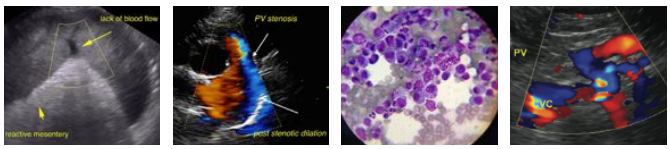
SonoPath
Clinical Sonography & Telecytology
EDUCATIONAL TELECONSULTATION SERVICES™



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

PATIENT
Rocky Heys

SPECIES
Canine

BREED
Labrador

SEX
Male

AGE
5 months

WEIGHT
42 lbs

INTERPRETED BY
Eric Lindquist, DMV DABVP, Cert. IVUSS

IMAGING PERFORMED BY
Shari Reffi, CVT

HOSPITAL NAME
Fredon AH

REFERRING VET
Dr. Grau

INVOICE
44700

DATE
6/13/23

PRESENTING CLINICAL SIGNS

History: New rescue, poor body condition, distended abdomen. Rads suggested distended stomach, irregular spleen vs liver vs both. BW/ua suggested PLN. Now swollen chin. Current meds: Baytril (low dose due to age/breed), Penicillin, IVF.
Abnormal PE/Chem/CBC/UA Results: WBC 24.5 now 22.6; BUN was 41 now 29; Creat 2.4 now 1.4; PHOS 8.1 now 7.8, K+ was 5.9 now 5.2, ALT 277 ALP 607. USG 1.030 had been 1.011; WBC/RBC/cocci; protein -slight improvement on Abx.

ULTRASONOGRAPHIC EXAMINATION OF THE HEART

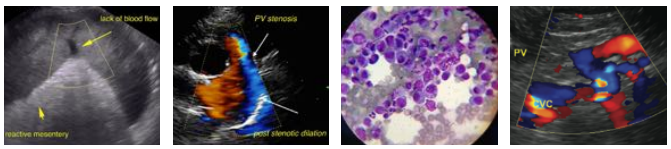
The echocardiogram in this patient was volume contracted and had a hypocontractile left side of the heart. An overwhelming right sided cardiac enlargement was noted. Severe right ventricular and right atrial dilation was noted. Severe tricuspid insufficiency was noted with secondary right-sided heart failure. The tricuspid annulus was essentially unrecognizable and malformed. The leaflets were completely undeveloped. This is most consistent with severe tricuspid valve dysplasia. Pulmonic outflow velocity was fairly maintained. Paradoxical septal motion was noted in the left ventricular septum with deviation. Slight pericardial effusion was also noted.

CANINE CARDIAC PARAMETERS	MR VMAX (m/s)	TR VMAX (m/s)	LA/AO (Boon method)	LA/AO (Heart Base;)	FS (%)	EF (%)	EPSS (cm)
NORMAL PARAMETER	4.5-5.5	<2.7	1.3	<1.6	28-40	40-100	<0.6
PATIENT			1.3		20		NM
CANINE CARDIAC PARAMETERS	**HR** (BPM)	**AV VMAX** (m/s)	**PV MAX** (m/s)	**BODY WEIGHT**	**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			1.0	42 lbs		2.9	

ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN

Urinary System

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.



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The **kidneys** were swollen with irregular contour. The right kidney measured 6.94 cm. The left kidney measured 4.92 cm.

Adrenal Glands

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. The right adrenal gland measured 1.97 x 0.52 cm at the cranial pole and 0.47 cm at the caudal pole. The left adrenal gland measured 2.63 x 0.4 cm at the cranial pole and 0.46 cm at the caudal pole.

Spleen

The **spleen** was enlarged and congested with micronodular changes noted. The contour was swollen.

Liver

The **liver** reveals severe passive congestion pattern with dilated vena cava that measured 2.52 cm with dilated hepatic veins and intrahepatic vasculature. The hepatic parenchyma was uniformly enlarged, yet severe hepatic vein dilation was noted along with coarse architecture. The gallbladder was deviated, yet unremarkable.

Gastrointestinal

Examination of the **gastrointestinal tract** revealed a stomach and intestine free of stasis, of normal wall thickness, acceptable curvilinear mural detail, and peristaltic activity. Small and large intestine demonstrated normal luminal chyme and stool consistency respectively. No obstructive or overt infiltrative disease was noted. No associated abnormal lymphatic activity was noted.

Pancreas

Pancreatic edema was noted owing to the passive congestion pattern.

Free Abdomen

A moderate amount of ascites was noted in the abdomen.

