



**PATIENT PRESENTING CLINICAL SIGNS**

Reynard Wadleigh

History: Diagnosed as diabetic in 2020. Was doing well until end of 2022 when control was lost. Switched to ProZinc from Glargine in early 2023, and control remains not great. Appetite is big and is losing weight.

**SPECIES**

Feline

Abnormal PE/Chem/CBC/UA Results: PE: BCS 1-2/9 with muscle wasting, potbelly, thin truncal haircoat and thin skin. 3/25/23: fPL: 50 (0-3.5), Glucose: 225, Globulin: 7.8 (3-5.9), Urine glucose: 3+, prpBNP: 203. Last curve 3/20/23: 3/18/23 6AM 228 6:10 AM 3.5U ProZinc insulin 8AM 421 (anomaly?) 11AM 149 2PM 305 4:30 PM 510 6PM 3.5U insulin 8:45 PM 300

**BREED**

Domestic Shorthair

**ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN**

**Urinary System**

**SEX**

Neutered male

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.

**AGE**

12 years

**WEIGHT**

9.5 lbs

The **kidneys** presented a relatively uniform cortical hyperechogenicity when compared to the renal medulla, spleen and liver. No overt masses were noted. There was some loss of the of the corticomedullary definition. The ureters were not visible and assumed to be normal. These changes are most consistent with chronic interstitial nephritis yet infiltrative disease could not be entirely ruled out without biopsy though neoplasia is not suspected. Slight pyelectasia was noted. The right kidney measured 5.16 cm. The left kidney measured 4.68 cm. Subnormal blood flow was noted in both kidneys on Power Doppler assessment.

**INTERPRETED BY**

Eric Lindquist, DMV  
DABVP, Cert. IVUSS

**Adrenal Glands**

**IMAGING PERFORMED BY**

Karen Ebersole

The adrenal glands were approached from the left and right approach. The largest adrenal gland measured 1.47 x 1.15 cm and appears to be the right adrenal gland. A hypoechoic, rounded structure in the region of the left adrenal gland was also noted and measured 1.25 cm with an elongated structure at the level of the left renal artery measuring 0.46 cm. It is difficult to ascertain whether the left adrenal gland was imaged from the right side as well as the left side. However, this is most consistent with bilateral adrenal hypertrophy.

**HOSPITAL NAME**

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**Spleen**

**REFERRING VET**

Dr. Fortin

The **spleen** revealed multi-focal, hyperechoic, lipogranulomatous type nodules. This is not surprising for a diabetic patient.

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**Liver**

**DATE**

3/29/23

The **liver** was mildly enlarged, yet uniform. The echotexture was mildly coarse. The gallbladder presented acceptably thin walls with primarily anechoic content. The cystic and common bile ducts were normal. No pathological hepatic lymphadenopathy was evident.



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**Gastrointestinal**

There was some residual chyme and gas was noted in the **stomach**, yet not pathological. This is consistent with end post prandial presentation. There is a potential for hairball accumulation. Transit of chyme into the small intestine was normal. The pylorus was free of evident pathology. 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. Lymph nodes were enlarged with a reactive pattern measuring up to 1.0 x 0.5 cm.

**Pancreas**

There is a separate issue in the area of the **pancreas** that revealed undifferentiated, proliferative nodular tissue with maximum width of 1.3 cm and extended for approximately 4.0 cm. This appears to be deriving from the pancreas and may represent pancreatic adenoma or possible carcinoma. FNA is indicated.

**ULTRASONOGRAPHIC FINDINGS**

Adrenal enlargement. Suspect bilateral adrenal hypertrophy, consistent with Cushing's. However, unilateral adrenal enlargement with imaging from both the left and right side is possible.

Nodular changes in the region of the pancreas.

Diabetic hepatopathy.

Nephropathy with interstitial nephrosis and myelolipomatous spleen.

**INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS**

CT evaluation with contrast is recommended. I recommend blood pressure measurements in this patient. If sodium potassium ratio is abnormal then aldosterone levels would be indicated. CT evaluation is recommended to assess the nodular changes in the area of the pancreas as well as the status of the adrenal glands and the structure adjacent to the left renal artery. This may be lymph node. Other smaller lymph nodes were also enlarged, yet had a reactive pattern in the mesenteric root. Coagulation panel with 25-gauge ultrasound-guided FNA of the nodular changes in the pancreas would be indicated to assess for adenoma versus carcinoma. This is presumed to be deriving from the pancreas. There appear to be two separate issues the adrenal glands and nodular changes in the region of the pancreas. The remainder of the organ changes would be consistent with secondary effector organs owing to the diabetic state.

