

**DATE**

1/14/22

PRESENTING CLINICAL SIGNS**PATIENT**

Milo Neubauer

SPECIES

Canine

BREED

Shih Tzu

SEX

Neutered Male

AGE

1/12/22

WEIGHT

11.9 Lbs.

INTERPRETED BYEric Lindquist, DMV
DABVP, Cert. IVUSS**HOSPITAL NAME**

Animal Emergency H

REFERRING VET

Dr. King

INVOICE

13435

History: Presenting Complaint: Lethargic; Vomiting. Date: 01-12-2022 Notes: New Diabetic In September. Was DKA at Pet ER He did well and went home. Is on 3 units of NPH insulin BID, around 10/10. Hx of dry eye -- on cyclosporin, 2 drops OU BID- owner was concerned about weight loss, saw RDVM last Wed. Some ketones in urine, but had UTI, on antibiotics, owner unsure of which one. Has not been eating the SD diabetic diet well, mixing in pedigree diet Lethargy, vomited twice yesterday and once today. Cannot give his oral meds. Assessment: Discussed DKA, unfortunately similar as last time- worried with wt loss and that he is not regulating well that he could have underlying issues complicating such as pancreatitis, pyelonephritis, cancer, Cushing's, other. He is currently very sick and debilitated, need to start IVF, insulin CRI, get lab work, xrays, would low colony count the urine and get US.

Current Medications: Humulin N, Buprenex, Amoxicillin, Cyclosporine, Omeprazole, Cerenia, Unasyn, Potassium Chloride, Pantoprazole.

Lab Results: Attached separately.

Radiographs: liver slightly rounded, appears to have soft stool in colon no obvious mass/fb. Attached separately.

Date of Previous IntraPet Ultrasound: No previous IntraPet scans.

Sedation: Not required to complete full diagnostic ultrasound.

Stat Report: Not requested.

Imaging Performed By: Rachel Brillhart, RDMS.

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. Slight mineralization noted in both kidneys. An anechoic cyst (0.82 cm) was noted in the left kidney. The left kidney measured 4.31 cm. Slight pyelectasia (0.3 cm) was noted in the right kidney. The right kidney measured 4.31 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 mild 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 1.9 cm x 0.75 cm at the caudal pole and 0.7 cm at the cranial pole. The right adrenal gland measured 1.76 cm x 0.8 cm at the caudal pole and 0.8 cm at the cranial pole.

Spleen

The **spleen** was largely smooth with subtle heterogeneous parenchymal changes while maintaining normal echogenic relationship to the liver and kidney. These changes are consistent with normal mild age-related alteration. The capsule was smooth without noticeable impingement from within the spleen or from pathology in the adjacent abdomen. The splenic vasculature demonstrated normal volume without signs of congestion or significant contraction. No evidence of active acute or chronic inflammatory, neoplastic, or infarctual changes were noted.

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

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** revealed extensive mixed hypoechoic parenchymal changes with enhanced surrounding mesentery. In addition to active evidence of inflammation, chronic remodeling, irregular contour and patchy mixed echogenic coarse parenchyma was noted.

ULTRASONOGRAPHIC FINDINGS

- Chronic active pancreatitis
- Bilateral adrenal hypertrophy, suspect emerging cushings/PDH
- Diabetic nephropathy with slight mineralization and occasional cortical cysts

