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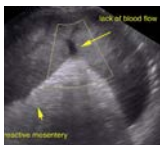
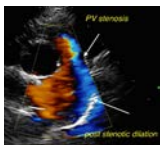
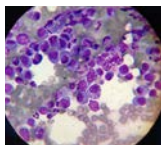
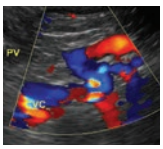

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**PATIENT**
Jasper Mullaney

**SPECIES**
Canine

**BREED**
Maltese X

**SEX**
Neutered Male

**AGE**
11 Years

**WEIGHT**
12.2 Pounds

**INTERPRETED BY**
Eric Lindquist, DMV DABVP, Cert. IVUSS

**IMAGING PERFORMED BY**
Jessica Miller

**HOSPITAL NAME**
Newton Vet Hospital

**REFERRING VET**
Dr. Chabora/Kim

**INVOICE**
33934

**DATE**
1/3/22

## PRESENTING CLINICAL SIGNS

DKA, Pancreatitis. Current meds: regulan insulin, ampicillin, cerenia
Abnormal PE/Chem/CBC/UA Results: WBC 18.64, neuts 15.51, ALP 815

## ULTRASONOGRAPHIC EXAMINATION OF THE HEART & ABDOMEN

| 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 | | | 1.3 | 1.5 | 72 | 97 | 0.12 |
| **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 | 120 | 1.5 | 1.26 | | 2.46 | 1.64 | |

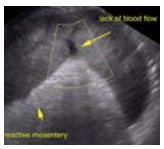
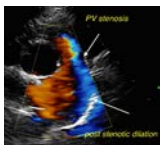
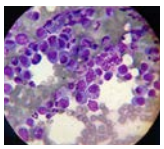
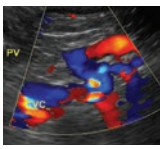
### *Cardiac Presentation*

The echocardiogram in this patient demonstrated normal **left atrial** size based on 3 separate methods of LA evaluation. Trivial mitral insufficiency noted, not clinically significant. 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. **Tricuspid** valvular assessment demonstrated adequate linear morphology and kinesis. The **right ventricle** was of normal size (1/3 diameter of LV), chordae structure, myocardial echogenicity and thickness. **Pulmonary outflow** 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. The cranial **mediastinum and pericardial and extra-cardiac regions** were free of masses in the visible window.

### *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 were noted. Ureteral papillae were normal. The pelvic urethra was imaged 2.0 cm beyond the cystourethral junction. The residual prostate measured 5.0 mm.

The **kidneys** revealed largely normal size and structure, corticomedullary definition and ratio (cortex 1/3 of medulla) were essentially maintained with some age-related loss of curvilinear patterns regarding the capsule and C/M junction. The cortices presented largely uniform texture with some increased echogenicity expected for his age patient. Medullary structure differed distinctly from that of the cortex

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and no evidence of pelvic dilation was present. The right kidney measured 5.31 cm. The left kidney measured 4.72 cm.

### *Adrenal Glands*

Both **adrenal glands** were visualized and recognized as having largely normal shape, size, position and acceptable echogenicity for this age group and breed. Some heterogeneity was noted within the adrenal parenchyma without concerning capsular distortion. These changes are likely age related but should be monitored by sonogram should the patient be suspected of having adrenal disease. The right adrenal gland measured 1.68 cm x 0.50 cm at the caudal pole and 0.80 cm at the cranial pole. The left adrenal gland measured 1.61 cm x 0.61 cm at the caudal pole and 0.53 cm at the cranial pole.

### *Spleen*

The **spleen** was normal size and relatively normal contour with multifocal hyperechoic areas of mineralization. Hypoechoic splenic nodules noted.

### *Liver*

The **liver** was mildly enlarged and revealed coarse architecture, increased portal markings, and a mild amount of remodeling. Hyperechioc lipogranulomatous changes noted. The region of the gallbladder fossa was unremarkable. No complications from underlying surgery. The common bile duct was upper limits of normal in width at 0.45 cm.

### *Gastrointestinal*

The **stomach** itself was unremarkable. Minor duodenal spasming noted.

### *Pancreas*

The **pancreas** presented coarse architecture and heterogeneous parenchymal changes, consistent with remodeling and low-grade inflammation.