ULTRASONOGRAPHIC FINDINGS

Complex congenital defect involving right-sided volume overload and severe tricuspid dysplasia.

Slight pericardial effusion.

Severe passive congestion liver pattern with chronic inflammatory hepatopathy likely secondary to hypoxia.

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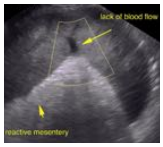
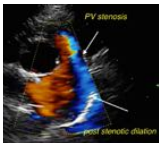
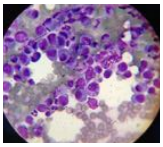
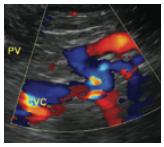

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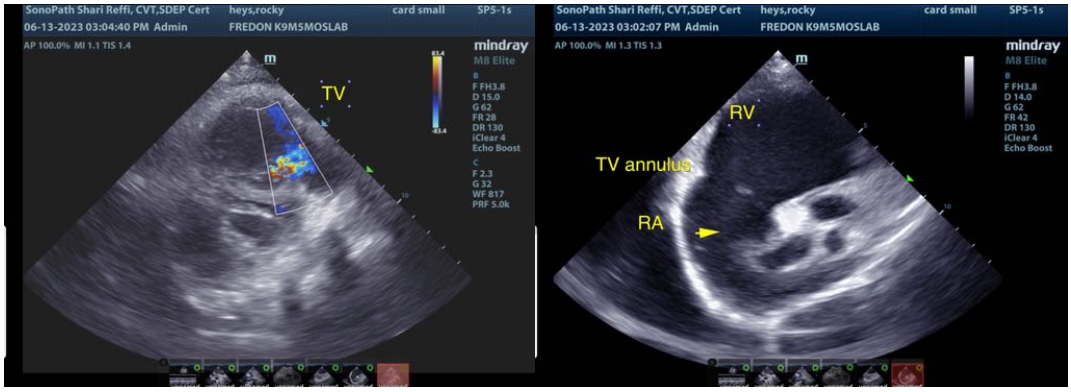
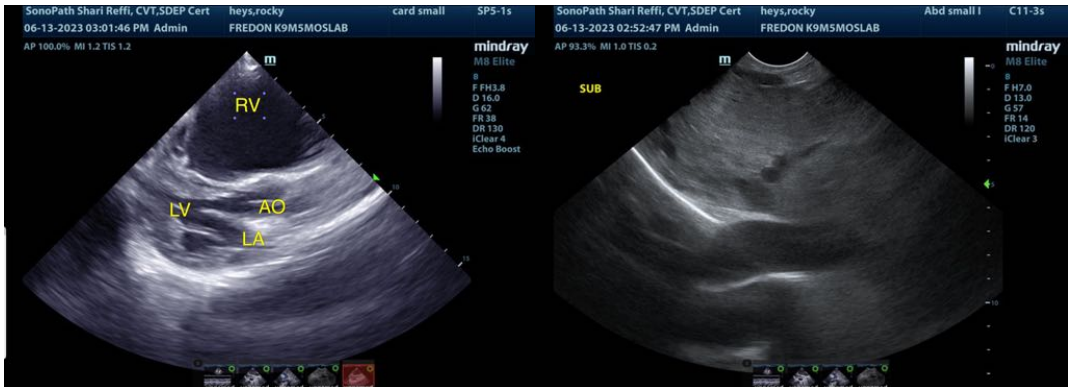
Passive congestion pancreatic and splenic patterns.

Irregular kidneys with loss of corticomedullary definition, possible primary renal dysplasia.

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

I cannot rule out complex intrahepatic shunting, yet the dilation is likely owing to passive congestion from right-sided heart failure. Referral for cardiologist intervention can be considered; however, the degree is severe. I cannot rule out a more complex disease process. Potential for primary renal dysplasia +/- intrahepatic shunting or severe secondary hepatic congestion owing to longstanding right-sided heart failure owing to primary congenital defect. This is a multi-factorial congenital issue in this patient. The breeding line should be fully evaluated both the abdomen and chest for concurrent congenital disease. Palliative therapy with ace inhibitor, Spironolactone and Sildenafil can be considered at 1 mg/kg b.i.d. up titrating to 1.5 mg/kg b.i.d. over the next 2 weeks. Pimobendan can also be initiated at 0.3 mg/kg b.i.d. However, these are palliative measures. BUN, creatinine, blood pressure measurements and respiratory rate should all be monitored carefully. Prognosis is poor.