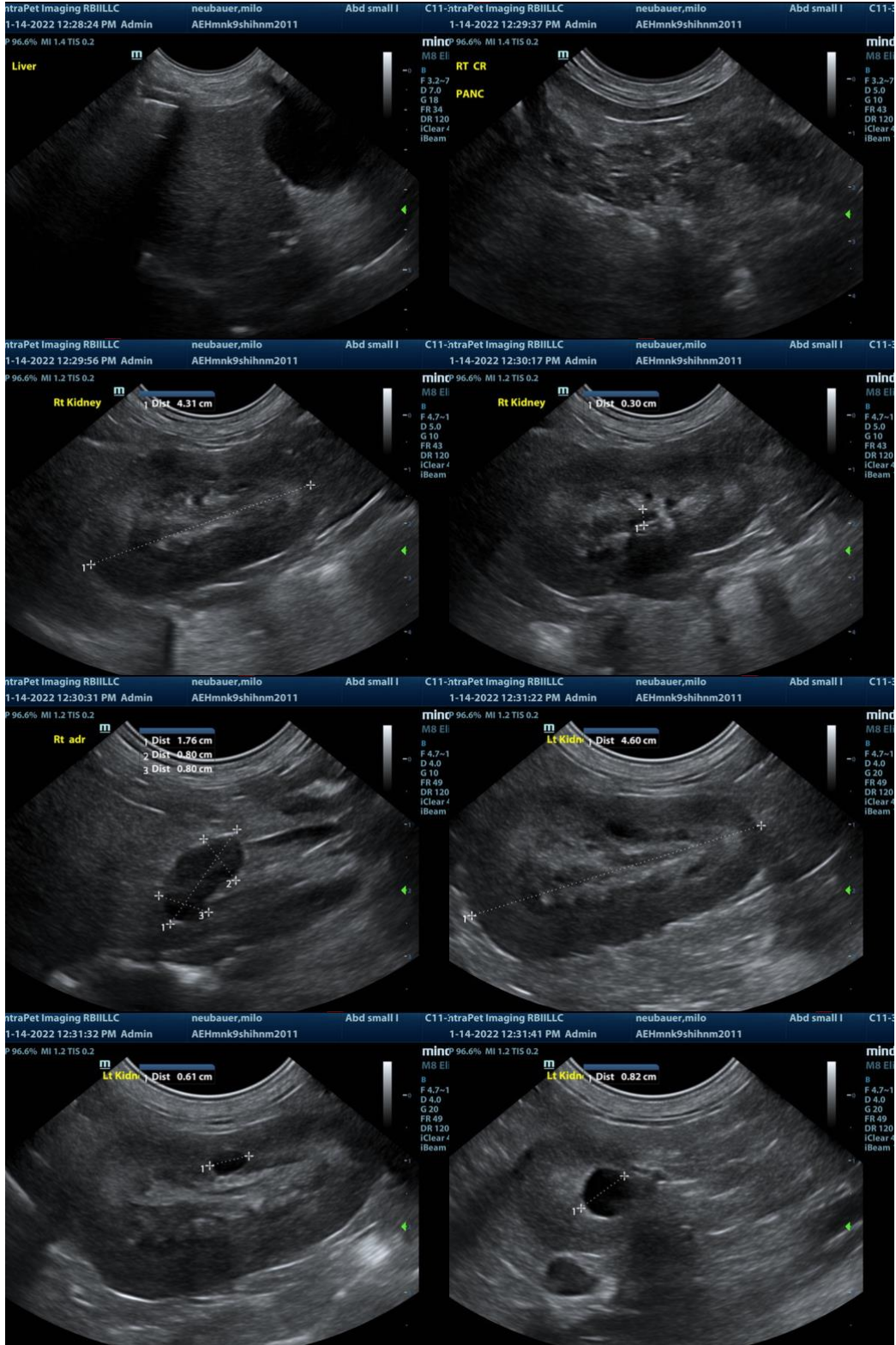
INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

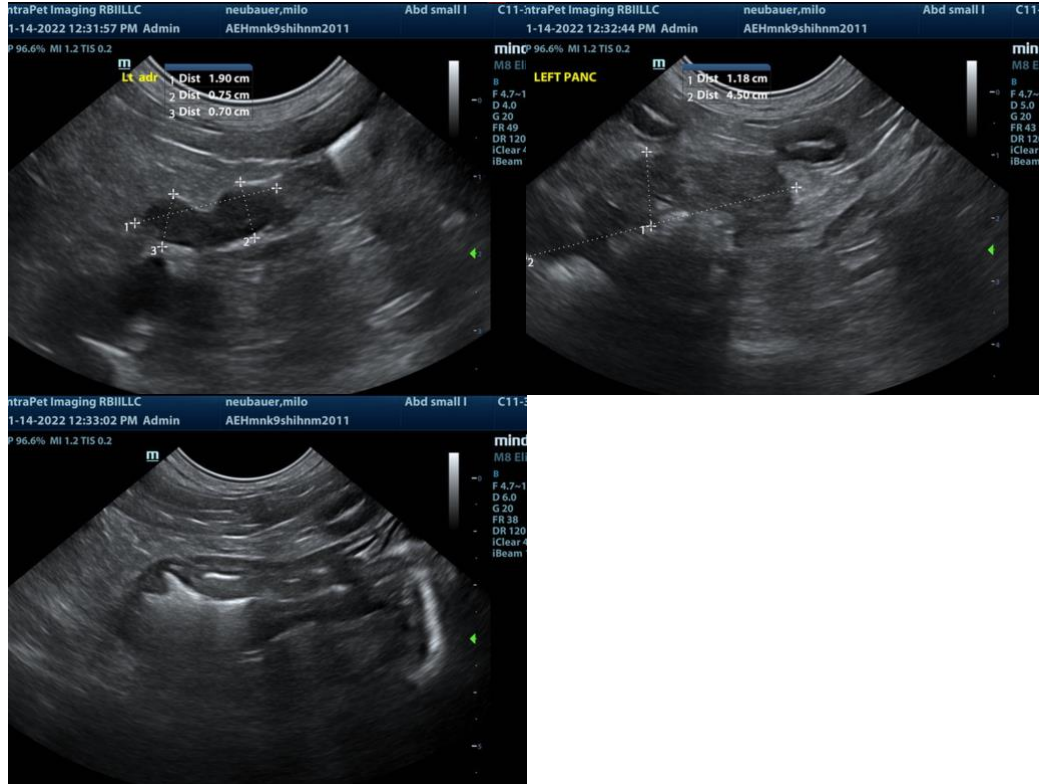
Aggressive treatment for pancreatitis warranted in this patient. FNA of the pancreas would be ideal for further definition of inflammatory cell type. No evidence or suspicion of neoplasia. Recheck sonogram in 72-hours. Eventual work up for cushings/PDH indicated, if urine specific gravity is persistently >1.020.

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. 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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