



PATIENT PRESENTING CLINICAL SIGNS

Hayley Callahan

History: History of chronic anemia and previous small splenic nodule, increased Alk. Phos. Current meds: Galliprant, Bromide. Gabapentin.

SPECIES

Abnormal PE/Chem/CBC/UA Results: HCT 35.7, HGB 11.3, MCH 19.8, MCHC 31.7, Reticulocytes 206, Potassium 5.8, Chloride 127, Anion Gap >7, ALP 278. Creatinine Kinase 455

Canine

BREED

Elkhound

SEX

Spayed female

AGE

14 years

WEIGHT

57 lbs

ULTRASONOGRAPHIC EXAMINATION OF THE HEART

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 normal 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** insufficiency was noted as well. 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.

INTERPRETED BY

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

IMAGING PERFORMED BY

Kelly Vazquez, CVT

HOSPITAL NAME

Marsh Hospital for Animals

REFERRING VET

Dr. Milwicki

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	5.2		1.1	1.0	31	61	0.1
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	131	1.08	0.7	57 lbs	3.5	2.82	

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PATIENT

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ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN

Urinary System

SPECIES

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The **urinary bladder**, trigone, and pelvic urethra presented normal thicknesses and normal tone. The pelvic urethra was imaged 3.0 cm beyond the cystourethral junction and appeared normal. 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.

BREED

Elkhound

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. Slight cortical infarct was noted in the caudal pole. The right kidney measured 5.96 cm. The left kidney measured 5.16 cm.

SEX

Spayed female

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Adrenal Glands

WEIGHT

57 lbs

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 2.1 x 1.19 cm at the cranial pole and 0.81 cm at the caudal pole. The left adrenal gland measured 1.87 x 0.57 cm at the caudal pole and 0.73 cm at the cranial pole.

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Spleen

The **spleen** revealed hypoechoic nodules that measured 0.42 cm.

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Liver

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. Vascular and biliary tracts were of normal volume and no evidence of congestion was noted. The gallbladder presented minor polyps and debris.

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Gastrointestinal

The **stomach** revealed two separate structures present. One was in the pylorus and the second was in the gastric fundus. The one in the gastric fundus measured approximately 3.0 cm. The second structure appears to be a mass, but also appears to be luminal.

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Pancreas

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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.

SPECIES

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ULTRASONOGRAPHIC FINDINGS

BREED

Elkhound

Mitral and tricuspid insufficiency, compensated at this time. Stage B1 valvular disease.

SEX

Spayed female

Undefined gastric luminal structures. Foreign matter versus epithelial based tumors cannot be completely defined.

Splenic nodule.

Otherwise, age related abdominal changes.

AGE

14 years

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

The anemia may be deriving from gastric blood loss and based on the gastric presentation. Feeding history should be evaluated as to ingestion of potatoes or similar ingesta that can present in this fashion. However, the fundic structure appears to be more dramatic. Endoscopy or gastrotomy is recommended.

