


PATIENT

Belle Kochevar

PRESENTING CLINICAL SIGNS

Sudden onset of grade II/VI heart murmur. Hind end weakness/neurologic. Hx of frank bloody diarrhea after Carprofen inj. No issue with Carprofen prior when given for msk issues.

SPECIES

Canine

Current meds: Gabapentin, Tramadol, discontinued Trilostane 4d ago.

Abnormal PE/Chem/CBC/UA Results: bun 34, alb 4.1, alkp 385, alt 127, amyl 448

BREED

Coton de Tulear

ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN AND HEART
SEX

FS

AGE

11yr

WEIGHT

16.7lb

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	50.	1.7		1.1	36.1	68.3	0.21
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	190	1.0	1.0		2.3	2.3	

INTERPRETED BY

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

Cardiac Presentation

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 mild to moderate thickening consistent with endocardiosis. No evidence of valvular prolapse or chordae tendinea rupture. Doppler indicated mild to moderate eccentric 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 concurrent 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.

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Shari Reffi CVT

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Urinary System

The urinary bladder, trigone, cystourethral junction, and visible pelvic urethra exhibited normal thickness and tone. Anechoic urine was present in the lumen with no uroliths or sediment. The ureteral



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

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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. The left kidney measured 3.5 cm in length. The right kidney measured 4.1 cm in length.

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The area of the aortic trifurcation was free of pathology.

Adrenal Glands

SEX

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The left adrenal gland was uniform in size and contour with a uniformly hypoechoic parenchyma. The left adrenal gland measured 0.54 cm width at the caudal pole and 0.5 cm length. The right adrenal gland was uniform in size and contour with a uniformly hypoechoic parenchyma. The right adrenal gland measured 0.61 cm width at the caudal pole and 1.4 cm length. No adrenal tumors.

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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.

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Liver/Gallbladder

The liver presented normal 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 mildly distended in size with moderate non-dependent mildly organized variably echogenic debris in a non-stellate pattern occupying the majority of the gallbladder lumen. Minor regional gallbladder wall edema present. Potential for concurrent luminal mucus. Subtle mildly hyperechoic pericholecystic omentum present. The cystic and common bile ducts were normal.

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Gastrointestinal

The stomach presented intact wall layering with a normal wall layer ratio. The lumen of the stomach contained mild non-shadowing ingesta/chyme with no signs of ileus, obstruction or foreign material.

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The small intestine presented intact wall layering with 1:3 muscularis/mucosa ratio. The lumen of the small intestine contained minor non-shadowing ingesta/chyme with no signs of ileus, obstruction or foreign material.

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The descending colon walls presented intact yet prominent wall layering with mild thickened to echogenic submucosa. Formed to semi formed fecal matter was present in the colon lumen with lumen dilation.

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Pancreas

The parenchyma of the left limb, body and right limb of the pancreas presented isoechoic to the adjacent omental fat. A normal curvilinear capsule contour of the pancreas was present. The visible pancreatic duct was normal. No signs of active inflammation or neoplastic disease was evident.

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Free Abdomen

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No omental masses, overt lymphadenopathy or peritoneal effusion was present.

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ULTRASONOGRAPHIC FINDINGS

- Compensated chronic mitral valve disease (ACVIM B1)
- Mild TR-no evidence of clinical pulmonary hypertension
- Gallbladder mucocele/cholecystitis pattern
- Benign hepatopathy exhibiting minor parenchymal remodeling
- Overtly normal GI tract with mild GI non-shadowing ingesta and concurrent colitis
- Mild chronic renal changes

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

SEX

FS

The cause of the murmur is chronic degenerative valvular changes with secondary eccentric mitral valve insufficiency. The lack of left atrial enlargement implies that the risk of complication secondary to mitral valve insufficiency is relatively low at this time and, without current clinical signs, indicates that medical therapy is not required at this stage. Prognosis at this stage is highly variable and serial sonographic monitoring is recommended with a recheck echocardiogram in 6-12 months, sooner if clinical signs suggestive of heart disease develop.

