



**PATIENT PRESENTING CLINICAL SIGNS**

Ryleigh Animal Rescue

History: Has always been small stature compared to rest of litter. Referred for severe anemia and elevated liver enzymes and mild icterus.

**SPECIES**

Canine

Abnormal PE/Chem/CBC/UA Results: PE: Fever, Grade III left basilar systolic murmur, tachypnea/dyspnea, icterus, thin BCS CBC(initial prior to transfusion): HCT 13.5%, retics 104k, 15k, WBC 19k with neutrophilia and bands Chem: ALT 500, ALP ~2000, bilirubin 1.8 prior to transfusion but following day was 9.2 Lepto screening - negative, 4DX - negative, fecal float and Giardia SNAP negative Serum bile acids - normal, plasma ammonia - normal Chest rads: moderate to severe dense patchy interstitial pattern diffusely but more focused in perihilar and caudodorsal region Doppler BP (75 mmHg)

**BREED**

Boxer

**SEX**

Female

**ULTRASONOGRAPHIC EXAMINATION OF THE HEART**

**AGE**

12 ½ weeks

The echocardiogram in this patient demonstrated normal **left atrial** size based on 3 separate methods of LA evaluation. Trivial **mitral** insufficiency was noted. 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. **Right atrial** enlargement was noted with a 1:1 ratio with the left atrium. The **right ventricle** in this patient presented concentric hypertrophy with volume overload and deviation of the ventricular septum toward the left ventricle. Minor tricuspid insufficiency was noted. Pulmonic outflow revealed a stenotic pulmonic valve. The deep pulmonary artery revealed a 4.0 x 3.0 cm thrombus that occupied the post valvular pulmonary artery, main and auxiliary branches. This created a pulmonic stenosis type presentation; however, it cannot be ascertained whether the thrombus is causing the pulmonic stenosis or underlying pulmonic stenosis is present with secondary thrombosis. In oblique view the pulmonary artery thrombus superimposed the left atrium. Comet tail lung pattern was noted through the diaphragm. This is indicative of alveolar disease.

**WEIGHT**

4.4 kg

**INTERPRETED BY**

Eric Lindquist, DMV DABVP, Cert. IVUSS

**IMAGING PERFORMED BY**

Dr. Carver

**HOSPITAL NAME**

Red River Animal Rescue

**REFERRING VET**

Dr. Carver

**INVOICE**

94115

**DATE**

11/26/21

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	<1.6	28-40	40-100	<0.6
PATIENT			1.15		45		0.1
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		1.6	5.2	4.4 kb	1.7	2.5	



**PATIENT**

**ULTRASONOGRAPHIC FINDINGS**

Ryleigh Animal Rescue

Deep pulmonary artery thrombus with elevated velocity. This is consistent with pulmonic stenosis or may be secondary to the thrombosis. It is difficult to ascertain the pulmonic valve owing to thrombosis formation.

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Right ventricular concentric hypertrophy was noted with deviation of the ventricular septum owing to volume overload.

**BREED**

Boxer

**INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS**

**SEX**

Female

The stenotic pattern of the pulmonic valve may be secondary to the thrombosis. I recommend thrombolytic therapy which may necessitate interventional cardiology for retrieval of the thrombus or direct dissolution through interventional measures. Reassessment of the echocardiogram is recommended. The prognosis is extremely guarded. The patient is at high risk for sudden death. An abdominal sonogram is recommended to assess for primary disease that may be predisposing to thrombosis formation. Secondary pulmonary hypertension is present.

