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Clinical Sonography & Telecytology

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**DATE**

3/8/22

**PATIENT**

Teddy Glenn

**SPECIES**

Canine

**BREED**

Havanese

**SEX**

Spayed Female

**AGE**

2009

**WEIGHT**

11.9 Pounds

**INTERPRETED BY**

Eric Lindquist, DMV  
DABVP, Cert. IVUSS

**IMAGING PERFORMED BY**

Rachel Brilhart RDMS

**HOSPITAL NAME**

Animal Emergency  
Hospital

**REFERRING VET**

Dr. Ruby

**INVOICE**

35982

**PRESENTING CLINICAL SIGNS**

Presenting Complaint: Diabetic Keto Acidosis (DKA). Vomiting. Not Eating. Can't Keep Water Down.

History: Date: 03-05-2022 Notes: Recently diagnosed with Diabetes. BW on Thursday and started insulin on Friday. She only ate once and got her insulin once. Started on NPH @ 4units. Persistent thirst and vomiting, not interested in eating.

Assessment: Diabetic. DKA.

Current Medications: ondanestron, maropitant, metocloperamide, protonix, ampicillin, CRI of regular insulin, potassium supplementation (both in bag and orally), dex ophthalmic drops for the eyes.

Lab Results: BUN 47, Bili 1.3, subnormal potassium, ALT 167, ALP 299, Crea 2.2, BUN 107, USG 1.018.

Date of Previous IntraPet Ultrasound: No previous.

Sedation: Not required to complete full diagnostic ultrasound.

Stat Report: Not requested.

**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 were 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 left kidney measured 4.78 cm with pyelectasia 0.38 cm. The right kidney measured 5.44 cm.

**Adrenal Glands**

The **adrenal glands** appeared slightly enlarged and swollen. No evidence of focal capsular expansion or invasion into the phrenic veins were noted. No overt suspicion of neoplasia was noted. This is considered likely a hyperplastic change associated with stress or adrenal endocrinopathy (PDH). If isosthenuria is persistently present and the patient morphologically suggests Cushing's disease then ACTH testing would be indicated. The left adrenal gland measured 2.19 c x 0.91 cm at the cranial pole and 0.76 cm at the caudal pole. The right adrenal gland measured 1.77 cm x 0.78 cm at the cranial pole and 0.84 cm at the caudal pole.

**Spleen**

The **spleen** presented a smooth homogeneous parenchyma hyperechoic to liver and renal cortical parenchyma. The capsule was smooth without noticeable expansion or deviation from within the spleen or adjacent pathology. The splenic vasculature demonstrated normal volume without signs of congestion or thrombosis. No sonographic evidence of acute or chronic inflammatory, neoplastic, or infarctual changes were noted.

**Liver**

The **liver** was diffusely hyperechoic to falciform fat. The **gallbladder** was significantly over distended with suspended and dependent debris, consistent with emerging gallbladder mucocele. Some striating bile present.

### ***Gastrointestinal***

Examination of the **gastrointestinal tract** revealed a stomach and intestine free of stasis, of normal wall thickness, acceptable curvilinear mural detail, and peristaltic activity. 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, irregular and edematous with enhanced surrounding mesentery, suggestive for inflammation. The left and right limbs appeared to be involved.

### **ULTRASONOGRAPHIC FINDINGS**

- Diabetic nephropathy
- Diabetic hepatopathy with emerging mucocele
- Chronic active pancreatitis pattern
- Bilateral adrenal hypertrophy – suspect PDH.

### **INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS**

Ursodiol warranted, treatment for pancreatitis, IV fluid support, broad-spectrum antibiotics, and pain management. Urine culture and sensitivity warranted, given the renal pyelectasia. Multiple factors may be playing a role in the diabetic state in this patient. Potential UTI, potential emerging hepatic dysfunction, and probable pituitary dependent hyperadrenocorticism.

For an additional charge, internal medicine consult can be utilized through Sonopath.com. You can select the internal medicine drop down at <http://spa.sonopath.com/>.

