



PATIENT

Dove Kishpaugh

PRESENTING CLINICAL SIGNS

DKA, lethargic, anorexic, Fpl +, electrolytes low, TBili and ALT increasing. Current meds: KCL 45mEq/L in fluids, buprenex, Cerenia, insulin CRI

SPECIES

Feline

Abnormal PE/Chem/CBC/UA Results: Cr 0.4 (0.8L); Phos 1.1 (2.6 L); Ca 8.1 (8.8L); glucose 276 (130H); ALT 1411 diluted; T.Bili 4.1 (0.5H); Na 132 (147 L); K 2.6 (3.4 L); Cl 86 (107 L). Urine ketones +, Fpl +

BREED

DSH

ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN

Urinary System

SEX

Spayed Female

The urinary bladder is moderately distended with anechoic urine. The Bladder wall, trigone, ureteral papillae and visible urethra (to a depth of 2cm) appear normal with no evidence of wall thickening, mucosal irregularities, masses or cystic calculi.

AGE

8 Years

The left kidney has a normal shape and size (4.61 cm). Overall echogenicity is normal with adequate corticomedullary distinction and a typical 1:3 cortex:medulla ratio. There is no evidence of focal perinephric inflammation or effusion. There is no evidence of pyelectasia, nephroliths, infarcts or hydroureter. Renal vasculature is normal.

WEIGHT

8.7 Pounds

The right kidney has a normal shape and size (5.21 cm). Overall echogenicity is normal with adequate corticomedullary distinction and a typical 1:3 cortex:medulla ratio. There is no evidence of focal perinephric inflammation or effusion. There is no evidence of pyelectasia, nephroliths, infarcts or hydroureter. Renal vasculature is normal.

Adrenal Glands

INTERPRETED BY

Kathleen Sennello DVM,
MS, Diplomate ACVIM
(Small Animal Internal
Medicine)

The left adrenal gland is normal/borderline large, measuring 0.66 cm at the caudal pole. It is observed in its normal position cranial to the left renal artery. It is normal in appearance (uniformly hypoechoic) and shape with no evidence of a mass effect.

The right adrenal gland is borderline large, measuring 0.65 cm at the caudal pole. It is observed in its normal position between the cranial aspect of the right kidney and the caudal vena cava. It is normal in appearance (uniformly hypoechoic) and shape with no evidence of a mass effect.

IMAGING PERFORMED BY

Shari Reffi, CVT

Spleen

The spleen is subjectively normal in size (0.67 cm at the level of the hilus), echotexture is homogenous, and the splenic capsule is smooth with no irregularities. The blood flow through the hilus and splenic parenchyma appears normal. No focal parenchymal abnormalities are visualized.

HOSPITAL NAME

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Liver

The liver is large with smooth peripheral margins. The parenchyma is hyperechoic and homogenous in echotexture. The visible portions of the vasculature and biliary tract appear normal. No focal nodules or cystic lesions are observed.

The gallbladder lumen is moderately distended. The wall of the gall bladder is not thickened and has a smooth mucosal surface. Luminal contents are mild and primarily anechoic. The very proximal bile duct is visualized and somewhat prominent, but it is not visible more distally.

REFERRING VET

Dr. Kim

INVOICE

43701

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12/23/22



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Gastrointestinal

The stomach contains minimal luminal contents. It measures at a normal thickness of <0.36cm with some variability due to the presence of rugal folds. The distinction of the gastric wall layers is adequate and there is no impression of reduced peristaltic activity. No masses or focal lesions were observed.

The visualized areas of duodenum, jejunum and ileum have a uniform diameter with minimal fluid distension. Wall thickness is normal to slightly increased. Bowel loops follow a typical curvilinear path with distinct wall layering, but some areas display a prominent muscularis layer which does not display the typical 1:3 muscularis:mucosa layer ratio. Jejunum wall measures 0.24 cm. Visualized peristalsis appears appropriate. There were no focal lesions consistent with obstruction or a mass effect observed.

The ileocecal junction was visualized and exhibited normal intact wall layering and is subjectively of normal thickness. Sections of colon are visualized with formed fecal material and gas shadowing distally. There is no observed focal or generalized colon wall thickening or loss of layering.

Pancreas

The pancreas is large and hypoechoic to surrounding mesentery. There is no evidence of nodules or cystic lesions. There is evidence of regional mesenteric inflammation. Consistent with mild to moderate pancreatitis.

Free Abdomen

Evaluation of the peritoneal cavity did not reveal any evidence of effusion, or subjective lymphadenomegaly. The Medial iliac nodes appear normal and there was no evidence of a caudal aortic thrombus at the bifurcation. The omentum is of normal uniform echogenicity.

