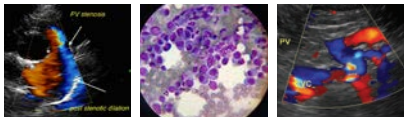
IMAGING PERFORMED BY

IntraPet.com



SonoPath

Clinical Sonography & Telecytology

EDUCATIONAL TELECONSULTATION SERVICES™

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DATE

8/16/22

PATIENT

Evil Welker

SPECIES

Canine

BREED

Pug

SEX

Spayed Female

AGE

7/4/10

WEIGHT

15.1 Pounds

INTERPRETED BY

Beth Johnson, DVM DACVIM

IMAGING PERFORMED BY

Rachel Brilhart RDMS

HOSPITAL NAME

Animal Emergency Hospital

REFERRING VET

Dr. Martinoli

INVOICE

40502

PRESENTING CLINICAL SIGNS

History of pancreatitis in June 2022; diagnosed with diabetes June 2022. Returned to AEH for seizures in July 2022; started Keppra; no seizures since then.

Current Medications: Humulin R, Ampicillin, Metronidazole, Cerenia.
Lab Results: Abnormal cPL (388); WBC 37K; Blood glucose - 454
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 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.

The right kidney is normal in size (4.13 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 or infarcts observed. Non-obstructive areas of mineralization/nephroliths are noted. A hyperechoic band parallel to the corticomedullary border is present.

The left kidney is normal in size (4.48 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 or infarcts observed. Non-obstructive areas of mineralization/nephroliths are noted. A hyperechoic band parallel to the corticomedullary border is present.

Adrenal Glands

The right adrenal gland is normal in size (1.95 cm long x 0.74 cm at the cranial pole and 0.58 cm at the caudal pole), shape and contour. Corticomedullary structure is unremarkable. Visible surrounding vasculature appears normal.

The left adrenal gland is normal in size (2.5 cm long x 0.98 cm at the cranial pole and 0.69 cm at the caudal pole), shape and contour. Corticomedullary structure is unremarkable. In the cranial pole of the left adrenal gland, several hypoechoic nodules are present that result in some suspected early capsular expansion without evident escape or vascular invasion. Visible surrounding vasculature appears normal.

Spleen

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.

Liver

Liver is subjectively enlarged with mildly irregular margins. Parenchyma is heterogenous characterized by multiple poorly defined hypoechoic nodules within otherwise hyperechoic liver parenchyma. Visible vasculature and biliary tree appear normal without distension or congestion.

Gallbladder is subjectively mildly overdistended 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. For monitoring purposes, the gallbladder measures approximately 4.0 cm in diameter.

Gastrointestinal

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.

The visible small intestines are normal in wall thickness and layering (canine duodenum < 0.5 cm and feline duodenum < 0.4 cm; other < 0.3 cm). Small intestinal motility appears adequate (1-3 contractions per min). The lumen of the small intestine is empty with 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 observed pancreas is prominent (enlarged) in size, hypoechoic to surrounding tissue and irregular in shape with a swollen undulating contour. Enhanced hyperechoic ill-defined surrounding fat is noted.

Free Abdomen

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

There is no apparent lymphadenopathy noted in these images.

PRIMARY FINDINGS

- Severe acute pancreatitis suspected
- **Heterogenous Liver –** These changes are most consistent with benign processes such as nodular hyperplasia, steroid (vacuolar) hepatopathy, extramedullary hematopoiesis or possibly chronic inflammatory disease and less commonly infiltrative round cell or metastatic neoplasia.
- The gallbladder contains echogenic debris of unknown clinical significance and is mildly overdistended, likely secondary to the acute pancreatitis. This change should be interpreted/monitored based on resolution versus progression, etc. following resolution of the pancreatitis.
- The hypoechoic adrenal nodules in the cranial pole of the left adrenal gland may be incidental benign nodules of no clinical significance. However, they could also be suggestive of adrenal hyperplasia or even infiltrative disease such as early or emerging pheochromocytoma or adenocarcinoma, given the mild capsular expansion. Metastatic lesions are also possible but considered less likely given the lack of visible primary disease to explain that.

