



PATIENT	PRESENTING CLINICAL SIGNS
Shadow Venberkmoes	Patient presented for lethargy, not eating or drinking. Vomited food while at home. Diagnosed with diabetes but hasn't got its dose of insulin in a month.
SPECIES	Abnormal PE/Chem/CBC/UA Results: Calcium 6.7 Glucose 415 Cholesterol 342 ALP 153 pCO2 26.8 TCO2 15.3 BE,ECF -10.1 Sodium 114 Potassium 2.6 Chloride 81 Calcium 0.85 Bicarbonate 15.3 WBC 17.89 LYM 11.75 Mono 0.08 EOS 0 NEU 33.9% LYM 65.7% EOS 0%
Canine	
BREED	ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN
Mixed	Urinary System
SEX	The urinary bladder is moderately distended with anechoic contents. No masses, inflammatory changes, echogenic sediment or cystoliths are observed. The urinary bladder, trigone and visible pelvic urethra are normal in thickness with a smooth mucosal surface.
Neutered Male	The right kidney is normal in size (4.8 cm), shape and echogenicity. It has smooth peripheral margination. There is a normal 1:3 cortex to medulla ratio with appropriate corticomedullary distinction. There is no evidence of pyelectasia, mineral or infarcts observed. A hyperechoic band parallel to the corticomedullary border is present.
AGE	The left kidney is normal in size (5.0 cm), shape and echogenicity. It has smooth peripheral margination. There is a normal 1:3 cortex to medulla ratio with appropriate corticomedullary distinction. There is no evidence of pyelectasia, mineral or infarcts observed. A hyperechoic band parallel to the corticomedullary border is present.
17 Years	
WEIGHT	Adrenal Glands
5.72 kg	The right adrenal gland is normal in size (0.67 cm thick), shape and contour. Corticomedullary structure is unremarkable. Visible surrounding vasculature appears normal.
INTERPRETED BY	The left adrenal gland is normal in size (0.77 cm thick), shape and contour. Corticomedullary structure is unremarkable. Visible surrounding vasculature appears normal.
Beth Johnson, DVM DACVIM	
IMAGING PERFORMED BY	Spleen
Dr. Van Nieuwal	The spleen is subjectively normal in size with a normal smooth capsular contour. Parenchyma is appropriately finely textured and homogenous with normal echogenicity relative to surrounding tissue (hyperechoic to liver). No focal nodules or masses are observed. Splenic vasculature appears normal.
HOSPITAL NAME	Liver
Animal Emergency Hospital of Volusia	Liver is subjectively enlarged (swollen contour) without disruption of architecture. It has a normal homogenous echotexture. Parenchyma is diffusely hyperechoic characterized by less prominent than normal portal vein walls and increased echogenicity relative to the spleen and falciform fat. No focal lesions are observed. Visible vasculature and biliary tree appear normal without distension or congestion.
REFERRING VET	INVOICE
Dr. Van Nieuwal	The gallbladder is non-distended in size. The wall is smooth without visible thickening. Luminal contents are primarily anechoic. There is no evidence of cystic or common bile duct dilation.
	39650
DATE	
7/19/22	



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SPECIES

Canine

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17 Years

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Gastrointestinal

The stomach wall is normal in thickness (canine < 0.5 cm and feline < 0.4 cm) and layering. The lumen of the stomach is empty with no evidence of obstruction, foreign material or infiltrative disease. Pyloric outflow tract appears patent.

The visible small intestines are normal in wall thickness and layering. Small intestinal motility appears adequate (1-3 contractions per min). The lumen of the small intestine is mildly distended with echogenic non-shadowing luminal contents and gas consistent with normal ingesta. There is no evidence of obstruction, foreign material or infiltrative disease.

The visible colon is normal in wall thickness (< 0.2 cm) and layering. Contents are consistent with normal formed feces and gas.

Pancreas

The pancreatic parenchyma is appropriately isoechoic to surrounding tissue. Visible capsule is smooth and normal in contour. There is no visible pancreatic duct dilation. There is no evidence of active peripancreatic inflammation.

Free Abdomen

There is no evidence of free peritoneal effusion noted in these images.

There is no apparent lymphadenopathy noted in these images.

ULTRASONOGRAPHIC FINDINGS

- **Hyperechoic hepatomegaly** - This appearance is non-specific and most consistent with a benign steroid (endocrine) or vacuolar hepatopathy or reactive or idiopathic hepatopathy. Inflammatory and/or infiltrative disease (such as round cell neoplasia) are also possible, but considered less likely.
- **Medullary rim sign** - This finding is of unknown clinical significance and can be a normal variant, often idiopathic. Medullary rim sign can be present with renal disease including FIP, lymphoma, hypercalcemic nephropathy, Leptospirosis, tubular disease, other and should be interpreted in combination with other more specific indications of kidney disease such as isosthenuria, proteinuria, azotemia, etc. This is a common incidental finding in patients with diabetes mellitus.