PRIMARY FINDINGS

- Hypoechoic pancreas with prominent pancreatic duct surrounded by hyperechoic mesentery – The pancreatic changes are most consistent with mild to moderate pancreatitis/pancreatic inflammation. Recommend fPLI testing and continued monitoring for improvement or possible development of a pancreatic abscess. Consider fine needle aspirate if not improving.
- Large, hyperechoic liver – Hepatic changes are non-specific and could be consistent with hepatic lipidosis, inflammatory/infectious disease, infiltrative neoplasia, or other hepatopathy. This could be consistent with a diabetic hepatopathy, lipidosis, etc.
- Prominent muscularis layer to the small intestine – The small intestinal wall changes could be consistent with an underlying inflammatory process. These types of changes can sometimes be seen in normal older cats. Correlate with clinical signs.

SECONDARY FINDINGS

- Mild bilateral adrenomegaly – This is likely a stress response. Consider reevaluation in the future.

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

The pancreas appears prominent and hypoechoic with surrounding hyperechoic mesentery. This is concerning for current pancreatitis. The liver is large and hyperechoic. This can be seen with a diabetic hepatopathy, infiltrative disease such as round cell neoplasia, or with lipidosis. Consider fine needle aspirate of the liver (provided coagulation parameters are normal). This significant of an ALT elevation would be atypical for these hepatopathies, so continued monitoring is warranted, particularly of the gallbladder and bile duct to ensure it is not progressively dilating.



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The muscularis layer of the small intestine was prominent in some views. This can be an indicator of underlying small intestine disease but can also be a normal finding in some older cats. Consider a GI panel to Texas A&M for a qualitative fPLI, TLI, cobalamin and folate to look for additional evidence of small intestinal disease.

SPECIES

Feline

Both adrenal glands measure on the high end of normal/are mildly enlarged. This could be due to the stress of illness or be consistent with adrenal dependent disease. Recommend treating the issue at hand and reevaluation of the adrenals when this patient is feeling better.

BREED

DSH

Recommend three view thoracic radiographs to evaluate for possible concurrent thoracic disease/involvement.

SEX

Spayed Female

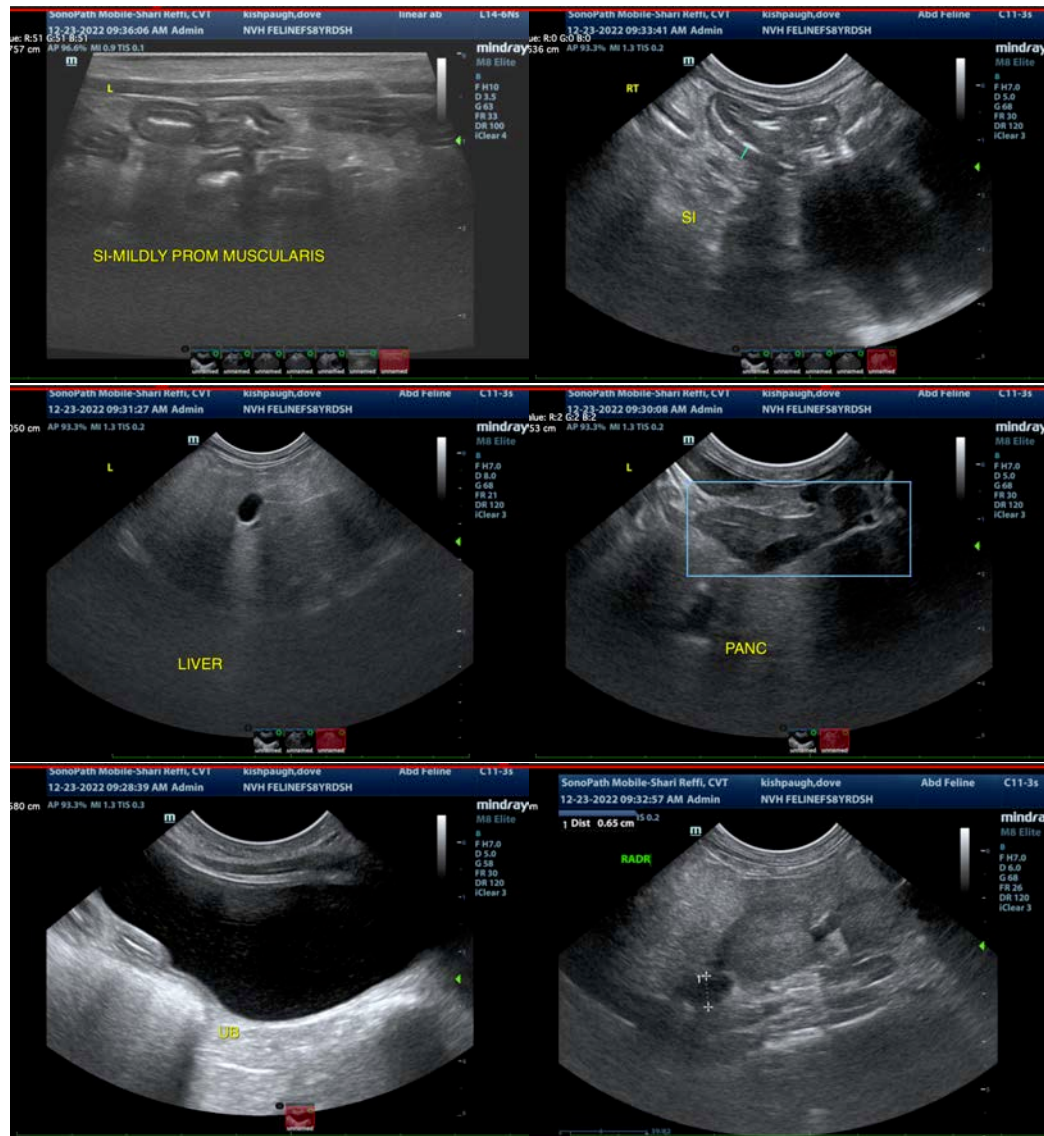
If liver values continue to rise and the patient is deteriorating despite intensive care for pancreatitis and DKA, a biopsy of the liver may be necessary. Recommend repeat ultrasound prior to this to evaluate the bile duct, pancreas, etc.

