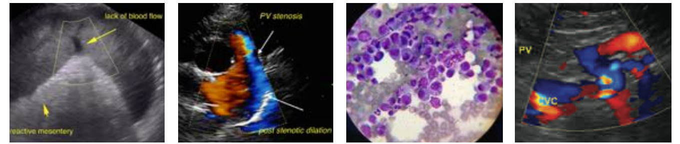
SonoPath
Clinical Sonography & Telecytology
EDUCATIONAL TELECONSULTATION SERVICES™



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

PATIENT
Bella Werley

SPECIES
Canine

BREED
Pug

SEX
Spayed Female

AGE
11 years

WEIGHT
20.5 lbs

INTERPRETED BY
Eric Lindquist, DMV DABVP, Cert. IVUSS

IMAGING PERFORMED BY
Shari Reffi, CVT

HOSPITAL NAME
Long Valley AH

REFERRING VET
Dr. Welch

INVOICE
31506

DATE
6/30/22

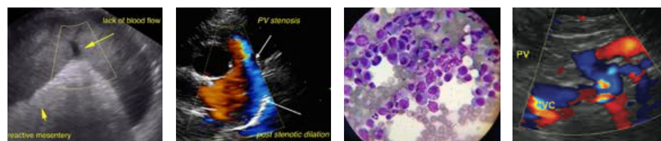
PRESENTING CLINICAL SIGNS

History: Coughing. Possible abdominal mass effect noted on radiographs. Hx: Diabetic. Possible emerging pneumonia. Possible low grade heart murmur. Current meds: Vetsulin, Convenia inj. U/S sedation-Torb administered iv. (Prev. SP report from prev. vet attached)
Abnormal PE/Chem/CBC/UA Results: BG 604, Bun 34, K+ 5.6, Cl 101, Na:K ratio 25, Ast 68, ALP 300, ALT 99, Chol 350, CK 232, Monos 1244, Baso 122. U/A pending

ULTRASONOGRAPHIC EXAMINATION OF THE HEART

The echocardiogram in this patient demonstrated normal **left atrial** size based on 3 separate methods of LA evaluation. The cranial and caudal **mitral** valve leaflets presented normal linear structure, extension in systole, and union in diastole with normal kinesis. 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. Trivial aortic insufficiency was noted at 5 m/sec. The **right atrium** and auricle revealed normal size, structure and content. No evidence of masses was noted. Trivial **tricuspid** insufficiency was noted yet not clinically significant. The **right ventricle** was of normal size (1/3 diameter of LV), chordae structure, myocardial echogenicity and thickness. Trivial **pulmonic** insufficiency was noted, yet not clinically significant. No visible **pericardial** or free pleura fluid was noted. The cranial **mediastinum and pericardial and extra-cardiac regions** were free of masses in the visible window.

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			1.38	1.32	34	65	0.2
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				
PATIENT	124	1.89		20.5 lbs	2.6	2.84	



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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.

The **kidneys** were normal in size and contour; however, a minor hyperechoic ring was noted at the corticomedullary junction. This is consistent with diabetic nephropathy. This is likely from glucosuria. However, assessment for proteinuria is also warranted. This is an idiopathic finding, but an expected finding in diabetic patients. The right kidney measured 5.34 cm. The left kidney measured 4.68 cm.

Adrenal Glands

The right **adrenal gland** was slightly heterogenous and measured 1.7 x 0.73 cm at the caudal pole and 0.42 cm at the cranial pole. The left adrenal gland was uniform and measured 1.29 x 0.41 cm at the cranial pole and 0.46 cm at the caudal pole.

Spleen

The **spleen** revealed focal, hypoechoic nodules that measured 0.37 x 0.63 cm at the mid body.