## ULTRASONOGRAPHIC FINDINGS

- Largely normal echocardiogram with trivial mitral insufficiency, not clinically significant
- Chronic active pancreatitis pattern
- Stable liver/reactive hepatopathy
- Prominent common bile duct, potential emerging post-hepatic obstruction if bilirubin values are elevated.
- Moderate degenerative renal changes
- Slightly swollen adrenal glands
- Splenic mineralization and hypoechoic nodules – nodular hyperplasia versus emerging round cell neoplasia or abscessation possible.

## INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

No evidence of clinical cardiac disease. If the patient appears Cushingoid and USG is <1.020, workup for PDH would be indicated. FNA of the spleen indicated for further definition. FNA of the liver would be ideal to update the underlying cytology.

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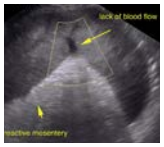
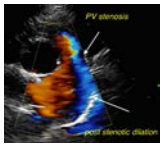
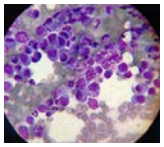
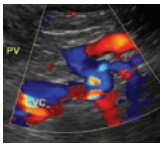

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## Potential Causes of Diabetic Dysregulation

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

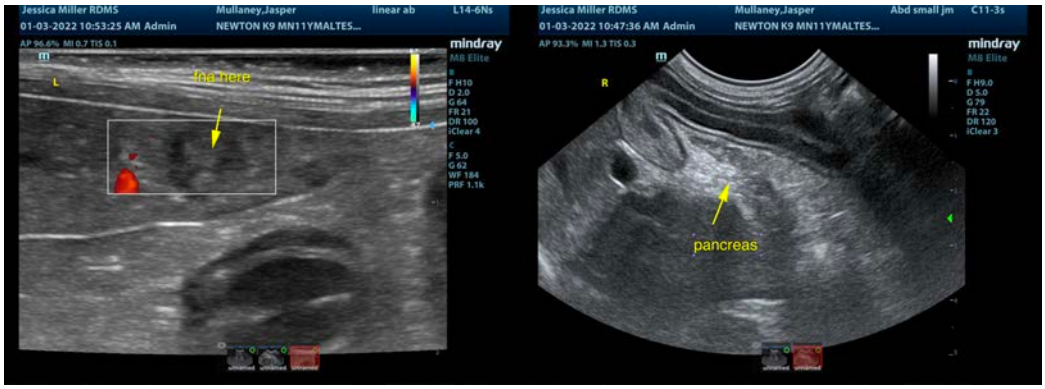
Owner compliance

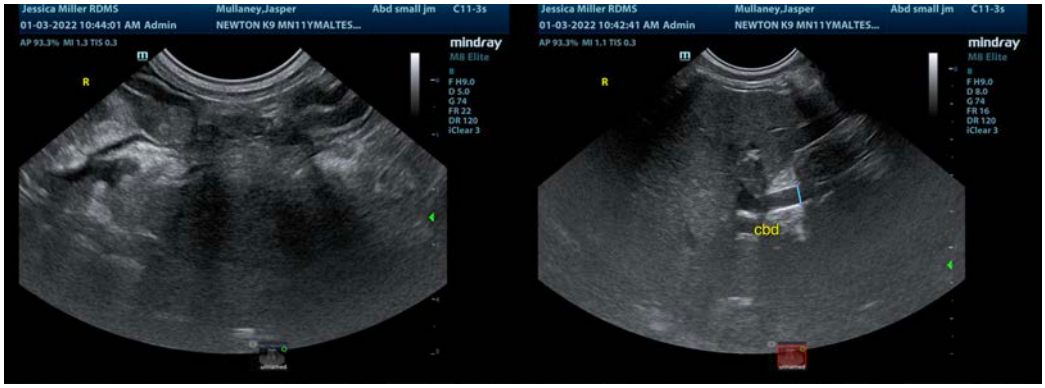
Insulin quality issues

Antibodies to insulin

Underlying Neoplasia

Diffuse liver disease



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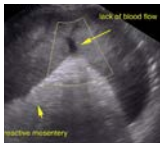
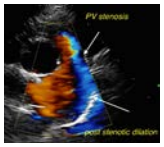
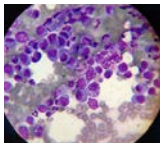
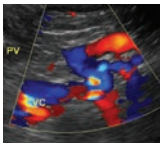