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The primary finding of the abdominal study is the gallbladder mucocele with evidence of associated inflammation. Given the relatively mild hepatic enzyme elevations the gallbladder is of unclear clinical significance, however aggressive therapy for cholecystitis and gallbladder mucocele may be indicated given reported positive Murphy sign.

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Some or all of the following with close clinical monitoring as well as serial assessment of hepatic enzymes for evidence of increasing hepatobiliary cholestasis is recommended. Eventual cholecystectomy may be indicated pending further assessment.

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Enrofloxacin 5 mg/kg SID PO & Metronidazole (10-20 mg/kg po bid) over 3 weeks, Ursodiol (10-15 mg/kg p.o. q24h) over 8 weeks and recheck sonogram. Monitor rapid rise in ALT, SAP, Bilirubin, bilirubinuria, leukocytosis, focal cranial abdominal subxiphoid discomfort or progressive anorexia.

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More information regarding clinical emerging mucocele issues may be found with our article and research at <http://sonopath.com/resources/articles>, Defining a GB Mucocele and Clinical Parameters in Dogs with Sonographically Diagnosed Surgical Biliary Disease from ECVIM 2009.

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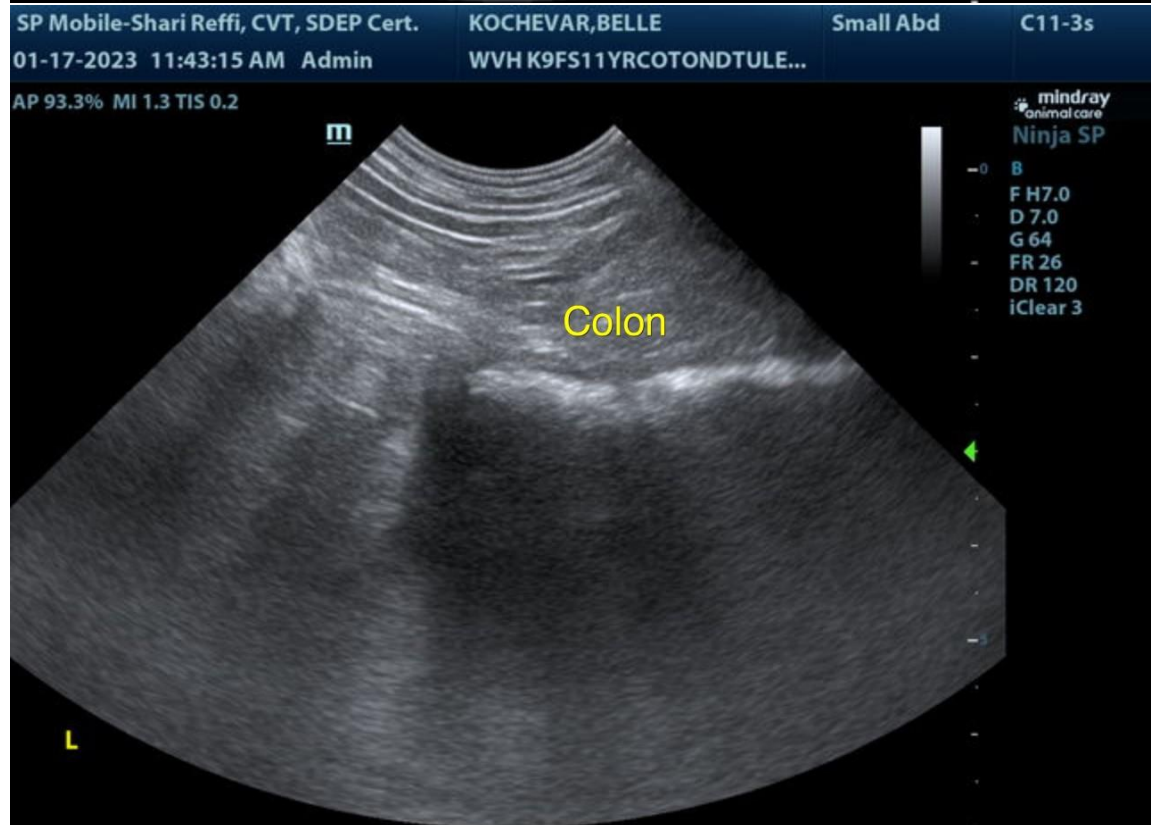
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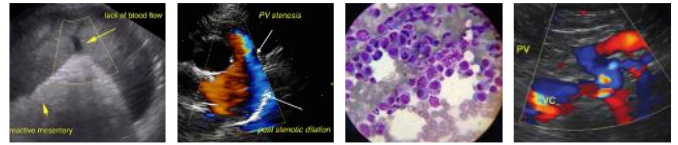
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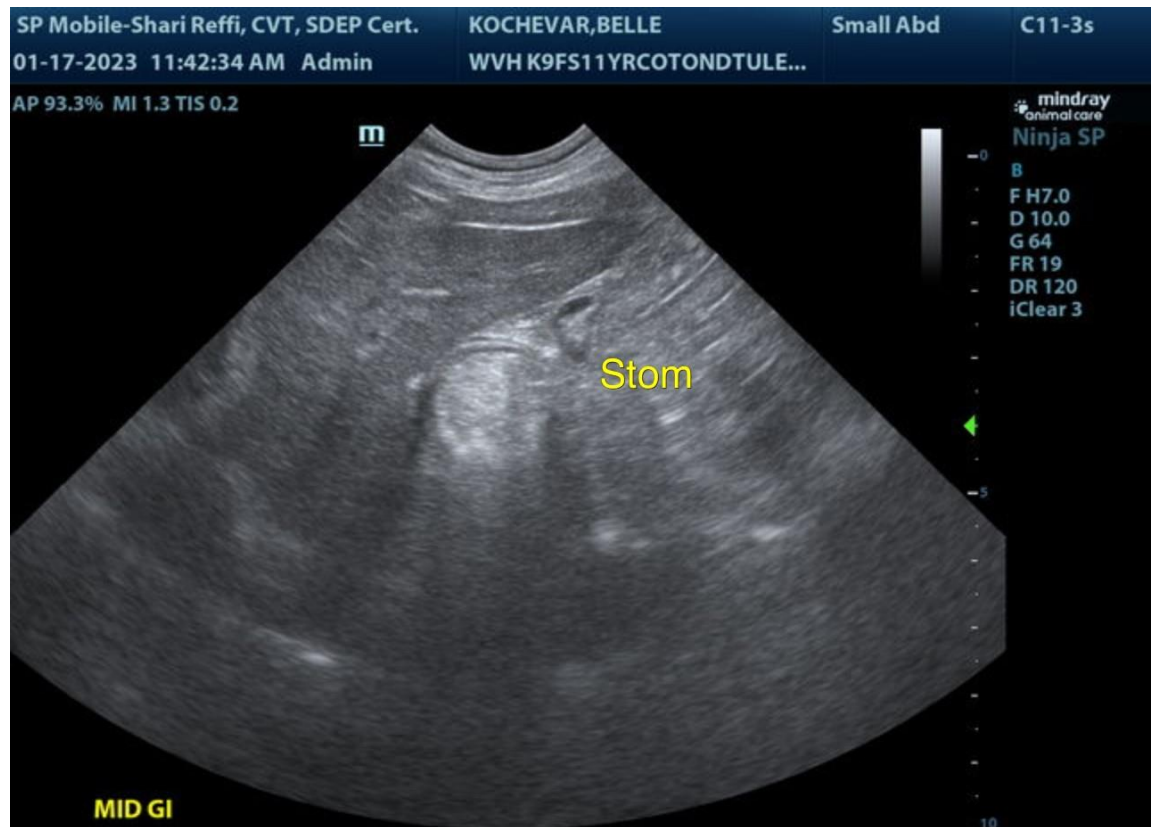
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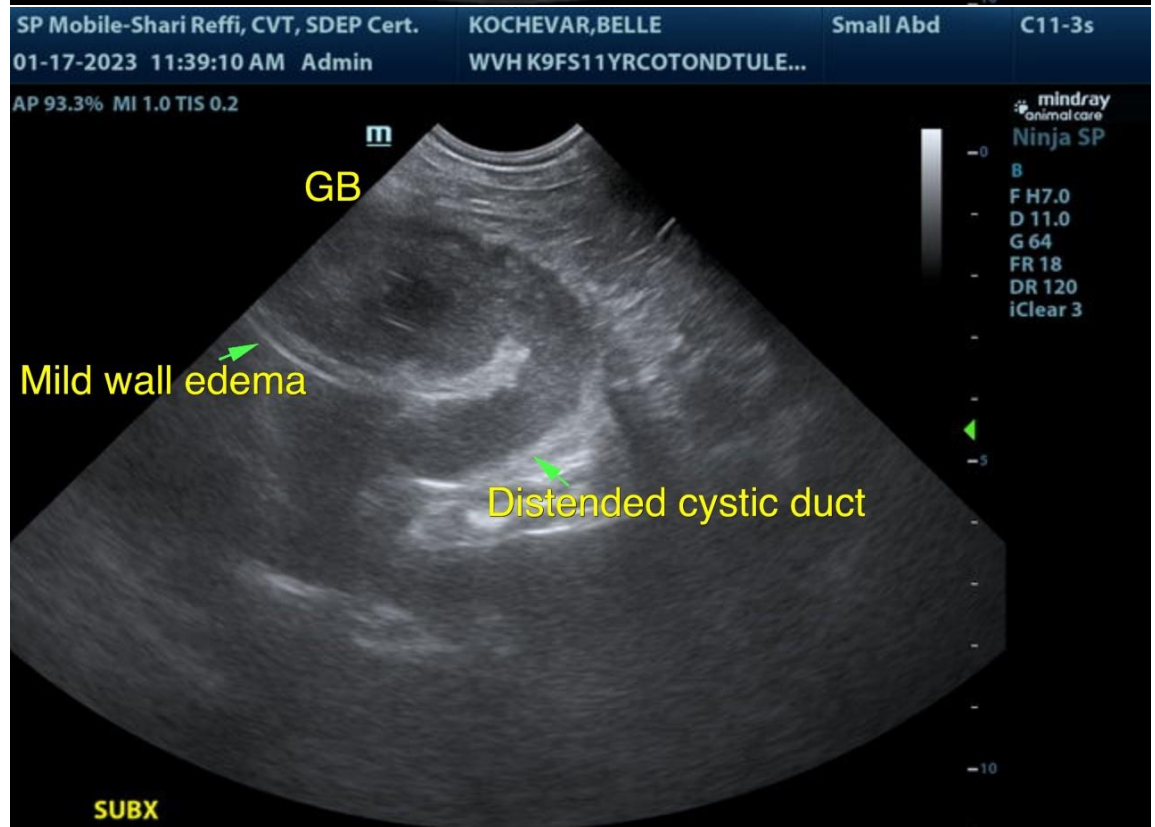
