



**PATIENT**

Leah Falcones

**SPECIES**

Canine

**BREED**

Yorkshire Terrier

**SEX**

Spayed Female

**AGE**

10 Years

**WEIGHT**

11.6 Pounds

**INTERPRETED BY**

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

**IMAGING  
PERFORMED BY**

Kelly Vazquez

**HOSPITAL NAME**

Westwood Regional

**REFERRING VET**

Dr. Hartwick

**INVOICE**

41461

**DATE**

9/21/22

**PRESENTING CLINICAL SIGNS**

Patient with history of diabetes presents for vomiting/regurgitation (despite Cerenia/Zofran, mild pancreatitis, DKA, abdominal ascites, abdominal distention, inappetent, syringe feeding. Current meds: IVFs (Nacl & B complex), Cerenia, zofran, Famotadine, Vetsulin 2 units BID. Abnormal PE/Chem/CBC/UA Results: 9/19 CBC: HCT 28.5, WBC 19.32/neutrophilia. 9/19 Chem: BG 405, creat.0.4, BUN 22, cl. 106, ALP 279, lipase 5229. (-) ketones on 9/20.

**ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN**

**Urinary System**

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.

The left kidney has a normal shape and size (4.61 cm). Overall echogenicity is normal with mildly reduced 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.

The right kidney has a normal shape and size (4.88 cm). Overall echogenicity is slightly hyperechoic with poor 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**

The left adrenal gland is normal in size measuring 0.46 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 normal in size measuring 0.45 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.

**Spleen**

The spleen is subjectively normal in size, echotexture is homogenous, and the splenic capsule is smooth with no irregularities. The blood flow through the hilus and splenic parenchyma appears normal. There is a discrete hypoechoic nodule/mass lesion visualized within the splenic parenchyma measuring 1.33 cm x 0.74 cm.

**Liver**

The liver is large in and hyperechoic. The parenchyma is heterogenous in echotexture with subtle, indistinct focal mottling. The visible portions of the vasculature and biliary tract appear normal. There are too numerous to count, ill-defined, hypoechoic nodules throughout the parenchyma, varying in size from 0.5-1.0 cm. Additionally, there is a more discrete hyperechoic mass effect with a hypoechoic rim measuring approximately 2.06 cm x 1.61 cm. The caudate lobe of the liver appears large and irregular. It is difficult to distinguish a pancreatic mass effect from a possible hepatic mass effect in this region.

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 cystic and common bile ducts are normal/not visible.



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**Gastrointestinal**

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The stomach is moderately dilated with fluid and irregular shadowing material most consistent with normal ingesta and gas. It measures at a normal thickness of <0.7cm with some variability due to the presence of rugal folds. The distinction of the gastric wall layering is adequate and there is no impression of reduced peristaltic activity. No masses or focal lesions were observed.

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Yorkshire Terrier

Many of the visualized areas of jejunum and ileum have a relatively uniform diameter with minimal fluid distension. The proximal duodenum appears prominent, measuring 0.55 cm and is fluid dilated with lack of progressive motility and likely ileus. Wall thickness is normal. The jejunum measures as normal at 0.35 cm.

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The distal colon is visualized and appears relatively normal with non-formed fecal material. The wall measures 0.14 cm. The region of the ileocecal junction is obscured by the large pancreas and severe inflammation in the cranial abdomen. Additionally, in several images the pancreas is in very close proximity to the colon, and the cystic structure suspected to be a pancreatic abscess is adjacent to the colon wall. A colonic lesion cannot be excluded, but this is thought most likely to be pancreatic.

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**Pancreas**

The area of the right limb of the pancreas and body of the pancreas is severely inflamed. There is a large almost mass effect adjacent to the caudate lobe of the liver, which is surrounded by inflammation. This extends to a hypoechoic inflamed pancreas adjacent to the duodenum, and an adjacent hypoechoic cystic lesion measuring 1.7 cm x 2.3 cm. Findings are consistent with severe pancreatitis +/- pancreatic cyst/abscess, and a pancreatic mass effect cannot be ruled out. There is severe surrounding inflammation.

**WEIGHT**

11.6 Pounds

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**Free Abdomen**

There is a small amount of echogenic free fluid. No lymphadenopathy is noted. There is severe inflammation and hyperechoic mesentery in the right cranial quadrant of the abdomen.