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

Recommendations include:

- Urinalysis (to look for evidence of ketosis) and, if indicated based on urinalysis results, urine culture are recommended. If protein is present in an otherwise quiet sediment, protein quantification with a urine protein to creatinine ration is recommended.
- A gastrointestinal malabsorption panel (including cobalamin, folate, TLI and PLI) to Texas A&M GI Laboratory is recommended for further evaluation of GI and pancreatic function, given the gastrointestinal signs and hypocalcemia, to look for evidence of potential malabsorption contributing to the hypocalcemia.
- There is no ultrasonographically visible reason to explain this patient's clinical illness/malaise. Therefore, top consideration is given to metabolic disturbances, electrolyte abnormalities, etc., created potentially by the diabetes mellitus +/- (unknown at this time) ketone status.



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Therefore, medical management recommendations are to stabilize hydration, electrolytes, symptomatically manage gastrointestinal signs, restart insulin to better manage glucose, etc., and reassess.

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REFERRING VET

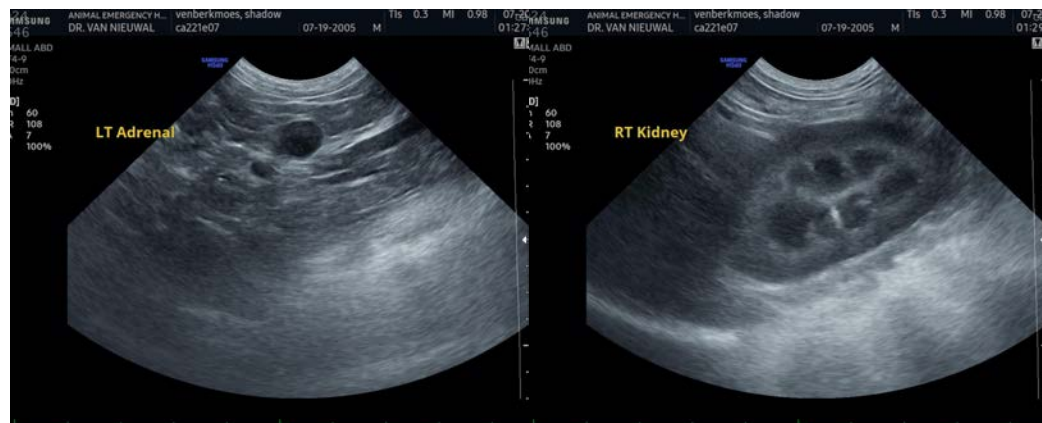
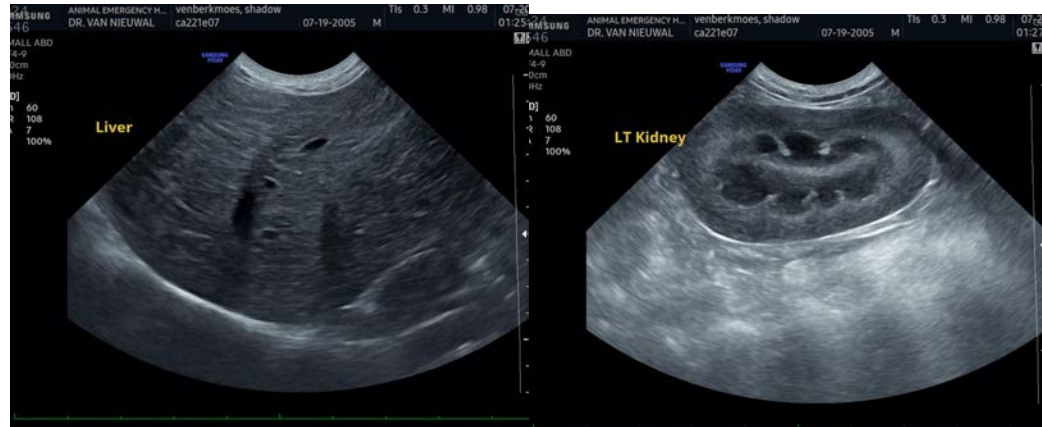
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The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

SPECIES

Canine

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.

BREED

Mixed

Beth Johnson, DVM, DACVIM

Beth.Johnson@sonopath.com

SEX

Neutered Male

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