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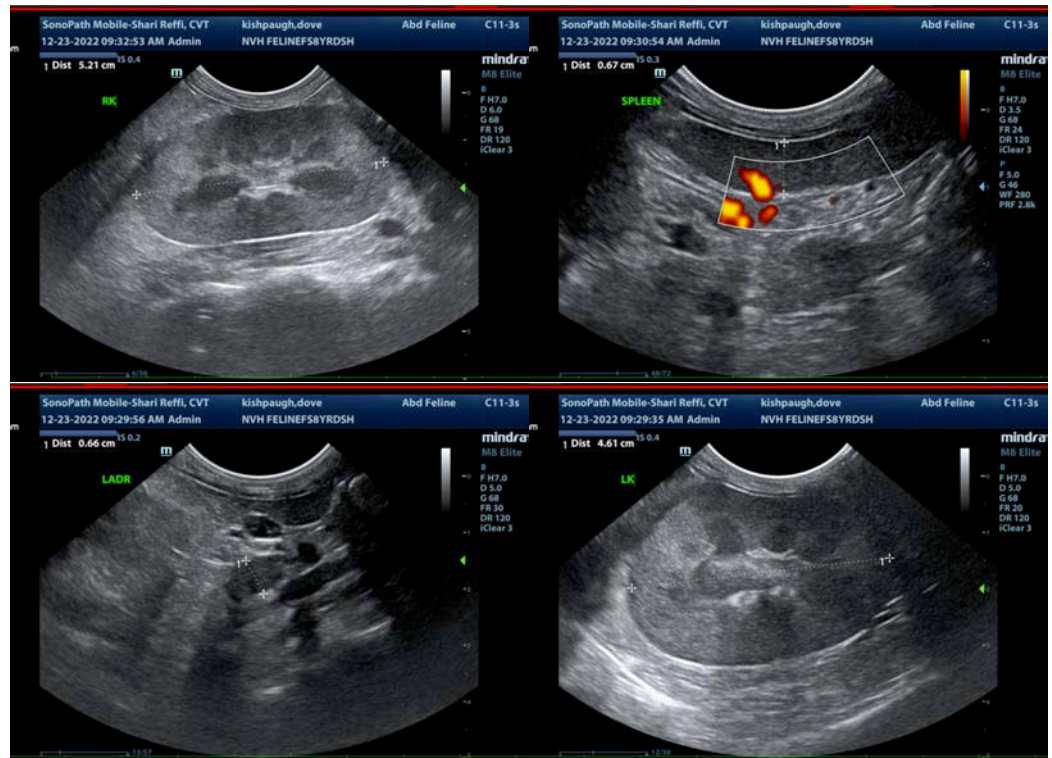
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The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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.

Kathleen Sennello DVM,MS, Diplomate ACVIM (Small animal Internal Medicine)

kathleen.sennello@sonopath.com