**ULTRASONOGRAPHIC FINDINGS**

**IMAGING PERFORMED BY**

Kelly Vazquez

- Large, hyperechoic, irregular, severely inflamed pancreas with suspected cystic lesion (pancreatic abscess or cyst) – most consistent with severe pancreatitis +/- necrotizing pancreatitis and a pancreatic abscess/cyst. The tissue is expansive and difficult to distinguish from the liver in some areas.

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- Hypoechoic nodule in the spleen – There is a non-cavitated, hypoechoic splenic nodule visualized. Differentials include lymphoid hyperplasia, extramedullary hematopoiesis, infiltrative neoplasia, inflammation, other. Cytology or histopathology would be necessary to get a definitive diagnosis.

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- Large, hyperechoic/heterogeneous liver with ill-defined hypoechoic nodules and a focal mass effect – The diffuse hepatic changes are non-specific and could be consistent with vacuolar hepatopathy, nodular hyperplasia, inflammatory/immune-mediated disease, fibrosis, extramedullary hematopoiesis, toxic hepatopathy (e.g., copper), infiltrative neoplasia (less likely) or other hepatopathy. The diffuse changes could be consistent with a diabetic hepatopathy, but the focal mass lesion could represent a benign or neoplastic lesion.

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- Moderate fluid/ingesta within the gastric lumen and proximal duodenal fluid distention – Findings are most consistent with ileus secondary to the pancreatic disease.



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- Echogenic free fluid and severe peritonitis – If possible recommend fluid analysis and cytology to differentiate from a sterile versus a septic peritonitis.

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**INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS**

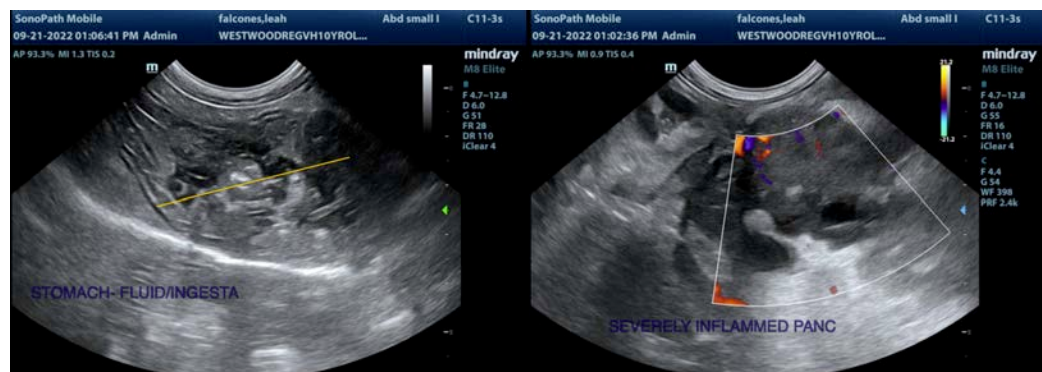
The right cranial abdomen is severely inflamed. There is a large, hypoechoic, irregular pancreas visualized associated with the duodenum in its normal position. Adjacent to this is a large hypoechoic cystic structure with expansile, poorly defined, hypoechoic tissue. I suspect this is an extension off of the pancreas with a possible abscess or cystic lesion, but this lesion is also in contact with the colon. A colonic lesion is thought less likely. Consider a fine needle aspirate of the pancreas and drainage of the pancreatic cyst/abscess. Additionally, this hypoechoic irregular tissue extends cranially and coalesces with the caudate lobe of the liver, creating a mass effect. Liver tissue in this region is abnormal, so it is difficult to differentiate a liver mass effect versus a pancreatic mass effect. Consider a fine needle aspirate in this region.

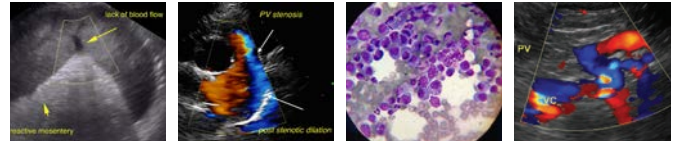
Recommend aggressive therapy for severe pancreatitis/possibly necrotizing pancreatitis with fluids, pain medications, possibly plasma, and consider a fine needle aspiration of the pancreas and pancreatic cyst as well as continued treatment of the DKA crisis. Consider reevaluation of the abdomen and pancreas every 48 hours in the hopes that as some of this inflammation improves, margins will get more distinct and it will be easier to differentiate tissues. Consider promotility medications for ileus, and trickle feeding.

