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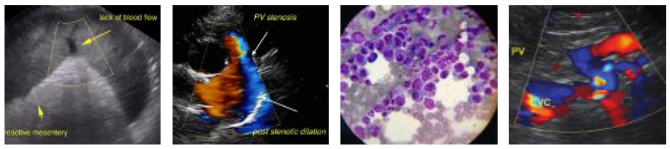
Clinical Sonography & Telecytology
EDUCATIONAL TELECONSULTATION SERVICES™



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

PATIENT

Butter Barnstead

SPECIES

Canine

BREED

Chihuahua Mix

SEX

Neutered Male

AGE

10 Years

WEIGHT

5 kg

INTERPRETED BY

Eric Lindquist, DMV DABVP, Cert. IVUSS

IMAGING PERFORMED BY

Dr. Emily Kalenius

HOSPITAL NAME

Wilvet Salem

REFERRING VET

Dr. Emily Kalenius

INVOICE

16528

DATE

7/9/22

PRESENTING CLINICAL SIGNS

History: Long term diabetic. Recent history of anorexia vomiting and diarrhea > 2 days. Presented to rDVM today - given fluids and cerenia.

Abnormal PE/Chem/CBC/UA Results: rDVM labs CBC = NEU 13 k/ul, PLT 593 k/ul, CHEM BUN 46. 4 mg/dl, PHOS 11.3 mg/dl, ALB 4.5 g/dl, CHOL 425 mg/dl, ALT 222, ALP 387, GGT 40, TG 154 Lytes = Na 127, K+ 3.2, Cl- 77 DM recent anorexia, v/d Hepatomegaly, alopecia sway back r/o HAC __ ADD - Urinalysis USG 1.022, pH 7.0, PRO 30 mbd/km ,GLU 1000 mg/dl, KET 150 mg/dl, BLD 25 ery/ul, WBC < 1/hpf, RBC 3/hpf suspect cocci, rare casts, no crystals - Bacterial confirmation kit = negative - EPOC = Bicarb 11.2, TCO2 11.7, pH 7.090, BE -18.6, Na 123, Cl- 91, K+ 3.8, AG 25, LAC 3.7, BUN 50, GLU >700, HCT 55% - BG 548 - BP = 115/73 MAP 87

ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN

Urinary System

The **urinary bladder** and visible pelvic urethra were unremarkable for the level of repletion presented. The urine, however, did present some moderate mildly echogenic debris consistent with mucous, exfoliated cells from renal or bladder origin, and/or blood clots as these echogenic changes can all present similarly. This is often related to urinary tract infection but may represent simple evidence of exfoliated debris or sterile inflammation. Cystocentesis, urinalysis, +/- culture would be recommended to rule out and define any UTI. The residual prostate measured 5.0 mm.

The **kidneys** were normal in size and contour; however, a minor hyperechoic ring was noted at the corticomedullary junction. This is consistent with moderate 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 pyelectasia was noted in the right kidney. The right kidney measured 5.4 cm. The left kidney measured 4.97 cm.

Adrenal Glands

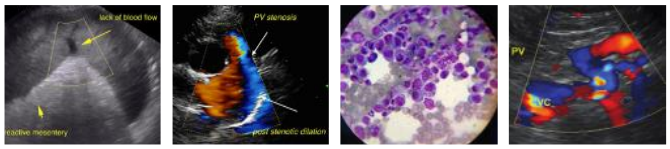
The **right adrenal gland** was visualized and recognized as having normal shape, size, position and echogenicity for this breed. The phrenic vasculature, glandular echogenicity and detail were unremarkable. Capsule, cortex, and medullary definition were normal for this age patient. The right adrenal gland measured 1.95 cm x 1.06 cm at the cranial pole and 0.61 cm at the caudal pole.

The **left adrenal gland** comprised a mass. The left adrenal was swollen at the cranial pole with capsular expansion without capsular escape or vascular invasion noted. The left adrenal gland measured 2.82 cm x 1.34 cm at the cranial pole and 0.4 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



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Exam of the cranial abdomen demonstrated excessive **liver** size, swollen contour, with conserved uniform architecture. Parenchymal echogenicity was diffusely isoechoic to the spleen and falciform fat. Minor excessive GB debris was noted with the presence gall bladder dilation and precipitate without the overt formation of mucocele but this may be an issue in the future. This type of liver presentation typically is associated with slow and gradual SAP elevations with low-grade ALT rise. USG-FNA sampling is encouraged if more aggressive LE profiles are present such as ALT > 200 or rapid rise in SAP. These presentations are usually reactive hepatopathies owing to other disease processes either endocrine (Diabetes, Hypothyroidism, Cushing's disease), "antigen surveillance" from the gut/pancreas, or idiopathic breed predisposed progressions. This is a mild change.