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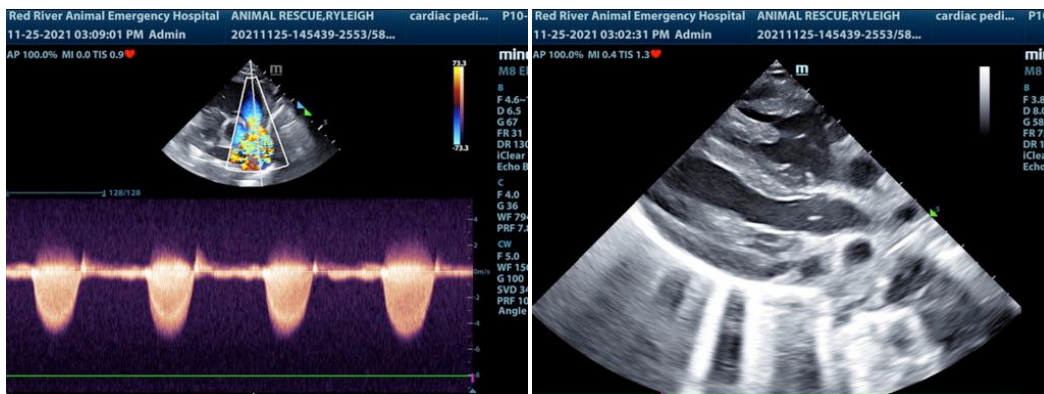
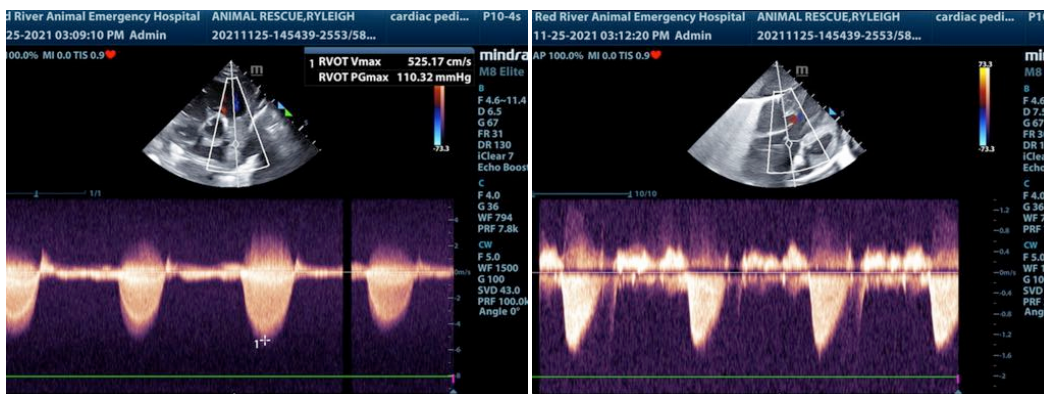
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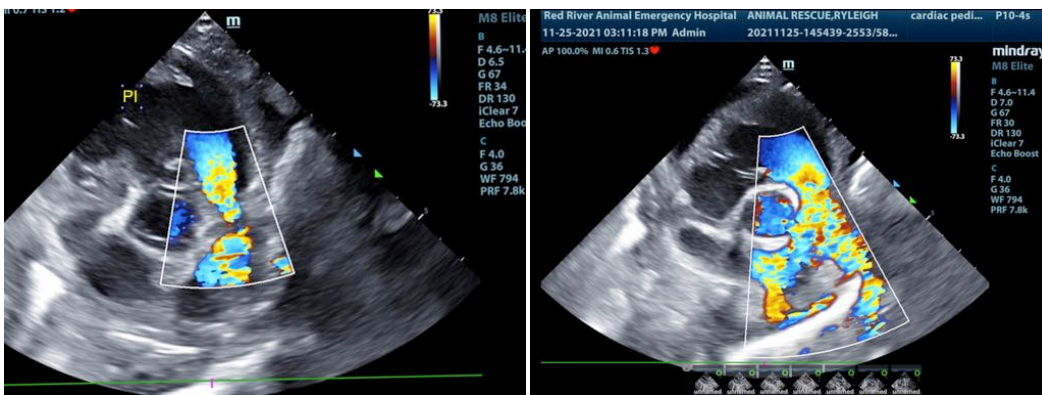
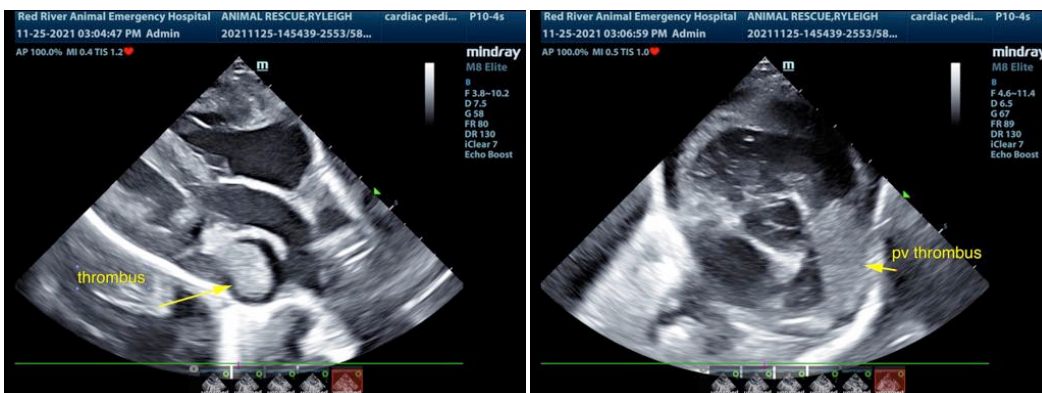
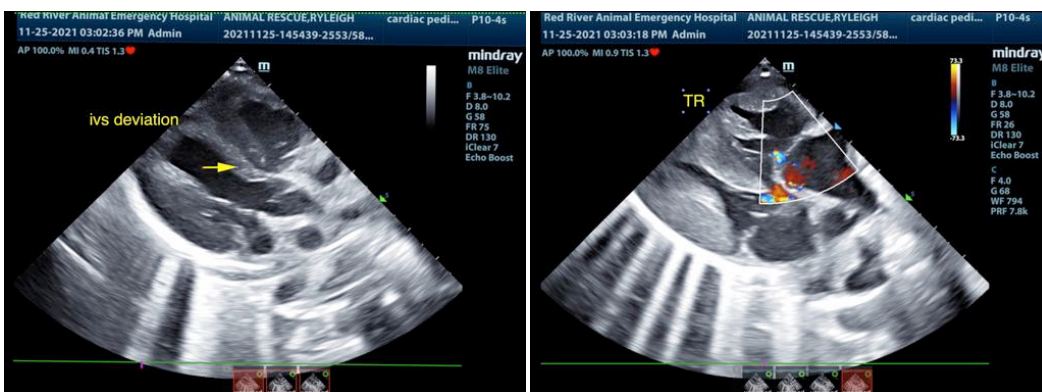
