



PATIENT	PRESENTING CLINICAL SIGNS
Jango Gruendel	History of lethargy, ataxia, weakness. Periodic vomiting. Abnormal PE/Chem/CBC/UA Results: Low Fructosamine with hypoglycemia.
SPECIES	ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN
Canine	Urinary System
BREED	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.
Boston Terrier X	
SEX	The right kidney is normal in size (5.86 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.
Neutered Male	
AGE	The left kidney is normal in size (5.25 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.
7 Years	
WEIGHT	Adrenal Glands
15.2 kg	The right adrenal gland is normal in size (0.46 cm at the caudal pole), shape and contour. Corticomedullary structure is unremarkable. Visible surrounding vasculature appears normal. The cranial pole was difficult to fully visualize in these images.
INTERPRETED BY	The left adrenal gland is normal in size (0.50 cm at the cranial pole and 0.56 cm at the caudal pole), shape and contour. Corticomedullary structure is unremarkable. Visible surrounding vasculature appears normal.
Beth Johnson, DVM DACVIM	
IMAGING PERFORMED BY	Spleen
Dr. Sarah Barthelemy	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
Canyon Meadows VC	The liver is subjectively normal in size with normal smooth curvilinear peripheral contour. Parenchyma is appropriately hypoechoic to the spleen in echogenicity and appropriately mildly coarse and homogenous in echotexture. Multifocal well demarcated hyperechoic homogeneous nodules noted throughout the liver parenchyma. Visible vasculature and biliary tree appear normal without distension or congestion.
REFERRING VET	
Dr. Leboldus	
INVOICE	Gallbladder is moderately distended with anechoic bile as well as suspended and gravity dependent echogenic debris. The wall is smooth without visible thickening. There is no evidence of cystic or CBD dilation. There is no evidence of effusion or inflammation.
43472	
DATE	Gastrointestinal
6/27/23	The visible stomach wall is normal in thickness and layering. The lumen of the stomach 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. Pyloric outflow tract appears patent.



PATIENT

Jango Gruendel

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.

SPECIES

Canine

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

BREED

Boston Terrier X

Pancreas

The pancreatic parenchyma is appropriately isoechoic to surrounding tissue. Visible capsule is smooth and normal in contour, except for in the caudal left limb, where there is a 0.60-0.70 cm in diameter hypoechoic nodule resulting in a capsular bulge. There is no visible pancreatic duct dilation. There is no evidence of active peripancreatic inflammation.

SEX

Neutered Male

Free Abdomen

AGE

7 Years

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

There is no apparent lymphadenopathy noted in these images.

WEIGHT

15.2 kg

ULTRASONOGRAPHIC FINDINGS

- **Hypoechoic pancreatic nodule** – could represent benign nodular hyperplasia or other benign lesion. However, given this patient’s reported hypoglycemia, an insulinoma is also a differential/concern.
- **Liver nodules** - Differentials for discrete liver nodules include primarily benign changes such as nodular hyperplasia, fibrosis of an old hematoma, granuloma, myelolipoma, etc.; however, while considered less likely, primary hepatic neoplasia, infiltrative round cell neoplasia and metastatic disease can mimic benign lesions and cannot be definitively ruled out.

INTERPRETED BY

Beth Johnson, DVM
DACVIM

SECONDARY FINDINGS

- **Mild gallbladder debris** - Cholecystic debris is of unknown clinical significance. It can be seen with biliary stasis from fasting or illness. Cholecystic debris is not necessarily related to hepatobiliary disease. Echogenic bile is most commonly an incidental finding in dogs and should be interpreted in combination with clinical signs such as nausea, inappetence, cranial abdominal discomfort and/or laboratory changes such as increased ALP and/or increased Tbili.

IMAGING PERFORMED BY

Dr. Sarah Barthelemy

HOSPITAL NAME

Canyon Meadows VC

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

REFERRING VET

Dr. Leboldus

To further support the suspicion of an insulinoma in this patient, if not recently evaluated, a paired insulin to glucose ratio obtained at a time when the blood glucose level is <50 is recommended.