Gastrointestinal

The **stomach** revealed anechoic stasis consistent with metabolic ileus. The gastric wall was unremarkable. The small intestine and colon were unremarkable.

Pancreas

The base and limbs of the **pancreas** were observed to be largely isoechoic to surrounding omental fat. Some mild parenchymal remodeling, however, with mild deviation from curvilinear normalcy was observed. Pancreatic duct and capsular irregularities were present consistent with age related changes. If pain upon imaging (+ Murphy sign) was present or if the patient is focally painful in subxyphoid palpation then low-grade smoldering chronic pancreatitis should be suspected.

ULTRASONOGRAPHIC FINDINGS

- Enlarged left adrenal gland comprising a mass, appears resectable
- Prominent pancreas, possible low-grade pancreatitis
- Urinary bladder debris consistent with UTI
- Diabetic nephropathy
- Stomach, anechoic stasis
- Hepatopathy

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

Concern for pheochromocytoma or carcinoma of the left adrenal gland, this is likely playing a role in the diabetic dysregulation. Serial blood pressures +/- left adrenalectomy recommended. Urine culture and sensitivity and 4-6 weeks antibiotic therapy warranted. Given the minor renal pyelectasia, embedded infection within the kidneys may also be an issue.

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

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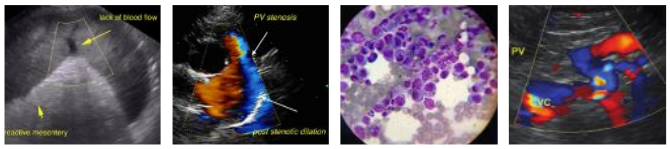

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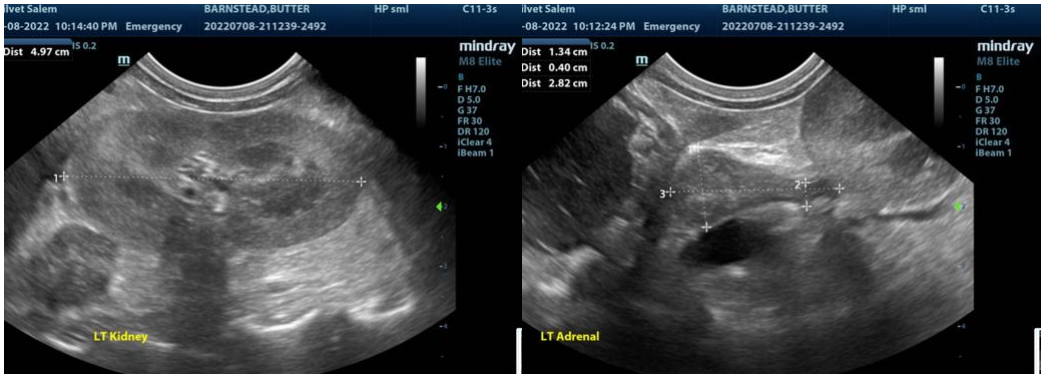
Acromegaly

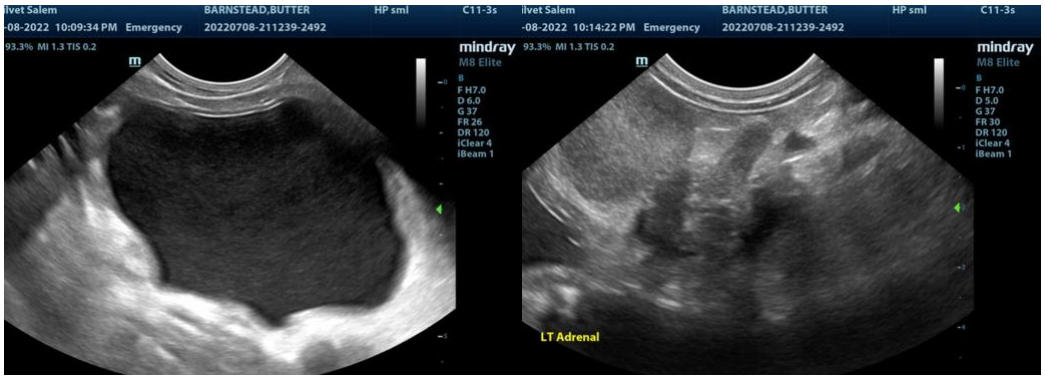
Owner compliance

Insulin quality issues

Antibodies to insulin

Underlying Neoplasia





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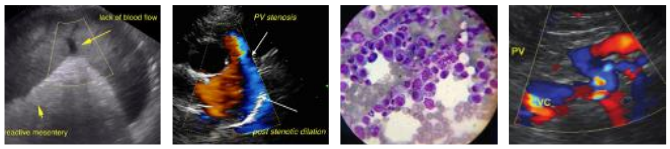

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The information and recommendations provided are based on the images presented by the referring veterinarian. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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