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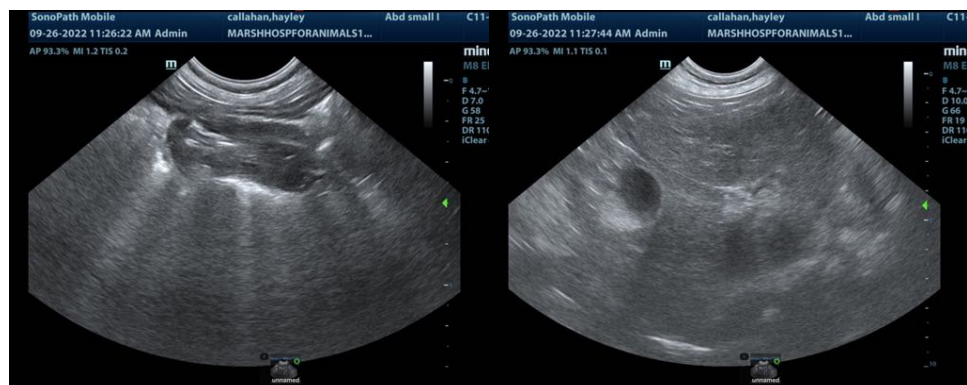
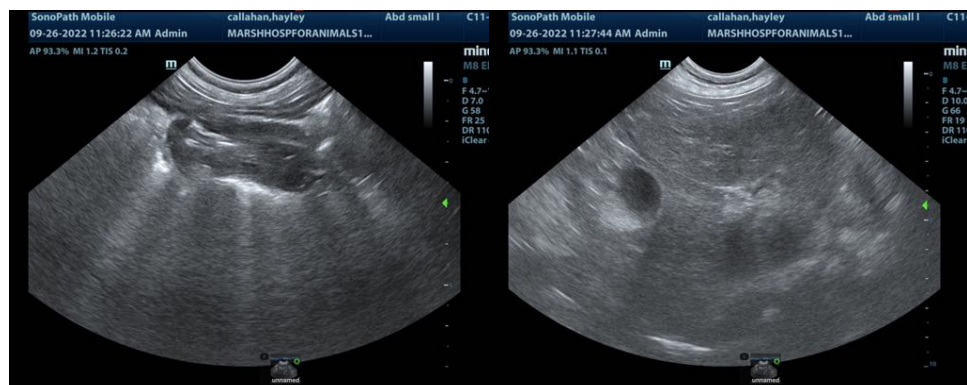
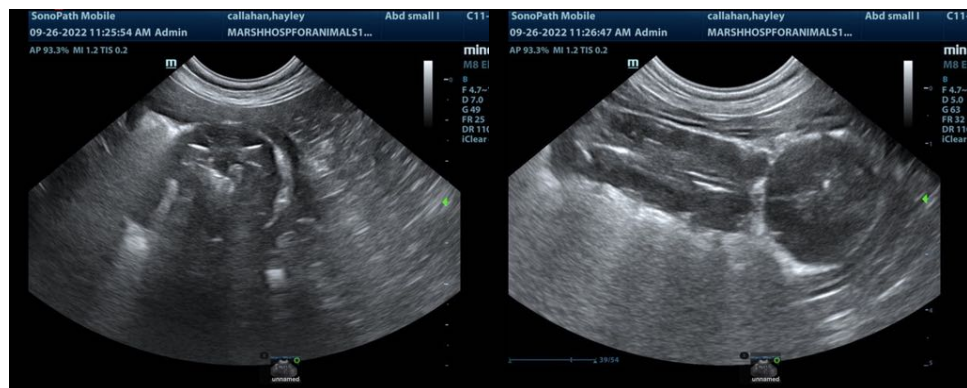
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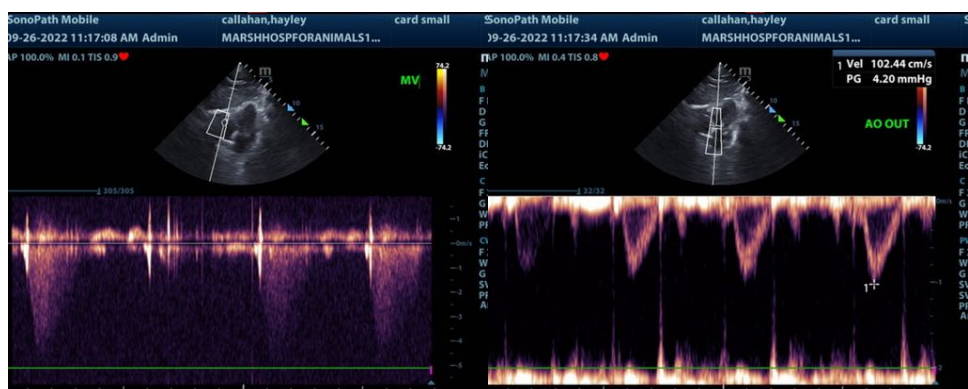
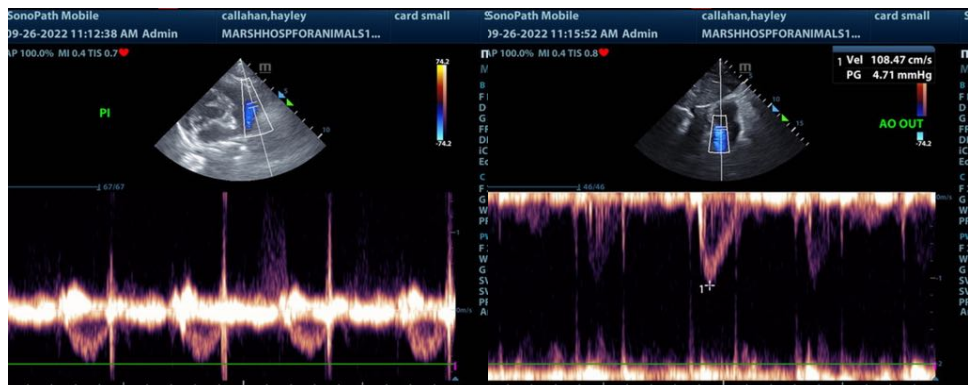
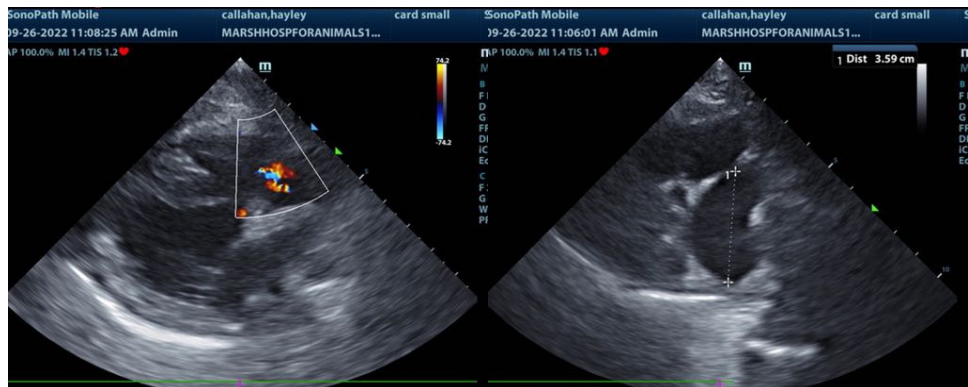
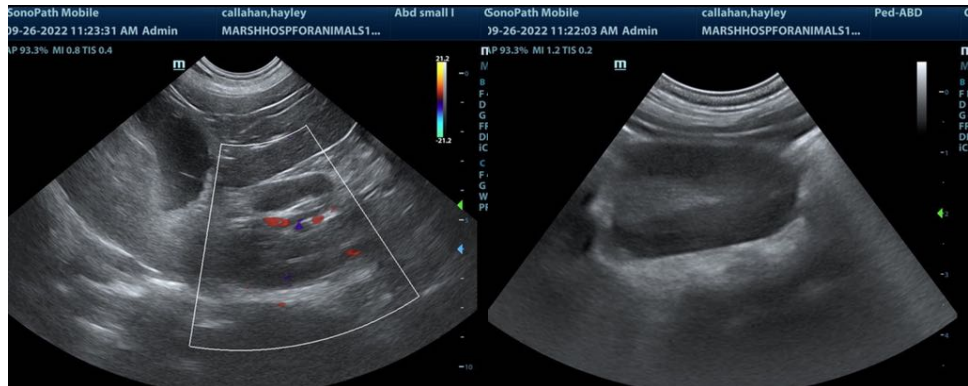