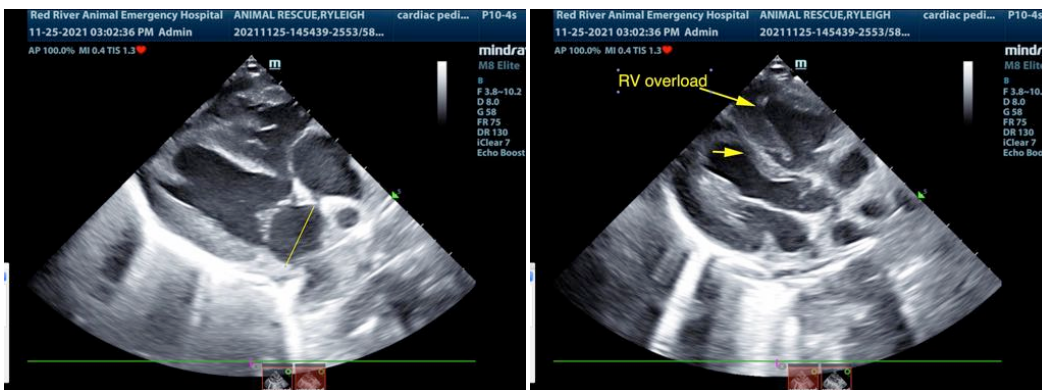
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The information and recommendations provided are based on the images presented by the referring veterinarian. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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