SECONDARY FINDINGS

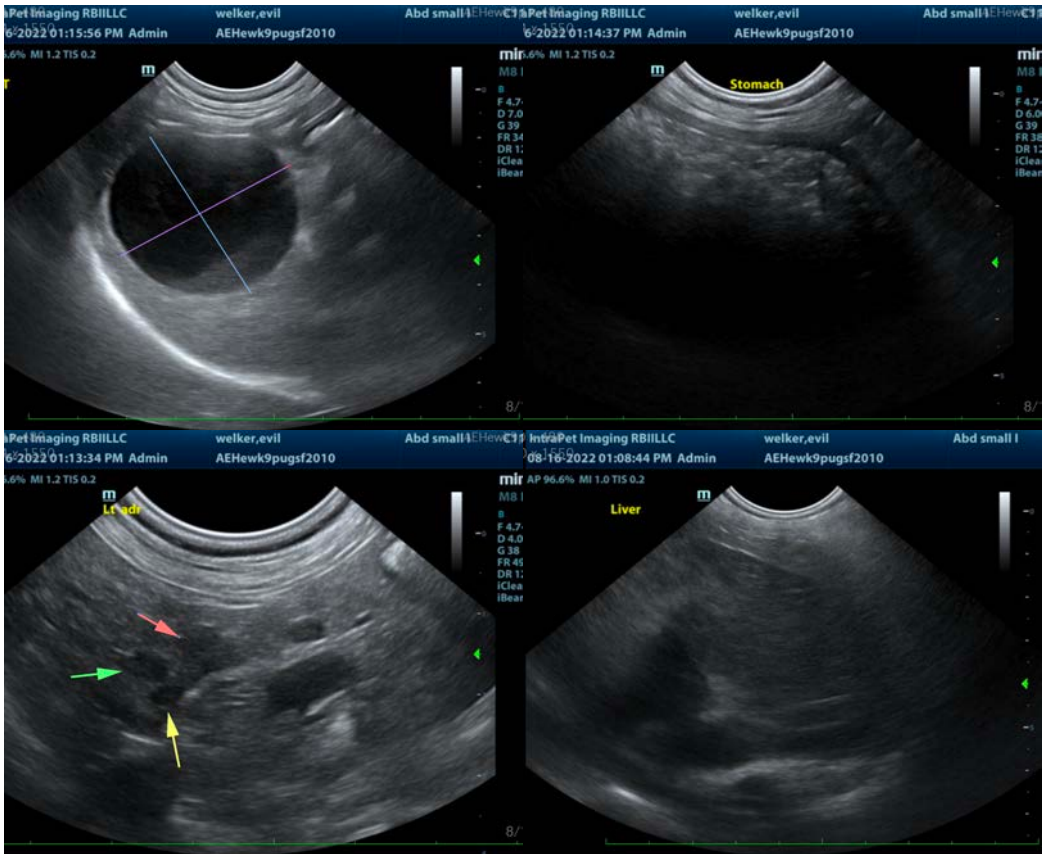
- **Medullary rim sign -** This finding is of unknown clinical significance and can be a normal variant, often idiopathic. Medullary rim sign can be present with renal disease including FIP, lymphoma, hypercalcemic nephropathy, Leptospirosis, tubular disease, other and should be interpreted in combination 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.
- Bilateral non-obstructive nephrolithiasis

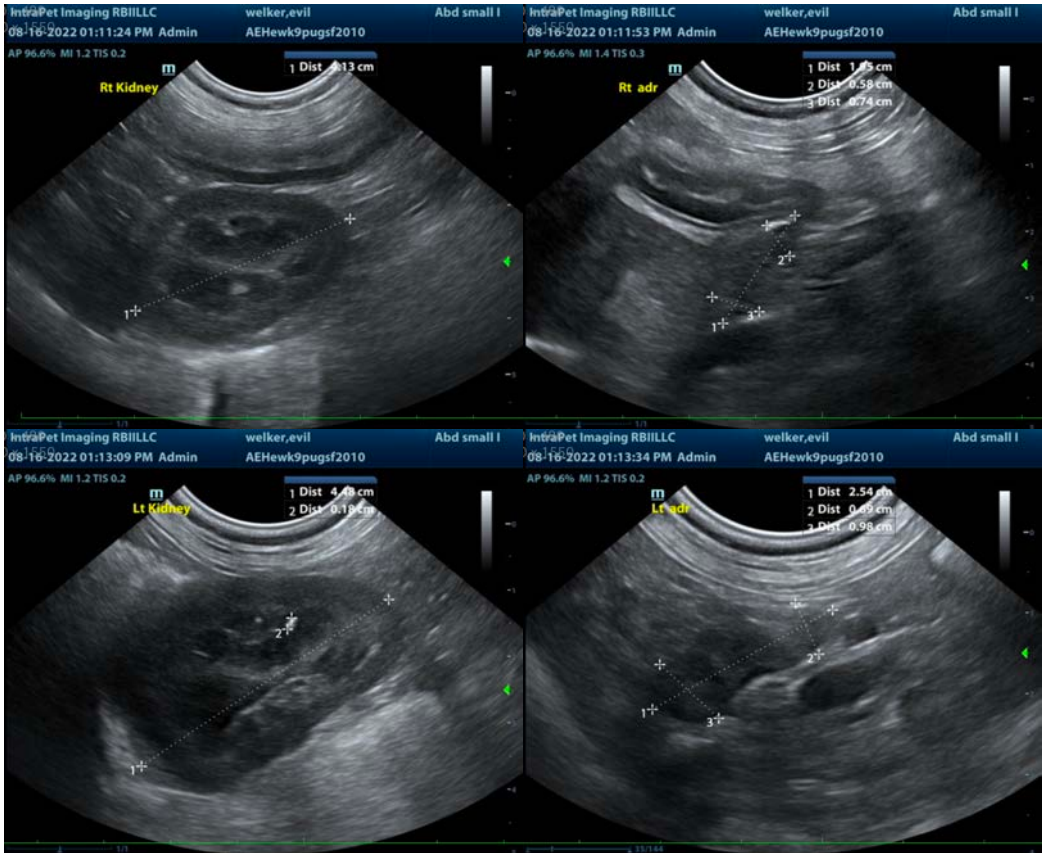
INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

A quantitative PLI is recommended if not recently evaluated.

