

**DATE PRESENTING CLINICAL SIGNS**

1/23/23

PATIENT

Jake Koncurat

SPECIES

Canine

BREED

Pug

SEX

Neutered Male

AGE

4/1/09

WEIGHT

36.9 Pounds

INTERPRETED BYBeth Johnson, DVM
DACVIM**HOSPITAL NAME**Animal Emergency
Hospital**REFERRING VET**

Dr. Martinoli

INVOICE

20752

History: Started Clindamycin for dental problems on Monday (right side was bleeding.) Tuesday (4 days ago) got his am/pm doses, but appetite was decreasing; only ate people food, not dog food. Wednesday wouldn't eat anything; they did get a small piece of cheese in him, but he later threw it up. Called rDVM; rx Metoclopramide and Mirtazepine; got one dose of each on Thursday (yesterday) and in the pm he ate some chicken and rice (about 1/2 cup.) About an hour later he started vomiting violently; vomited up all the food, then he would keep drinking but could not keep that down either.

Current Medications: metoclopramide, maropitant, ondanestron, protonix, ampicillin/sulbactam.

Lab Results: See attached.

Radiographs: No obvious obstruction or obstructive pattern or suspected foreign material.

Date of Previous IntraPet Ultrasound: No previous.

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**

Urinary bladder is adequately 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.

Prostate is normal in size, echotexture and echogenicity for a neutered male.

Left kidney is normal is size (6.12 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.

Right kidney is normal is size (6.23 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.

Adrenal Glands

Left adrenal gland is normal in size (2.39 cm long x 0.71 cm at cranial pole and 0.83 cm at caudal pole), shape and overall architecture, echogenicity and echotexture. Visible surrounding vasculature appears normal.

Right adrenal gland is normal in size (2.48 cm long x 0.86 cm at cranial pole and 0.79 cm at caudal pole), shape and overall architecture, echogenicity and echotexture. Visible surrounding vasculature appears normal.

Spleen

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). Multifocal well-demarcated hyperechoic homogenous nodules are noted. 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 moderately distended with anechoic bile as well as mild to moderate 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.

Gastrointestinal

The visible stomach wall is normal in thickness 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 empty with no evidence of obstruction, foreign material or infiltrative disease.

The visible colon is normal in wall thickness and layering. Contents are consistent with soft/liquid stool.

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 peritoneal effusion. There is no apparent lymphadenopathy.

ULTRASONOGRAPHIC FINDINGS

Primary Findings

- Bilateral 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.
- Acute pancreatitis
- Markedly/severely 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.

Secondary Findings

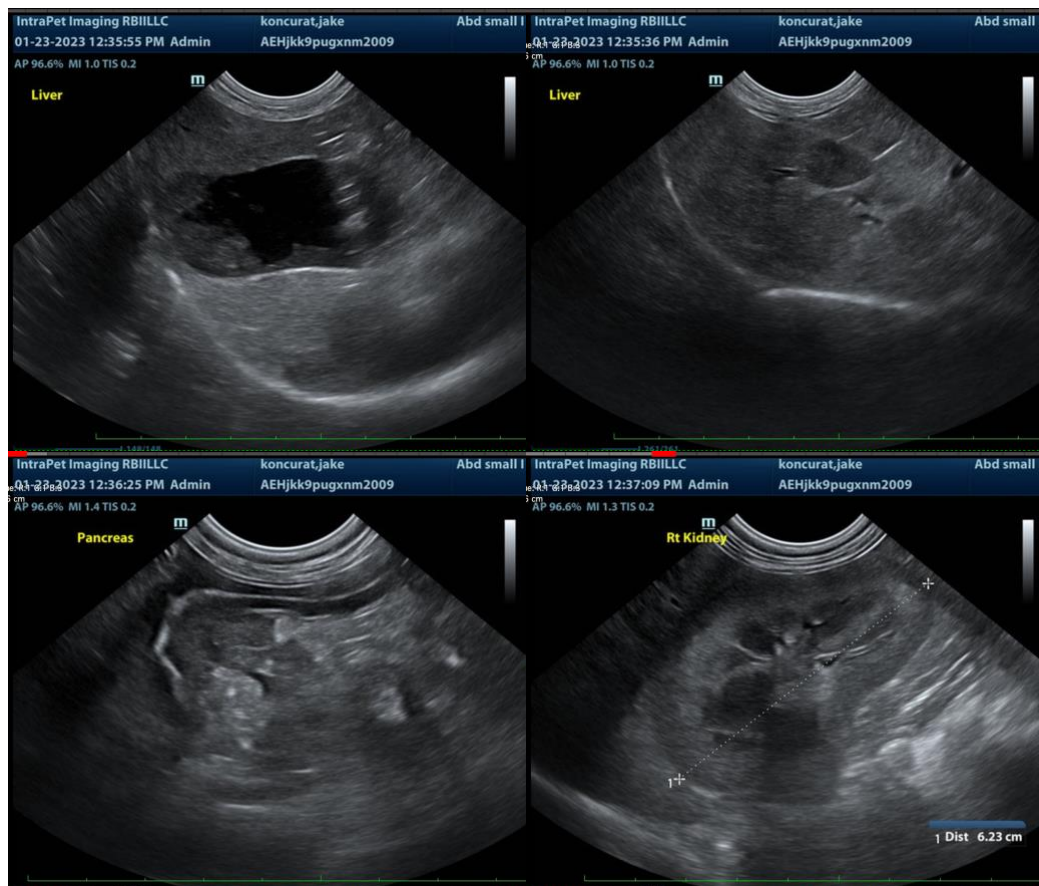
- Mild to moderate gallbladder debris - Cholecystic debris is of unknown clinical significance. It can be seen with biliary stasis from fasting or illness. Cholecystic debris is not necessarily related to hepatobiliary disease. Echogenic bile is most commonly an incidental finding in dogs and should 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.