Liver

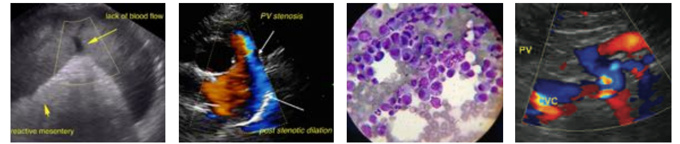
The **liver** was uniformly swollen with minor, excessive gallbladder debris and over distension with dependent and suspended bile without evidence of overt mucocele formation. However, excessive sludge was present. The liver presented coarse architecture with mildly increased portal markings and subtle, mixed echogenic changes. This is consistent with vacuolar hepatopathy and some level of remodeling and history of inflammatory component. There was no overt suspicion of neoplasia.

Gastrointestinal

A minor amount of non-shadowing, non-obstructive ingesta was noted in the **stomach**. Transit of chyme into the small intestine was normal. Curvilinear patterns were maintained throughout the GI tract. No evidence of pathology. 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

The **pancreas** was hypoechoic and irregular with undulating contour. The pancreas measured 1.67 cm.



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ULTRASONOGRAPHIC FINDINGS

Trivial pulmonic, tricuspid and aortic insufficiency, not clinically significant. Otherwise, normal echocardiogram with no progression from the prior sonogram.

Diabetic nephropathy.

Vacuolar hepatopathy.

Chronic active pancreatitis is likely playing a role.

Focal splenic nodule, likely benign.

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

Blood pressure measurements are indicated. FNA of the splenic nodule would be ideal, yet this is likely benign. There was no evidence of masses. However, irregular hepatomegaly was present with primarily pronounced caudate process.

Potential Causes of Diabetic Dysregulation

This is a suggestive checkoff list when faced with an unregulated diabetic patient:

UTI

Dietary indiscretion/intolerance

Pancreatitis

Hyperthyroidism/hypothyroidism

Exogenous steroids (including topical eye meds)

Cushing's

Acromegaly

Owner compliance

Insulin quality issues

Antibodies to insulin

Underlying Neoplasia

Diffuse liver disease

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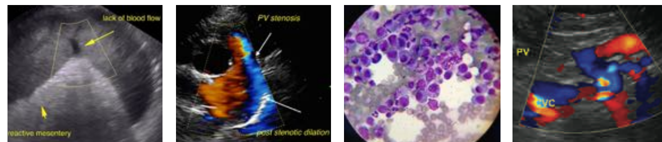

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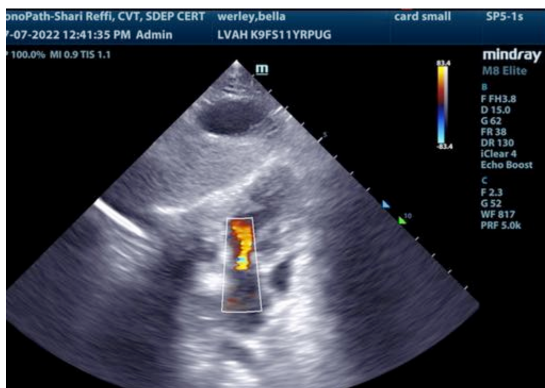