One of the world's top internists & SonoPath associate Dr. Remo Lobetti BVSc, MMedVet, PhD, DECVIM can evaluate your case through SonoPath. <https://sonopath.com/resources/sonopath-services/internal-medicine-teleconsultation-services>

### **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

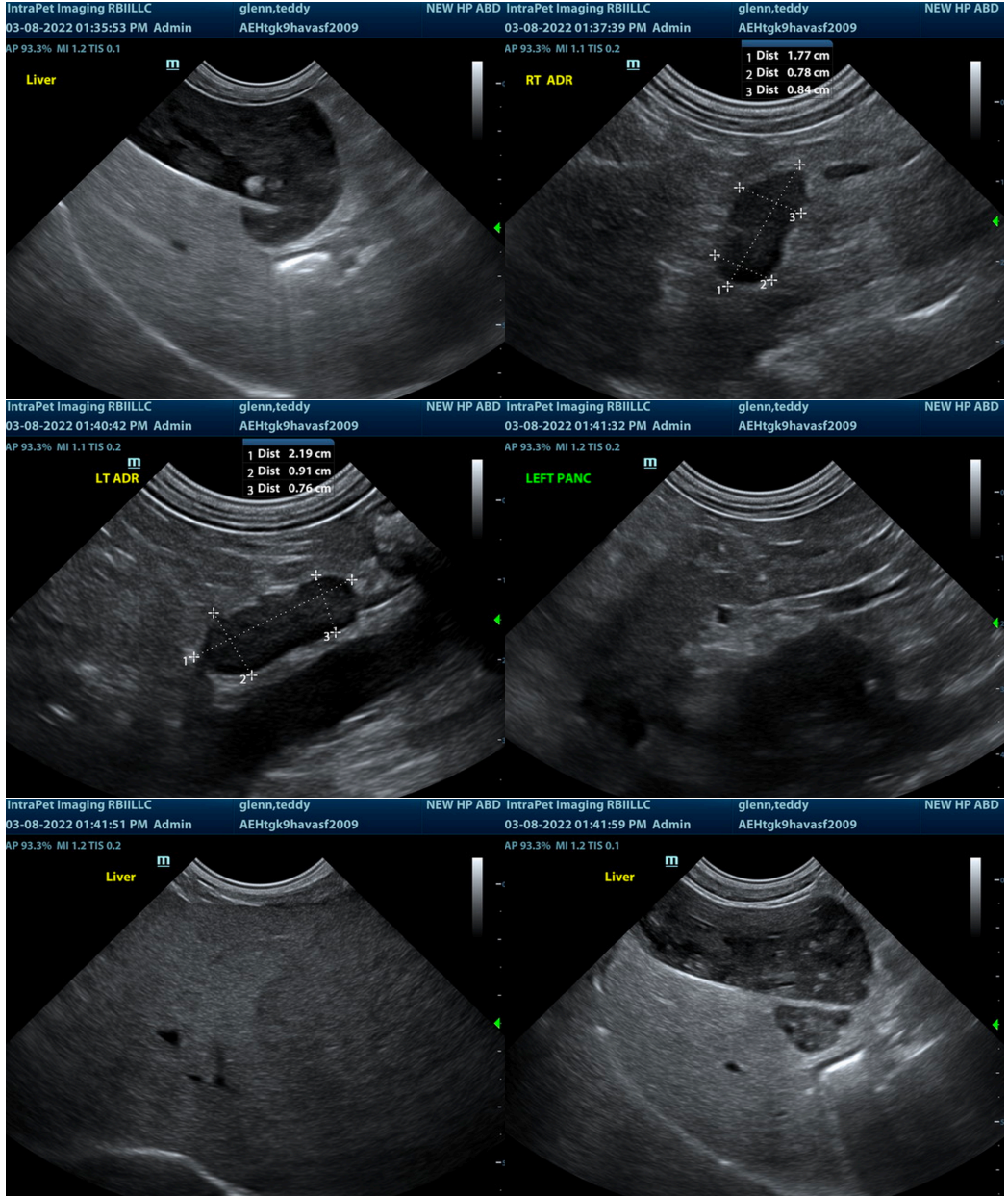
