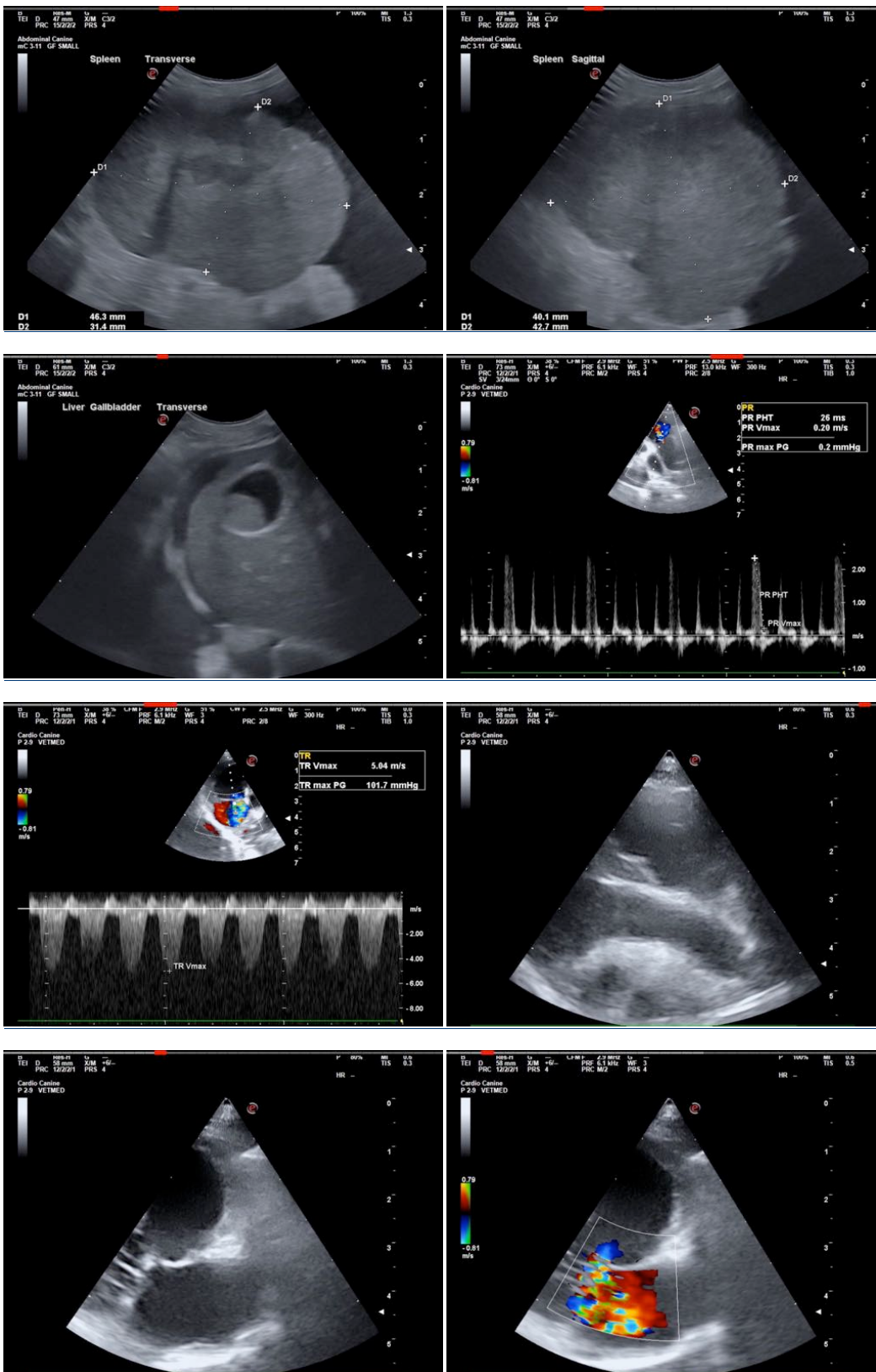
Dr. Montanez

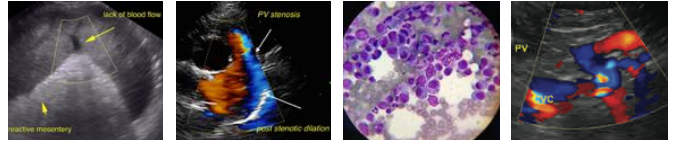
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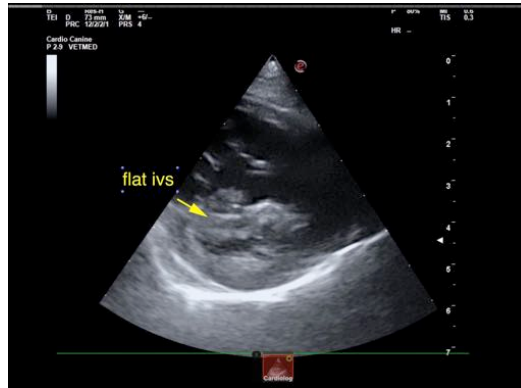
Spayed Female

**AGE**

10 years

**WEIGHT**

13.8 lbs



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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.

**IMAGING PERFORMED BY**

Dr. Ferrer

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.

**HOSPITAL NAME**

Paseos VC

Eric Lindquist, DMV, DABVP, Cert. IVUSS, CEO of SonoPath.com  
info@SonoPath.com

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Dr. Montanez

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