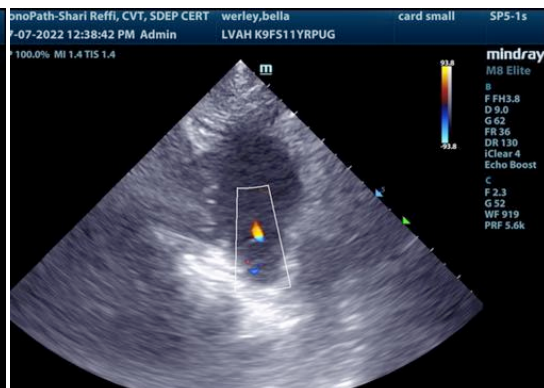

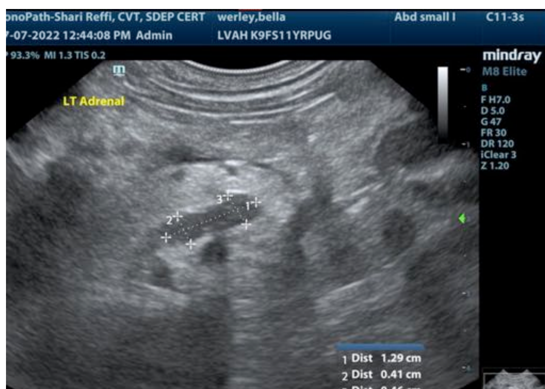

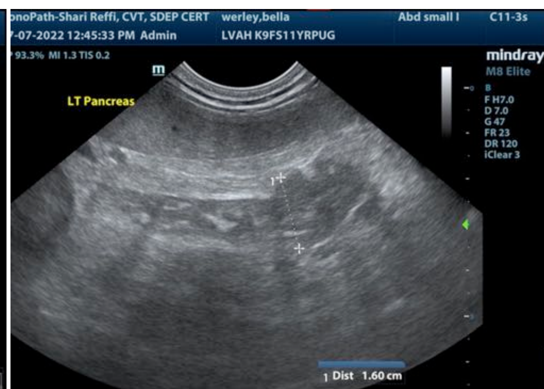

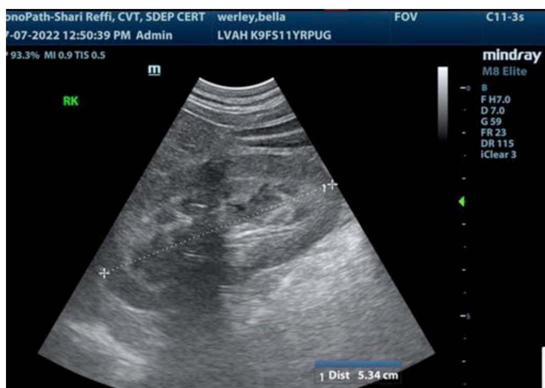

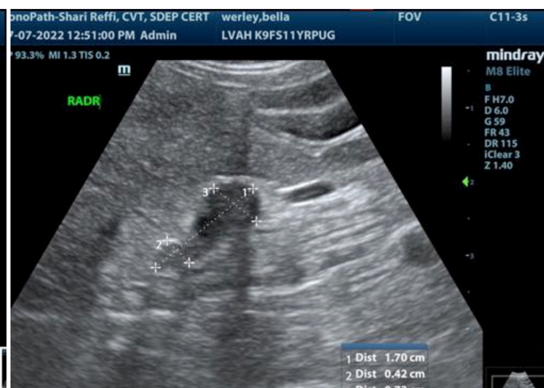

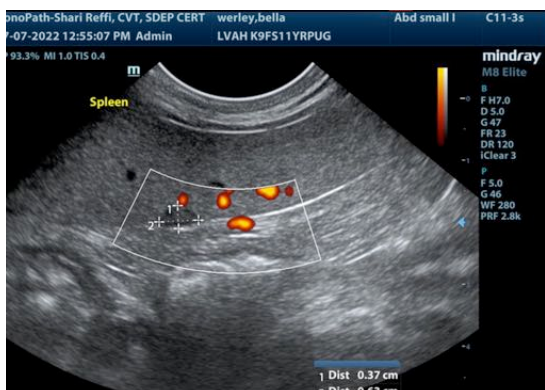

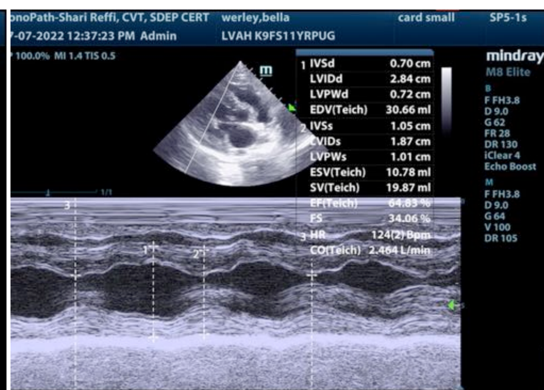