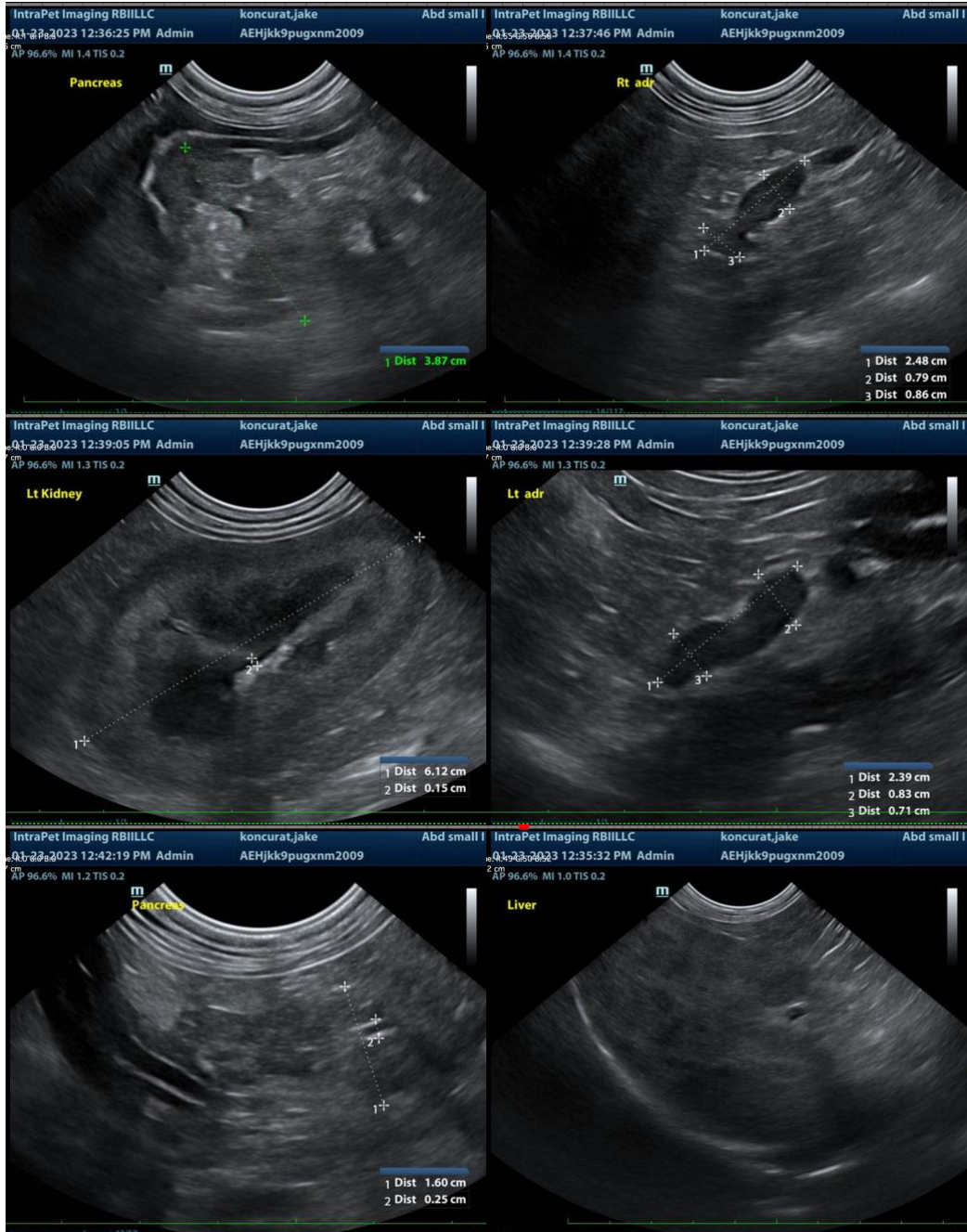
- Hyperechoic splenic nodules – most consistent with benign myelolipomas. Other differentials such as fibrosis or calcification caused by old hematomas or infarcts, chronic inflammation, granulomatous disease or metastatic disease cannot be ruled out, but are considered less likely.

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

This patient's clinical signs are most likely a combination of the DKA status, combined with concurrent pancreatitis. The visible kidney changes are likely secondary to the diabetes, and further suspicion of kidney disease should be made based on continued vs improved azotemia after addressing the prerenal component to the azotemia. Similarly, the liver changes are likely secondary to diabetic hepatopathy/nodular hyperplasia, etc., however, given the marked degree of change, pending patient response, a fine needle aspirate of the liver could be considered if the patient's coagulation status is appropriate.

In the meantime, 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. Monitoring of the pancreas with power Doppler is recommended to identify possible necrosis as well as other potential sequelae such as abscesses, etc. Additionally, until ketones have resolved, and the patient is reliably eating, short acting insulin therapy and close blood glucose and electrolyte monitoring is also recommended.







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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