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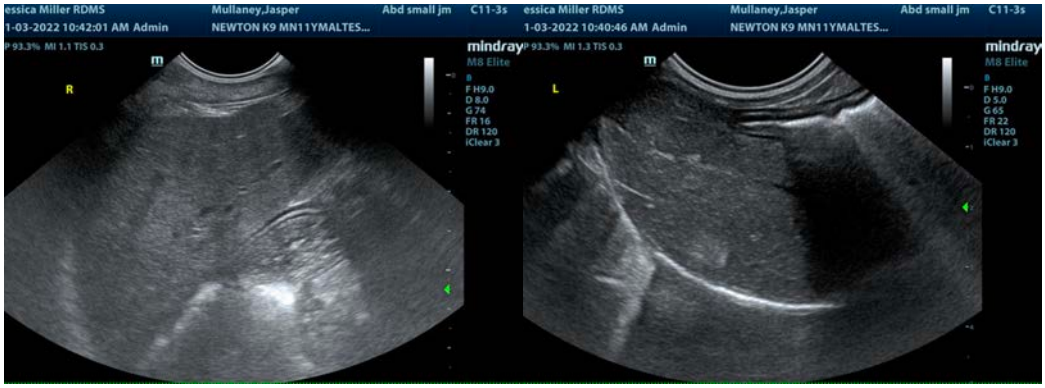



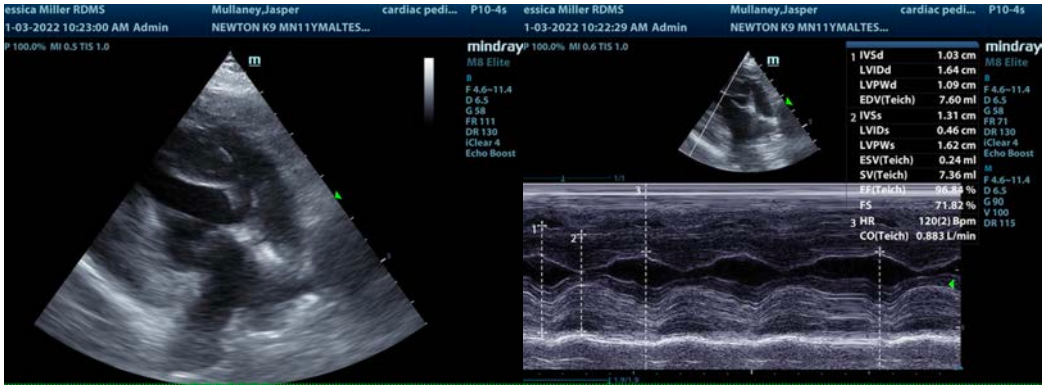


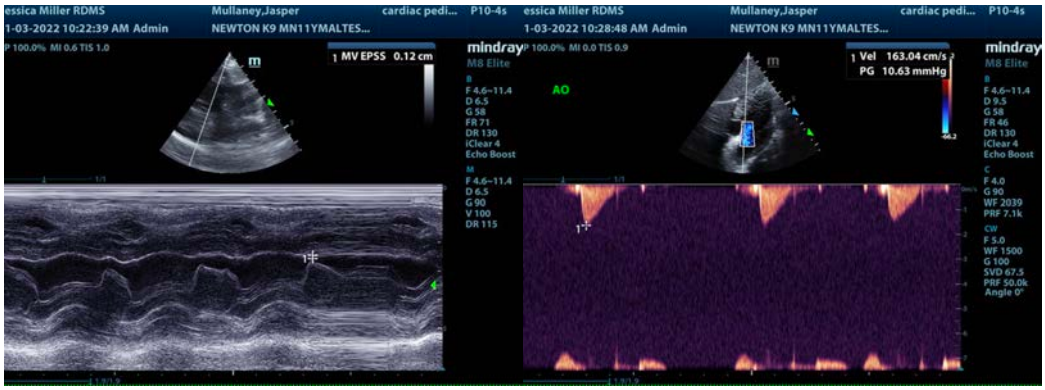

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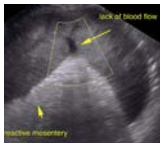
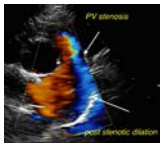
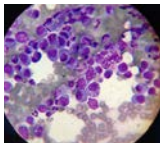
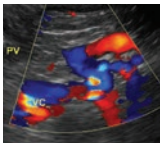