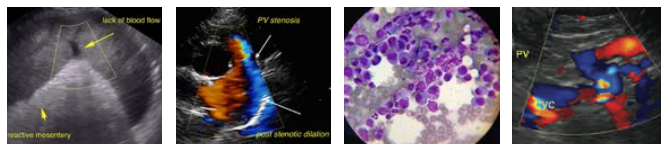

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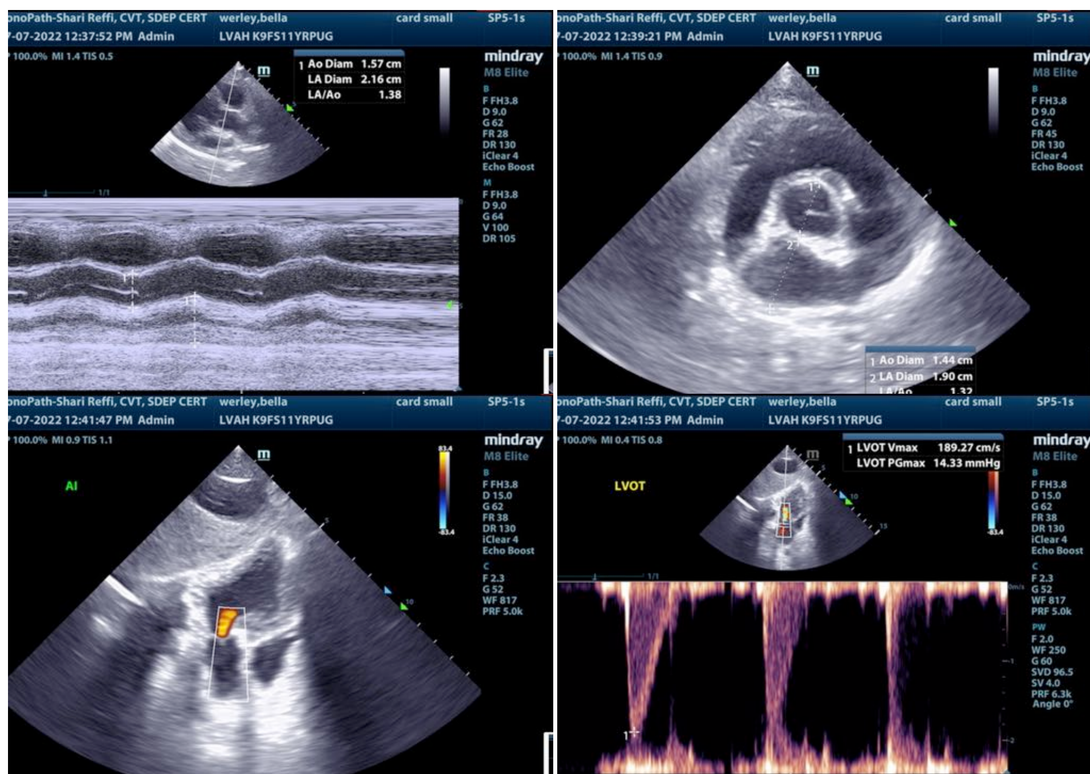

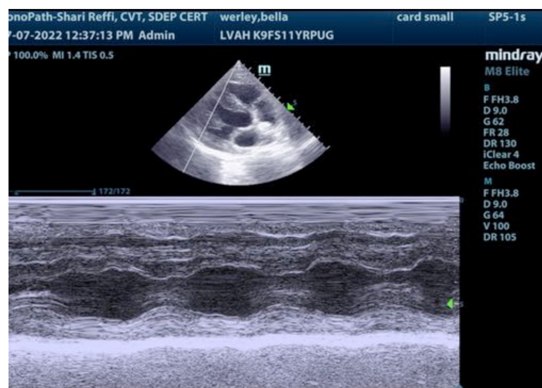

The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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