**Potential Causes of Diabetic Dysregulation**

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

UTI



**PATIENT** Dietary indiscretion/intolerance  
Reynard Wadleigh Pancreatitis  
Hyperthyroidism/hypothyroidism

**SPECIES** Exogenous steroids (including topical eye meds)  
Feline Cushing's

**BREED** Acromegaly  
Domestic Shorthair Owner compliance  
Insulin quality issues

**SEX** Antibodies to insulin  
Neutered male Underlying Neoplasia  
Diffuse liver disease

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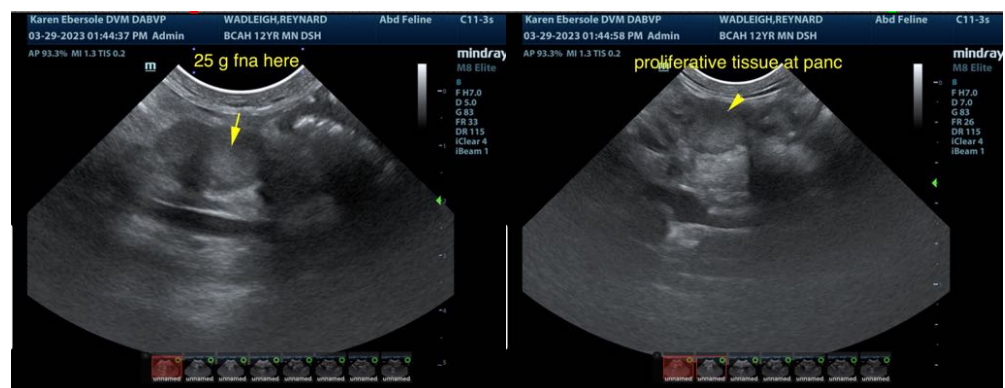