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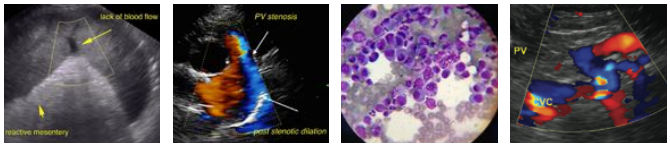

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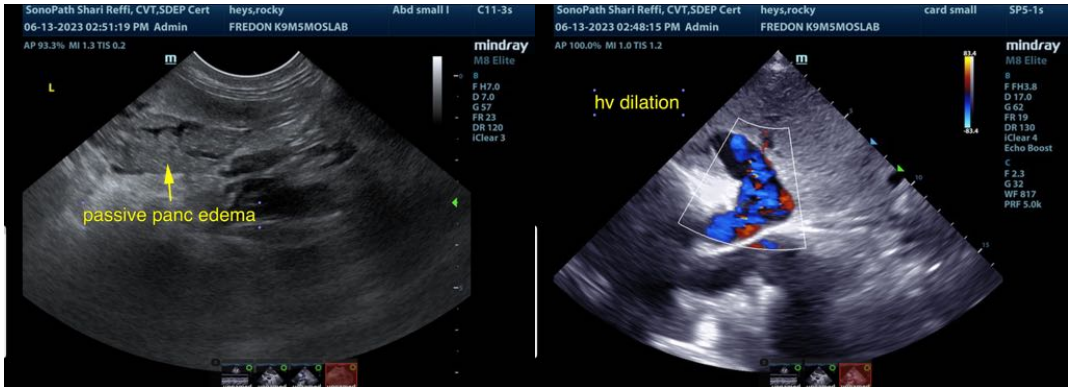