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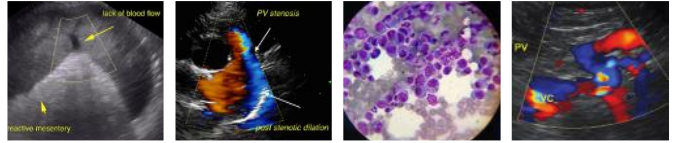
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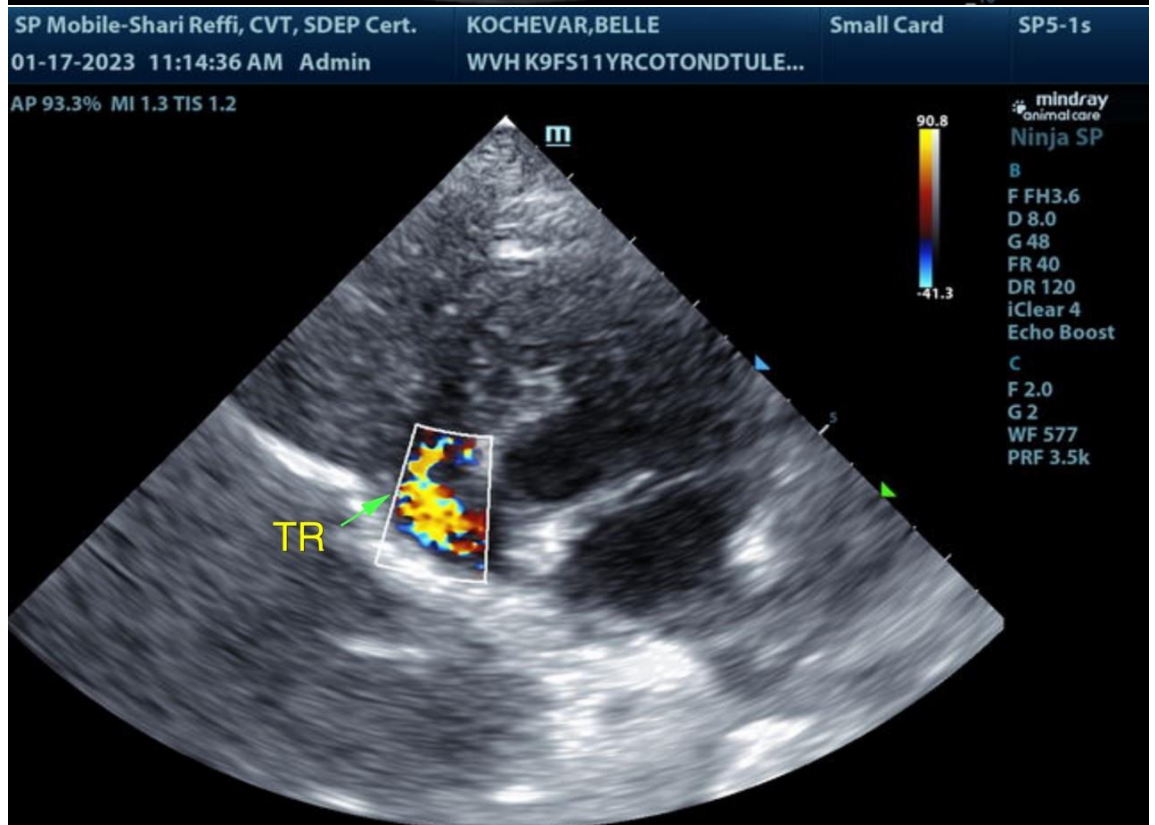
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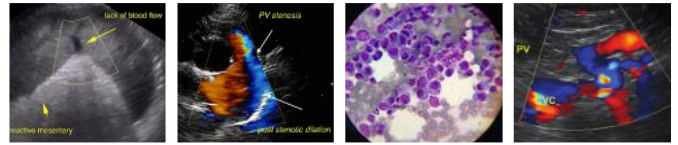
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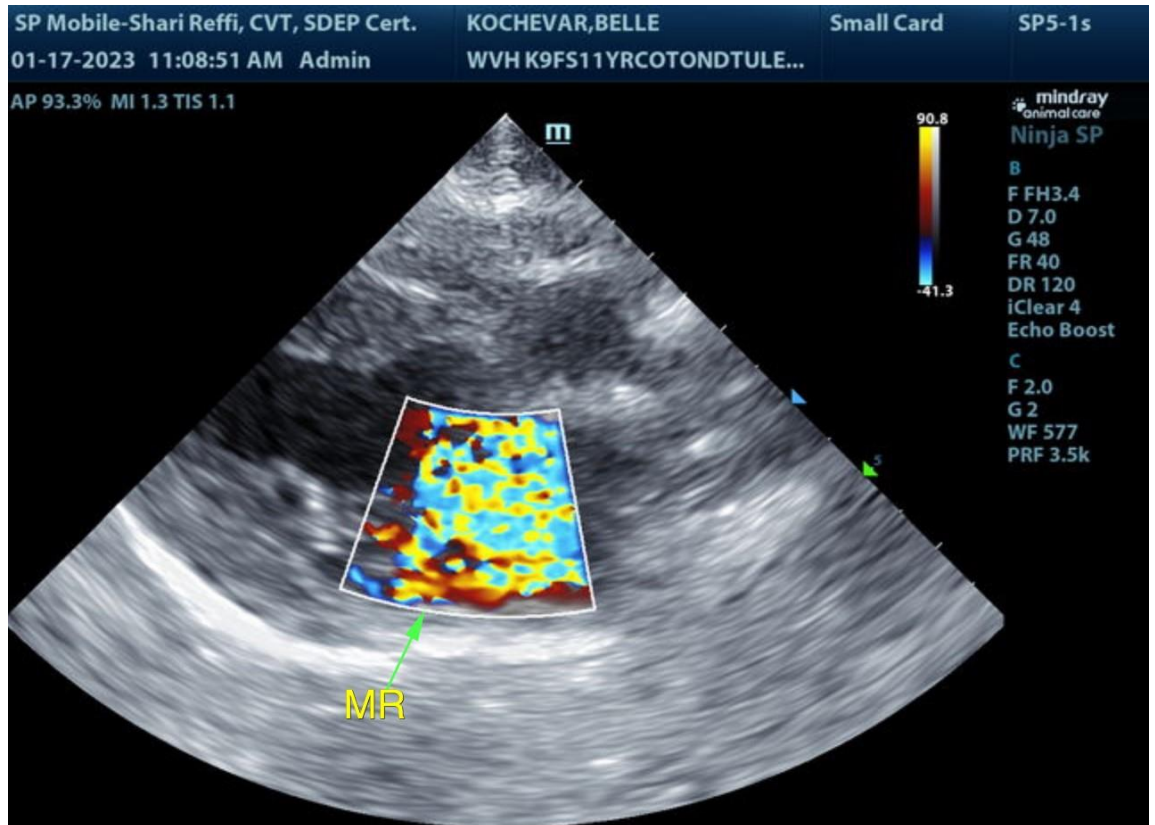