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Pending results, additional workup recommendations for hypoglycemia could include a baseline cortisol. If baseline cortisol is less than 2, a full ACTH stimulation test is recommended to rule out hypoadrenocorticism.

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If the insulin level confirms an insulinoma, three view thoracic radiographs are recommended for further assessment of cardio-pulmonary status as well as to further evaluate for any evidence of metastatic disease, if not recently evaluated.

While the nodular appearance of the liver trends towards benign in appearance, a fine needle aspirate of the liver could be considered to further rule out metastatic lesions.



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Ultimately, an exploratory laparotomy for planned pancreatic nodule/insulinoma biopsy/removal is recommended. If surgery is elected, a pre-surgical planning abdominal CT scan could be helpful to look for evidence of/rule out any other metastatic lesions not visible in these images at this time.

SPECIES

Canine

BREED

Boston Terrier X

SEX

Neutered Male

AGE

7 Years

WEIGHT

15.2 kg

INTERPRETED BY

Beth Johnson, DVM
DACVIM

IMAGING PERFORMED BY

Dr. Sarah Barthelemy

HOSPITAL NAME

Canyon Meadows VC

REFERRING VET

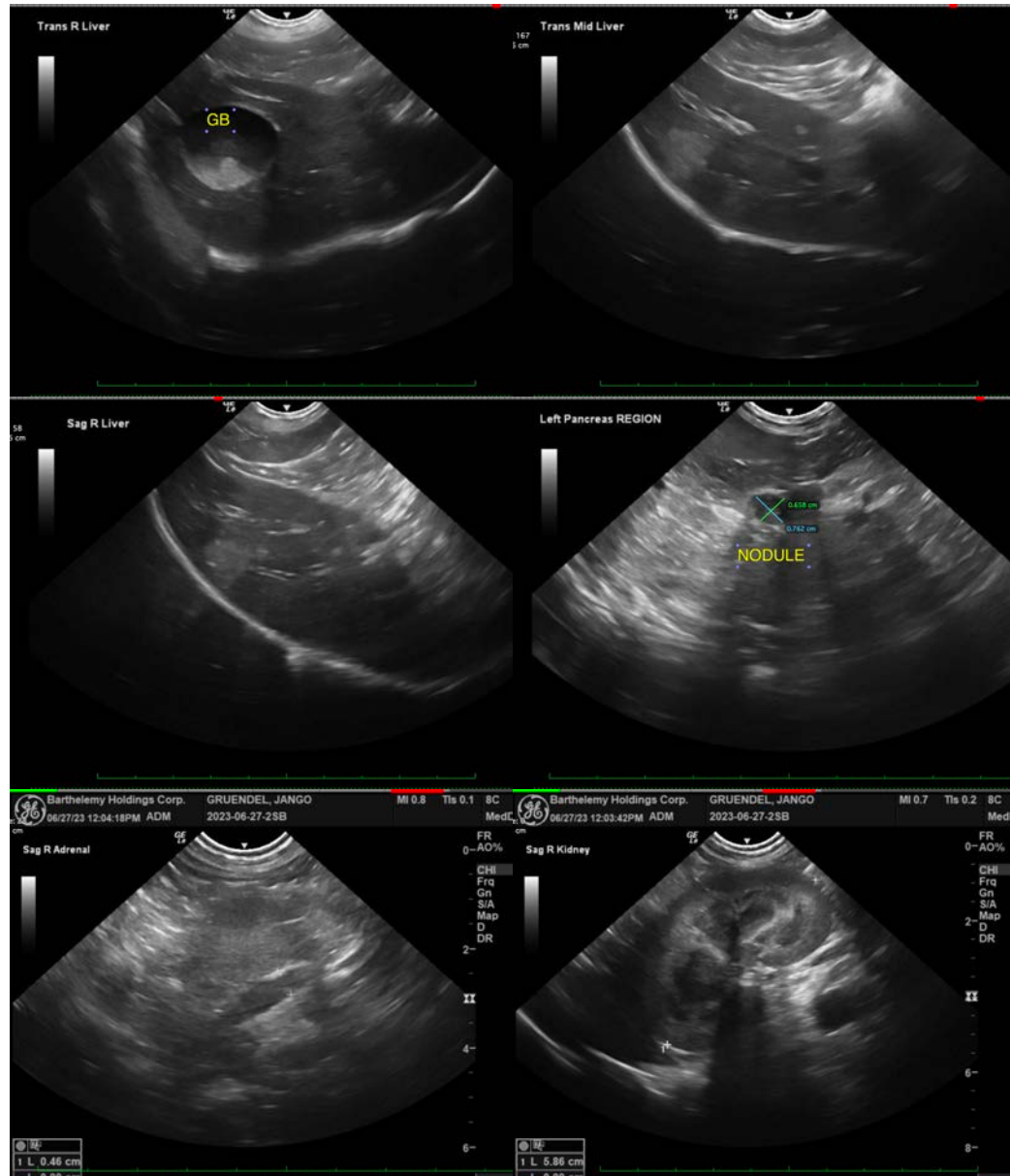
Dr. Leboldus

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Boston Terrier X

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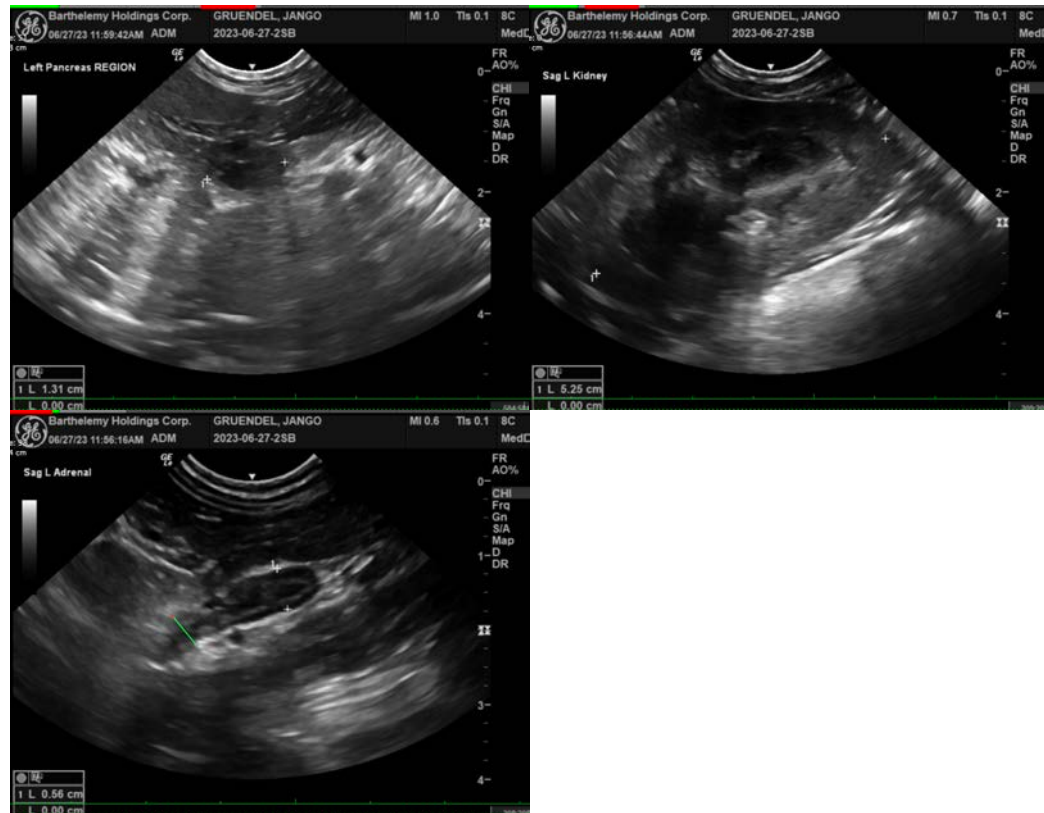
Dr. Leboldus

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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.

Beth Johnson, DVM, DACVIM
info@sonopath.com