Medical management of pancreatitis with anti-emetics, gastroprotectants, appetite stimulants or nutritional support as needed, pain management, broad spectrum antibiotics, and fluid therapy is recommended. If possible, a fresh frozen plasma transfusion and hyperbaric oxygen therapy (HBOT) could be beneficial. Monitoring of the pancreas with power doppler is recommended to identify possible necrosis as well as other potential sequelae such as abscesses, etc. Given this patient's concurrent diabetes mellitus, close monitoring/management of electrolyte abnormalities, glucose and possible development of ketones, etc. is also recommended.

Once this patient is clinically improving and beginning to eat, transition to a low-fat diet with recommendations to continue the diet long-term would be recommended. Upon complete resolution of this acute pancreatitis, etc., further investigation of the adrenal gland changes in the form of hormone testing, if clinicals signs are present, versus close monitoring of the nodules now, if clinical signs are not present, should be considered. Recheck ultrasound of the adrenal gland in 6-8 weeks is recommended. If not recently evaluated, blood pressure is recommended at this time.




IntraPet Imaging RBIILLC
welker,evil
Abd small I
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Rt Kidney
1 Dist 4.13 cm
IntraPet Imaging RBIILLC
welker,evil
Abd small I
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AEHewk9pugsf2010
AP 96.6% MI 1.4 TIS 0.3
Rt adr
2 Dist 0.58 cm
3 Dist 0.74 cm
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welker,evil
Abd small I
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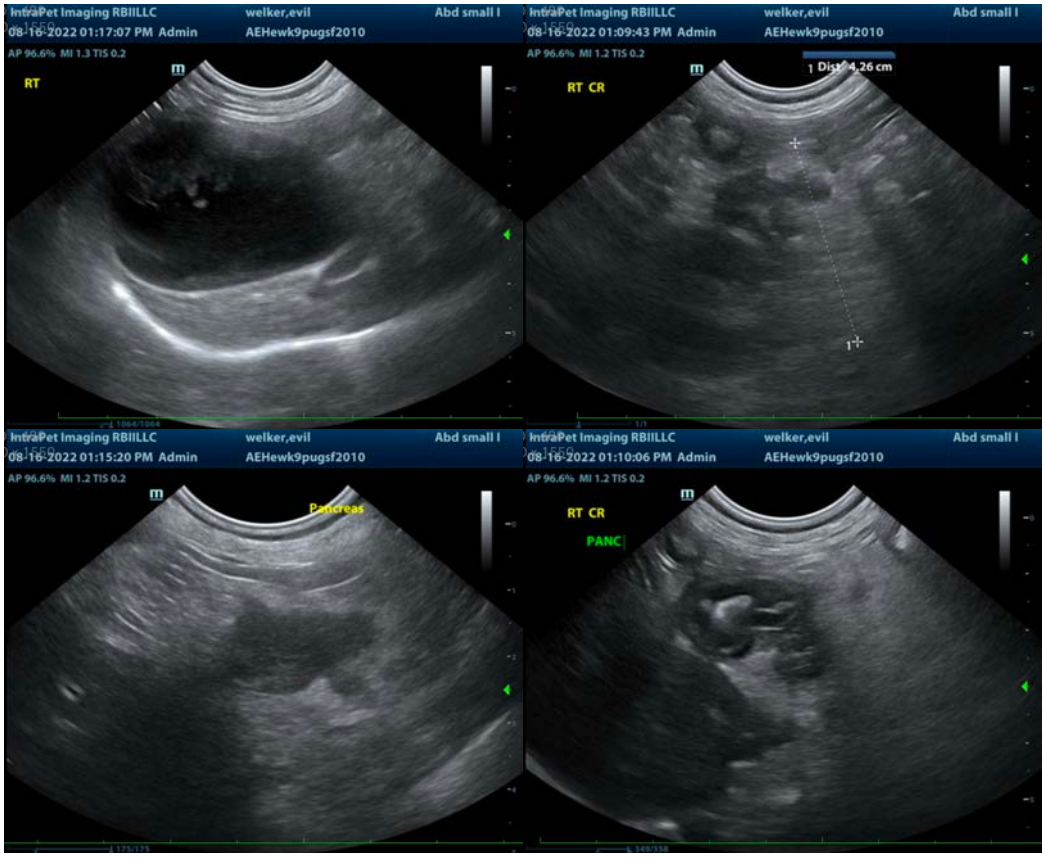
1 Dist 2.54 cm



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
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