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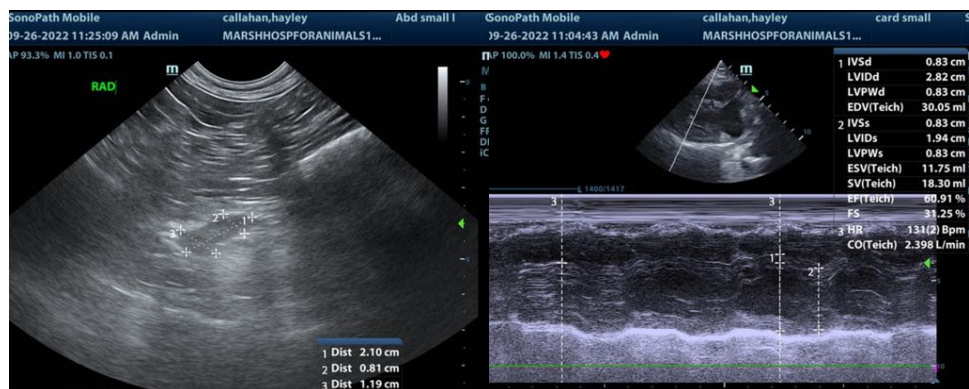
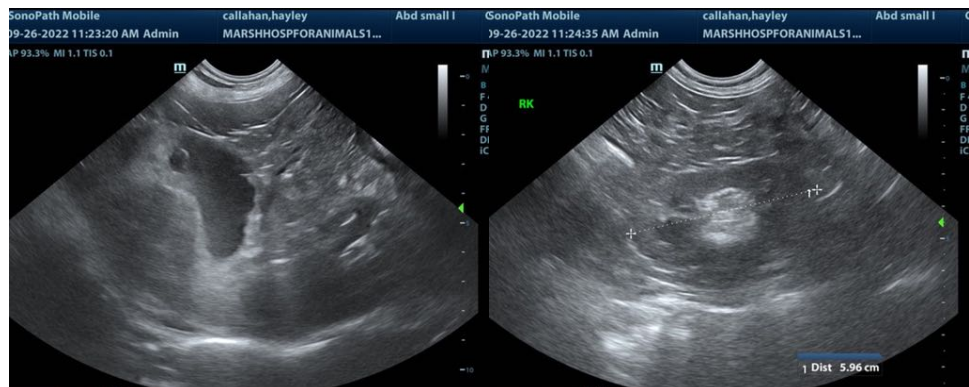
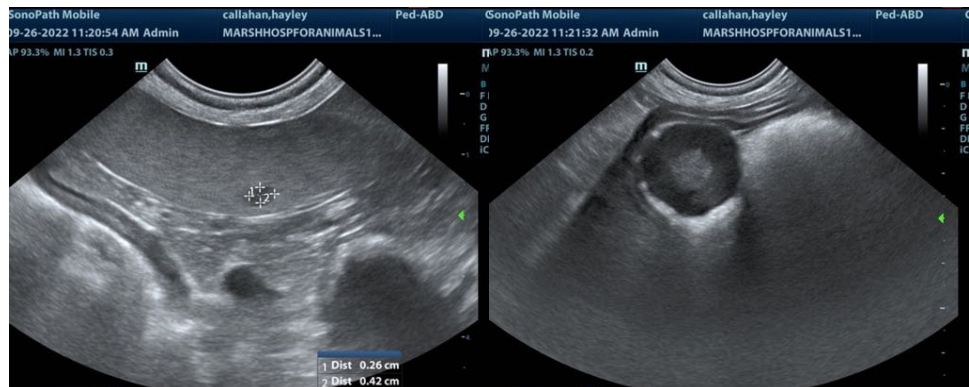
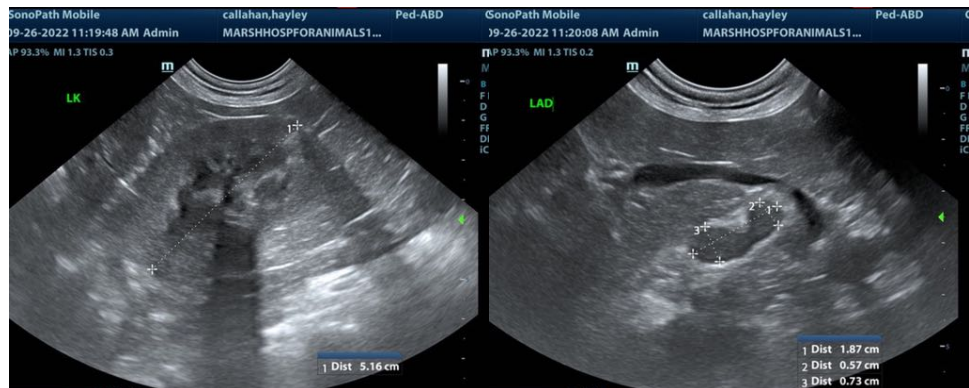
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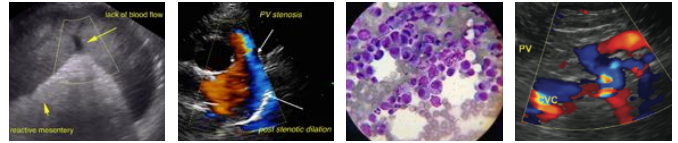
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1	IVSd	0.83 cm
	LVIDd	2.82 cm
	LVPWd	0.83 cm
	EDV(Teich)	30.05 ml
2	IVSs	0.83 cm
	LVIDs	1.94 cm
	LVPWs	0.83 cm
	ESV(Teich)	11.75 ml
	SV(Teich)	18.30 ml
	EF(Teich)	60.91 %
	FS	31.25 %
3	HR	131 (g) Bpm
	CO(Teich)	2.398 L/min



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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.

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