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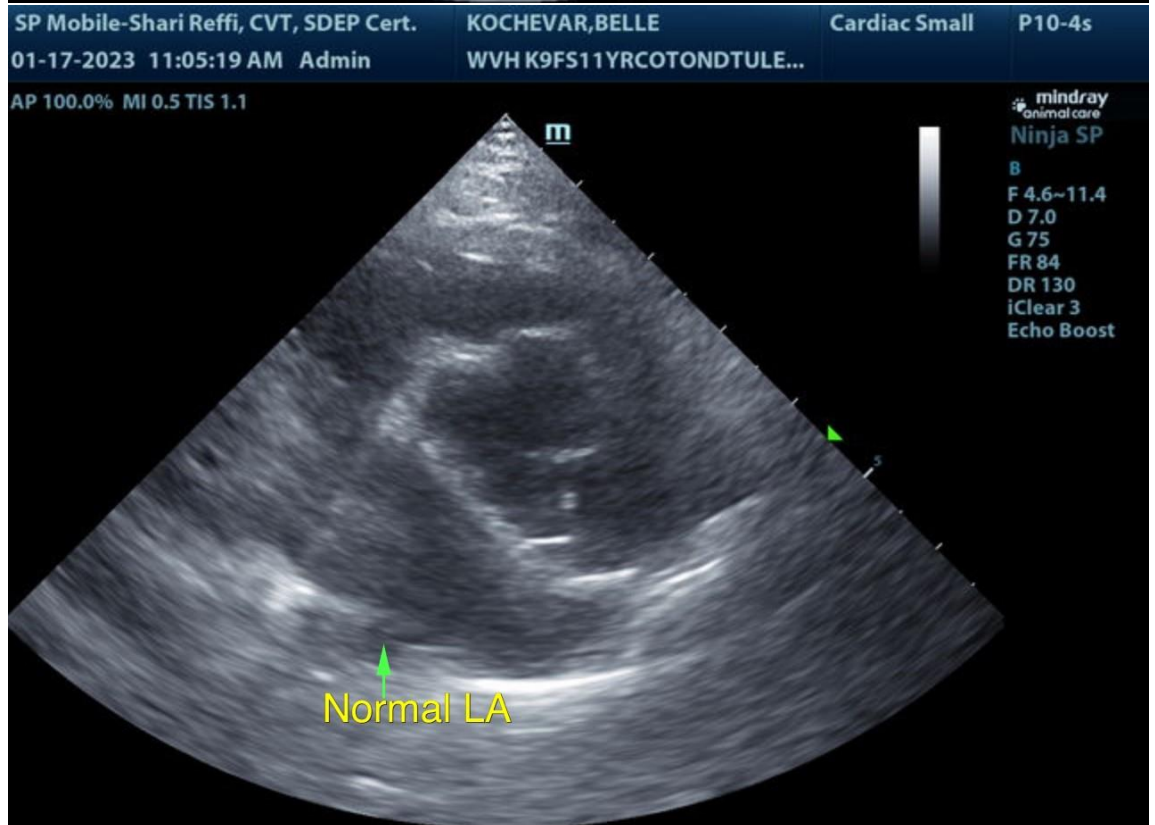
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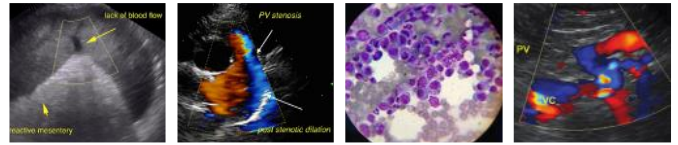
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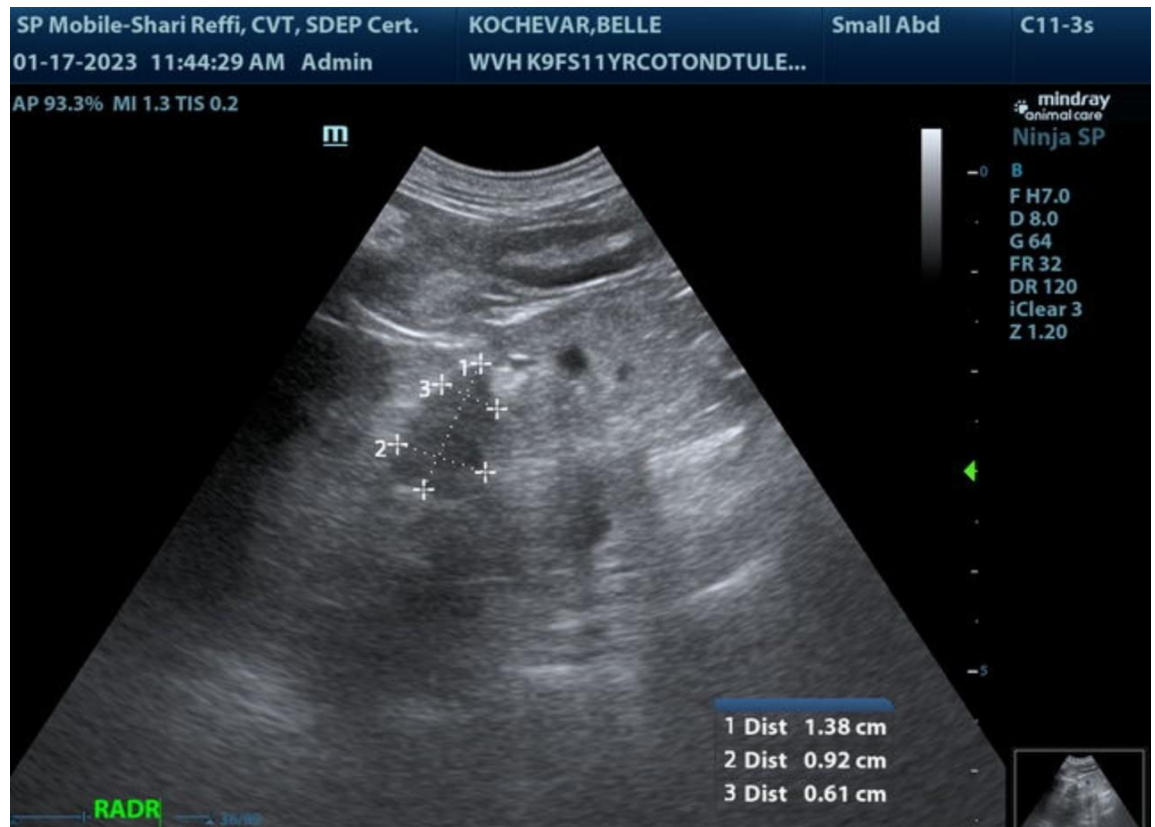
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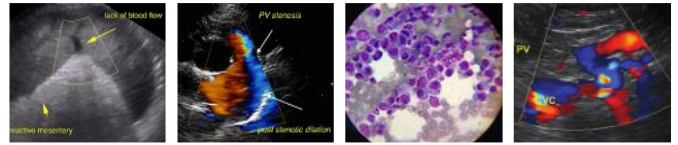
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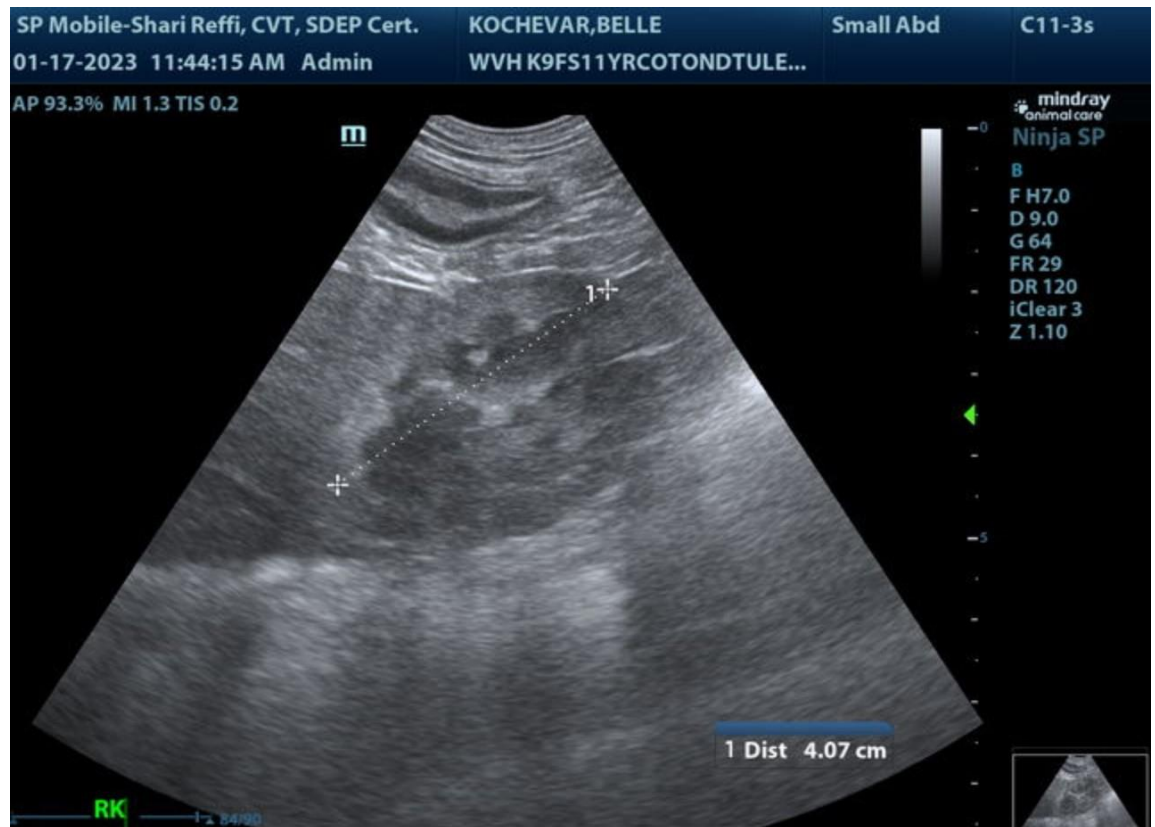
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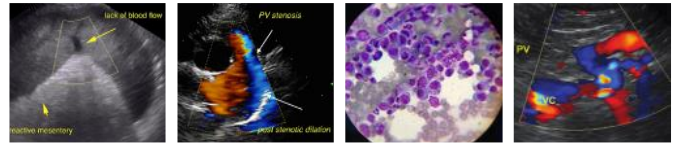
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The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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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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mac.daniel@sonopath.com

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