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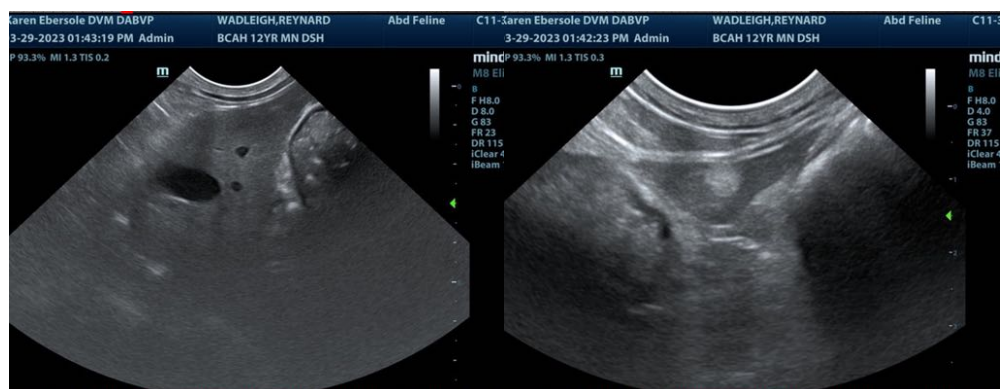
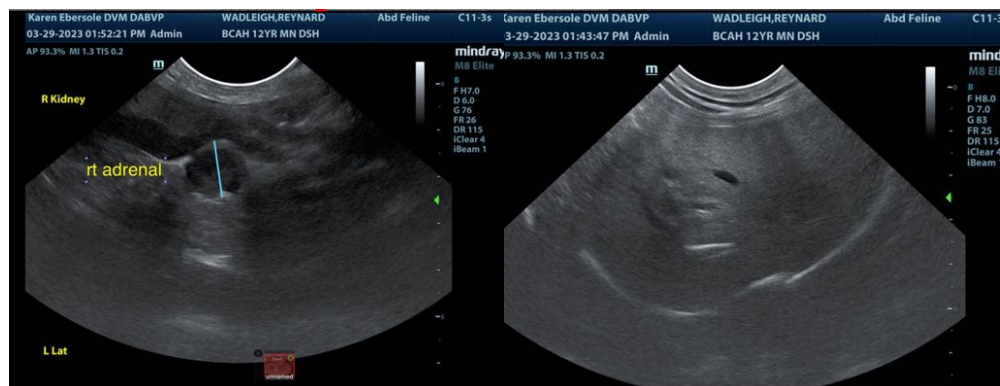
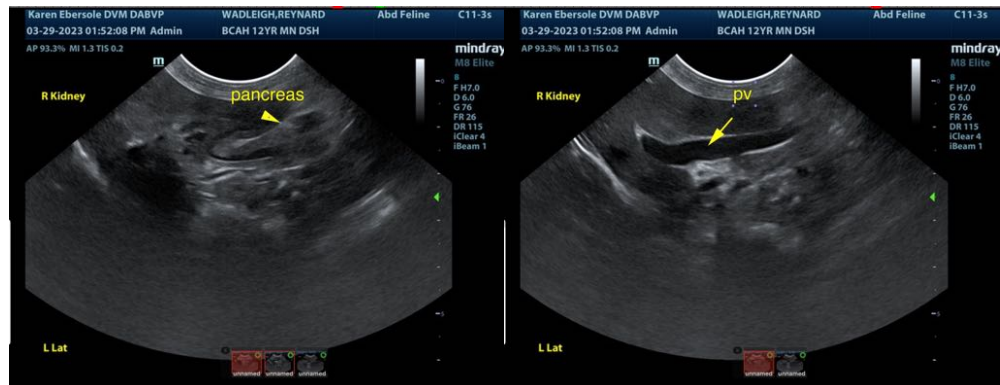
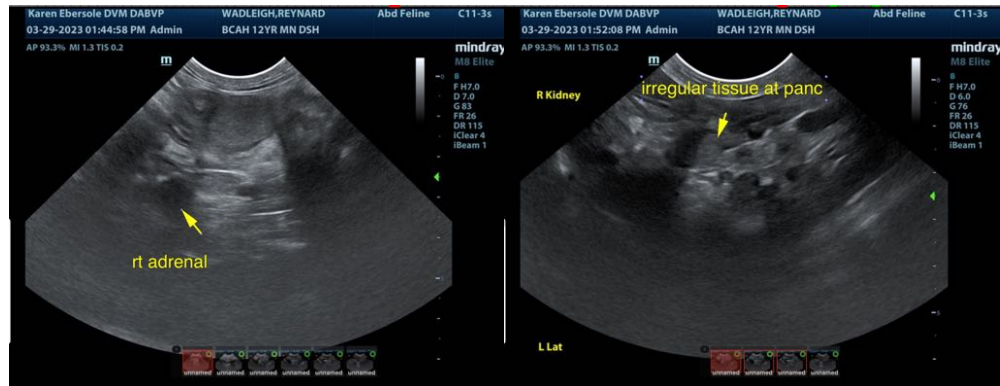
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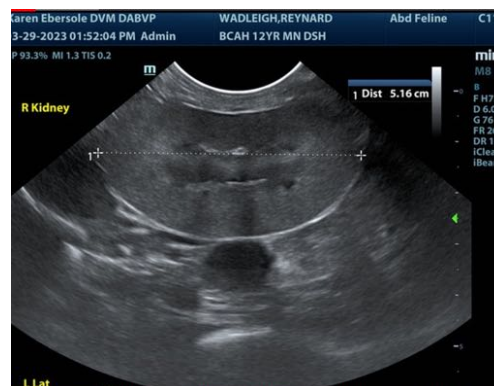
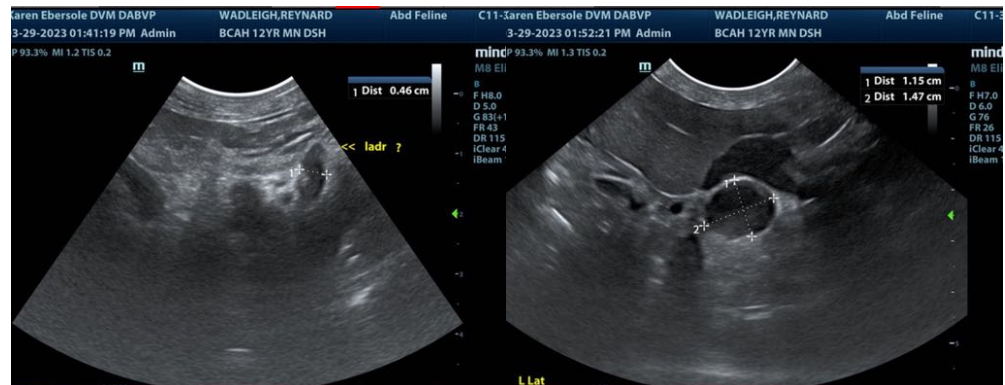
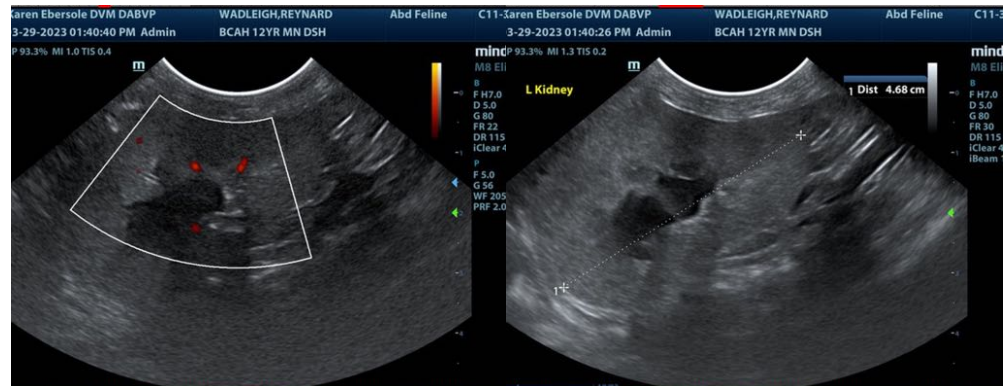
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The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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  
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