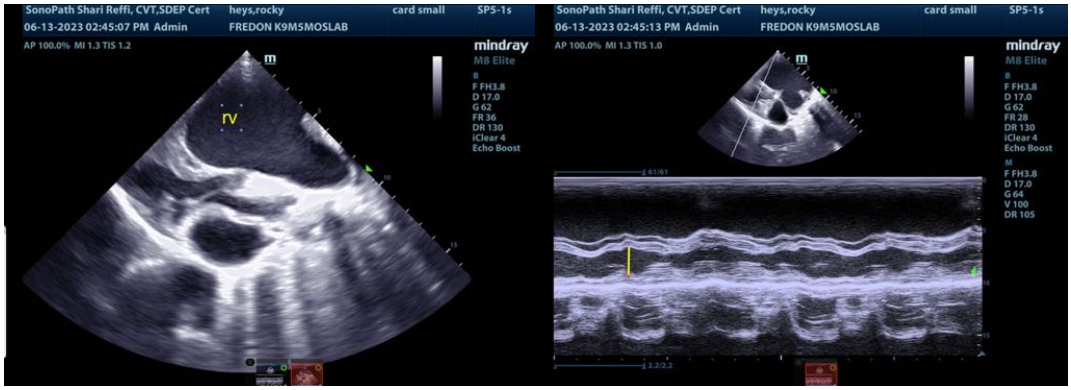

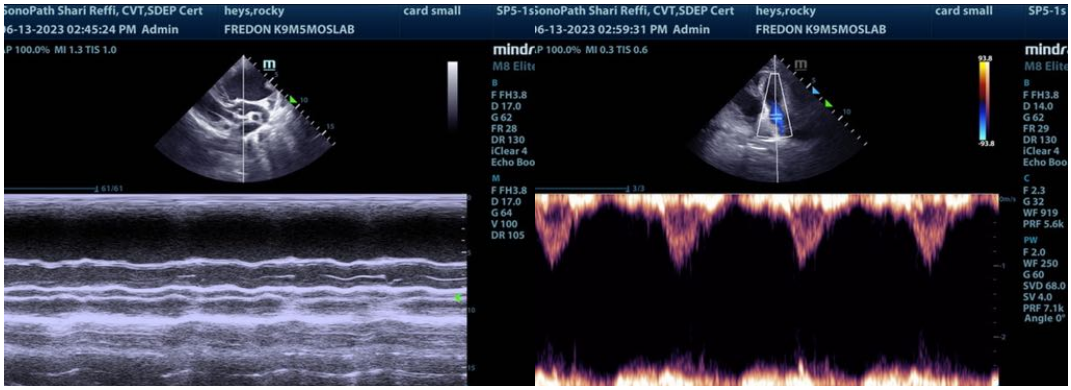

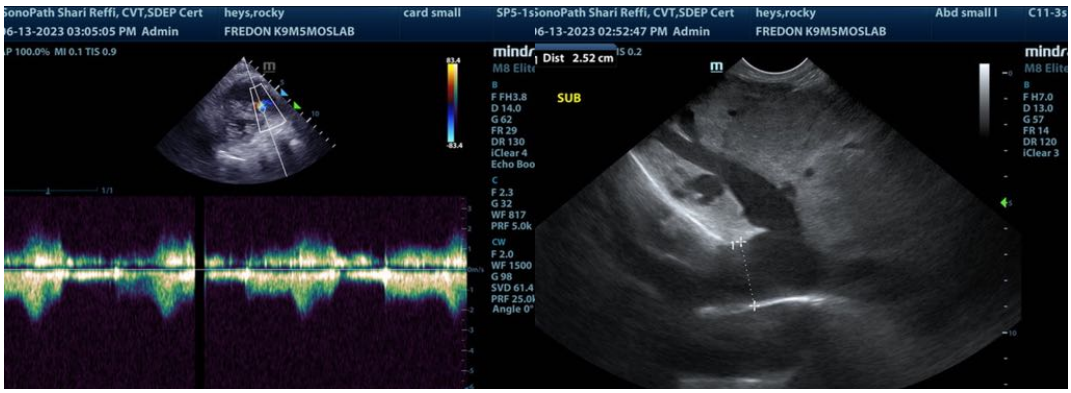

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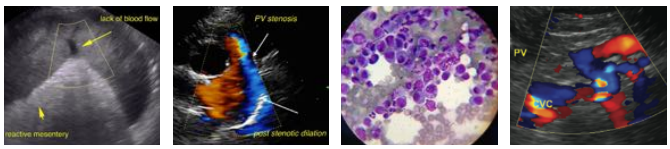

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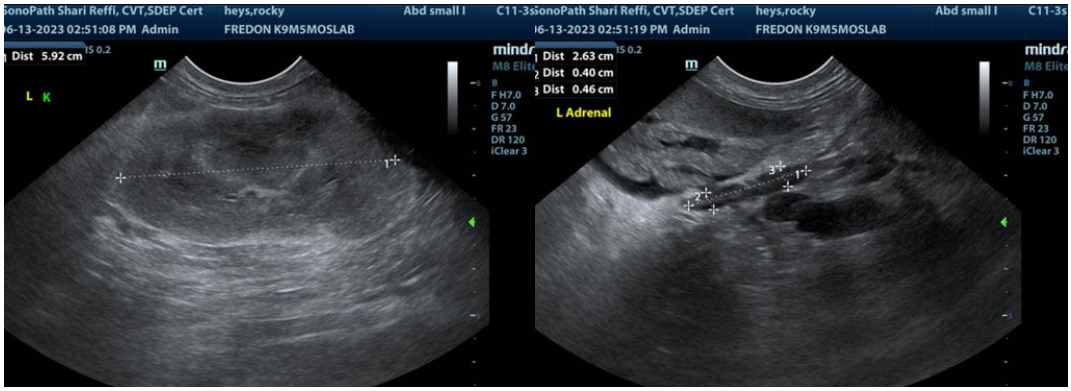

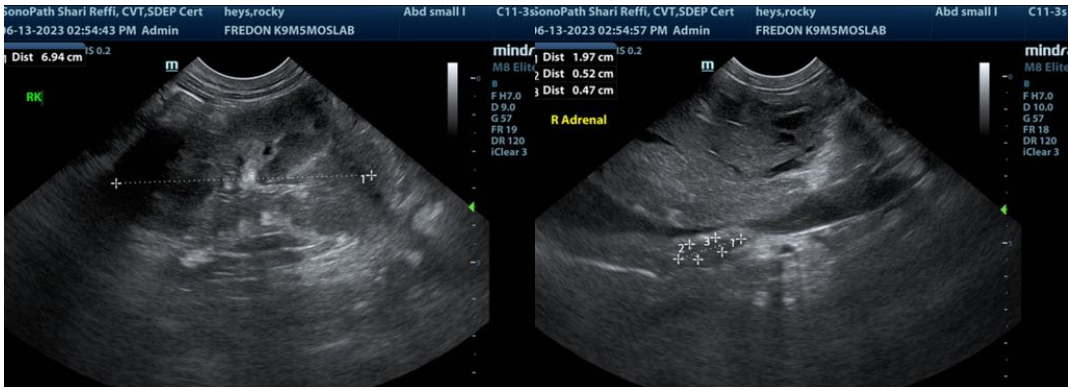

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The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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.

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