Owner compliance

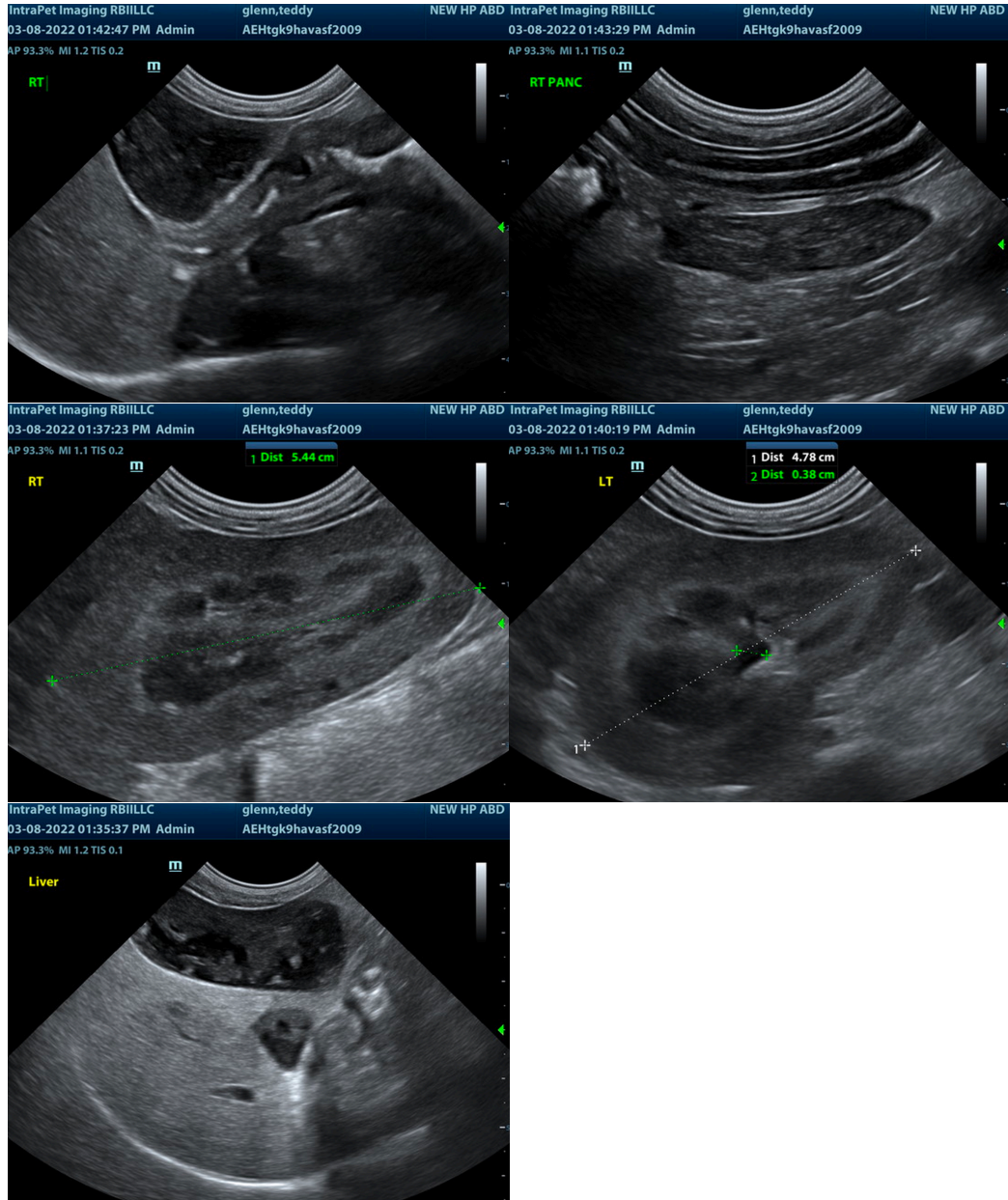
Insulin quality issues

Antibodies to insulin

Underlying Neoplasia

Diffuse liver disease





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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