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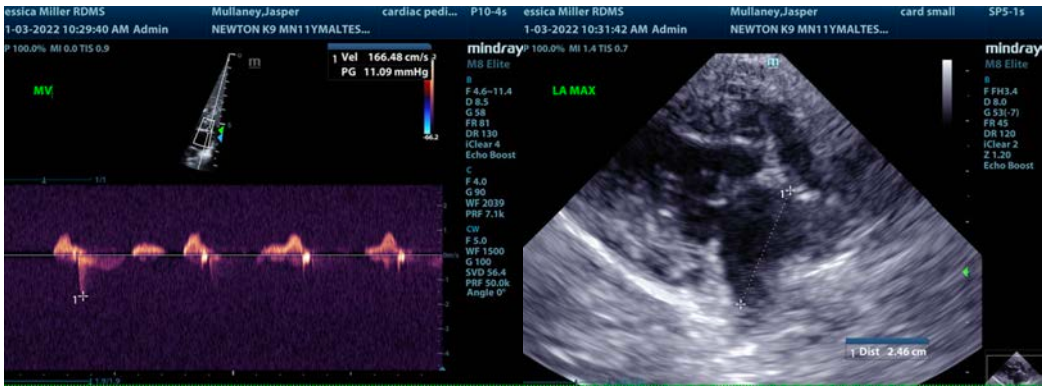


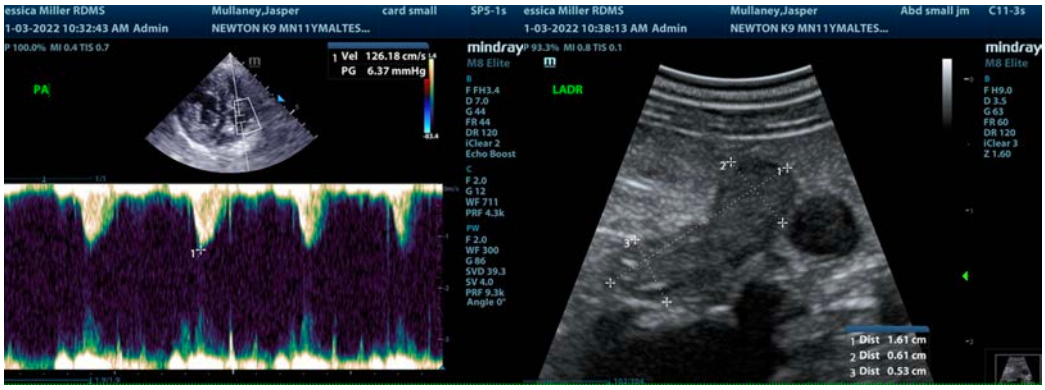


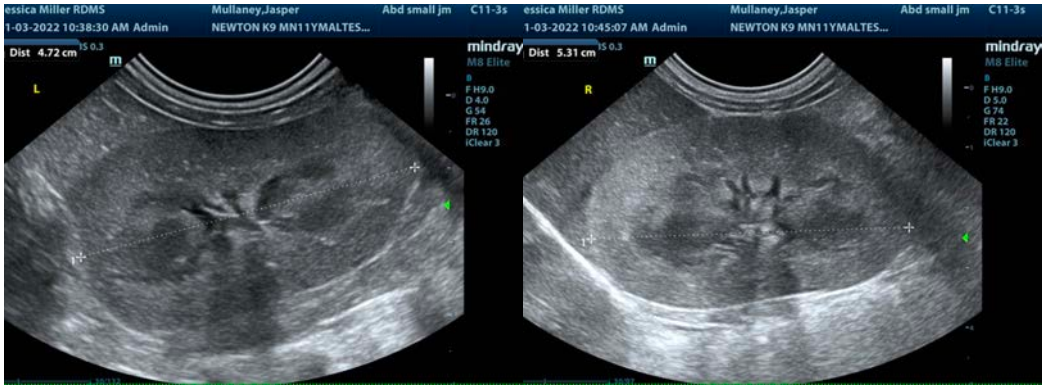


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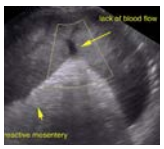
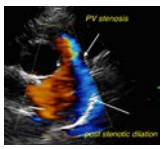
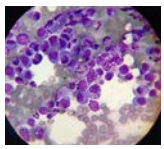
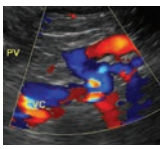

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**The information and recommendations provided are based on the images presented by the referring veterinarian. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.**

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