There is a discrete hypoechoic nodule visualized within the spleen. Options moving forward would include a fine needle aspirate or a splenectomy with histopathology. At this time, recommend either continued monitoring and a fine needle aspirate in the future, or if coagulation parameters are normal, consider a fine needle aspirate at this time.

The liver is large and nodular. Some of this could be consistent with a diabetic hepatopathy, but there is a discrete irregular mass lesion that could likely be aspirated. Additionally, the caudate lobe is very irregular and difficult to distinguish from abnormal pancreatic tissue.

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





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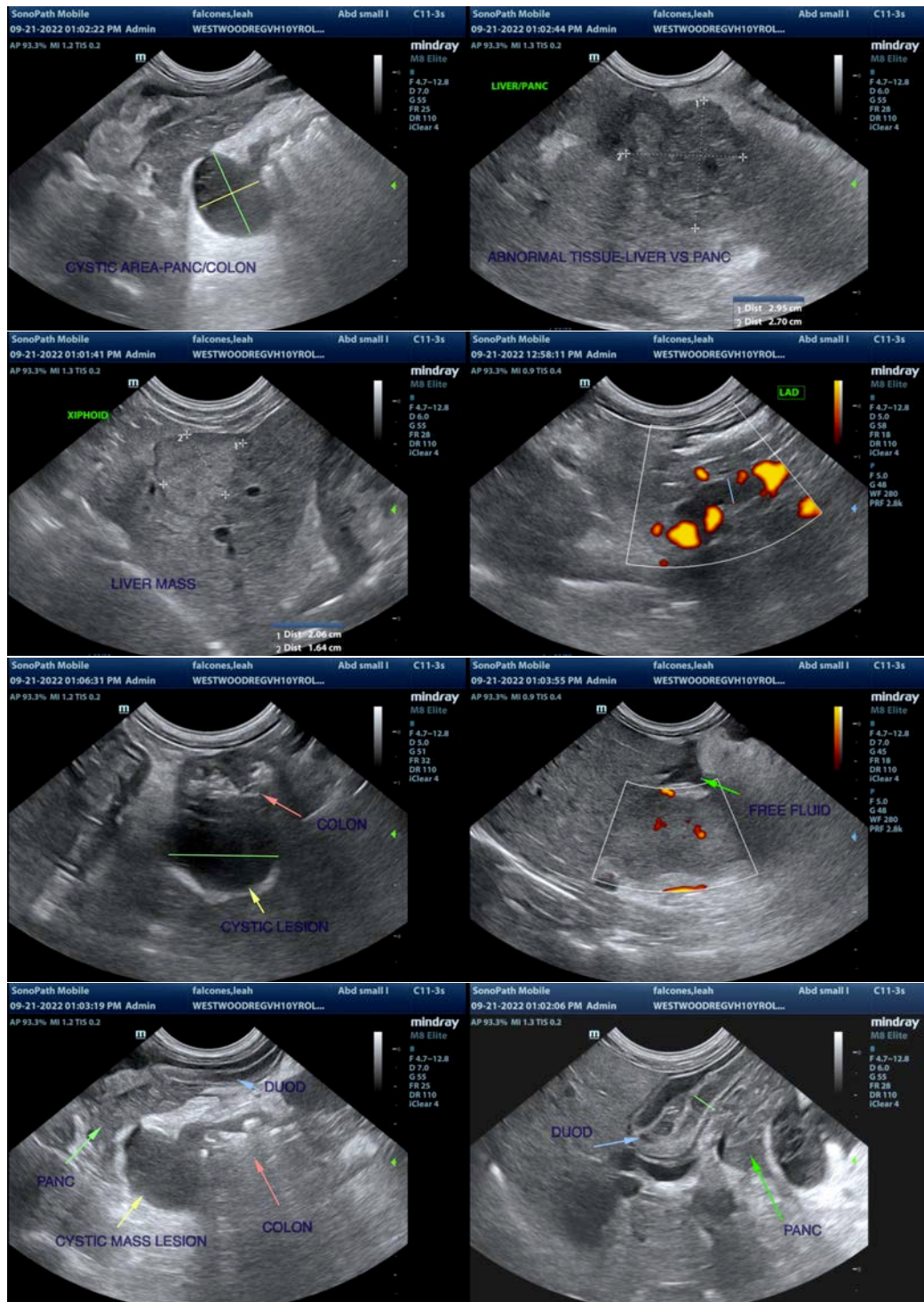
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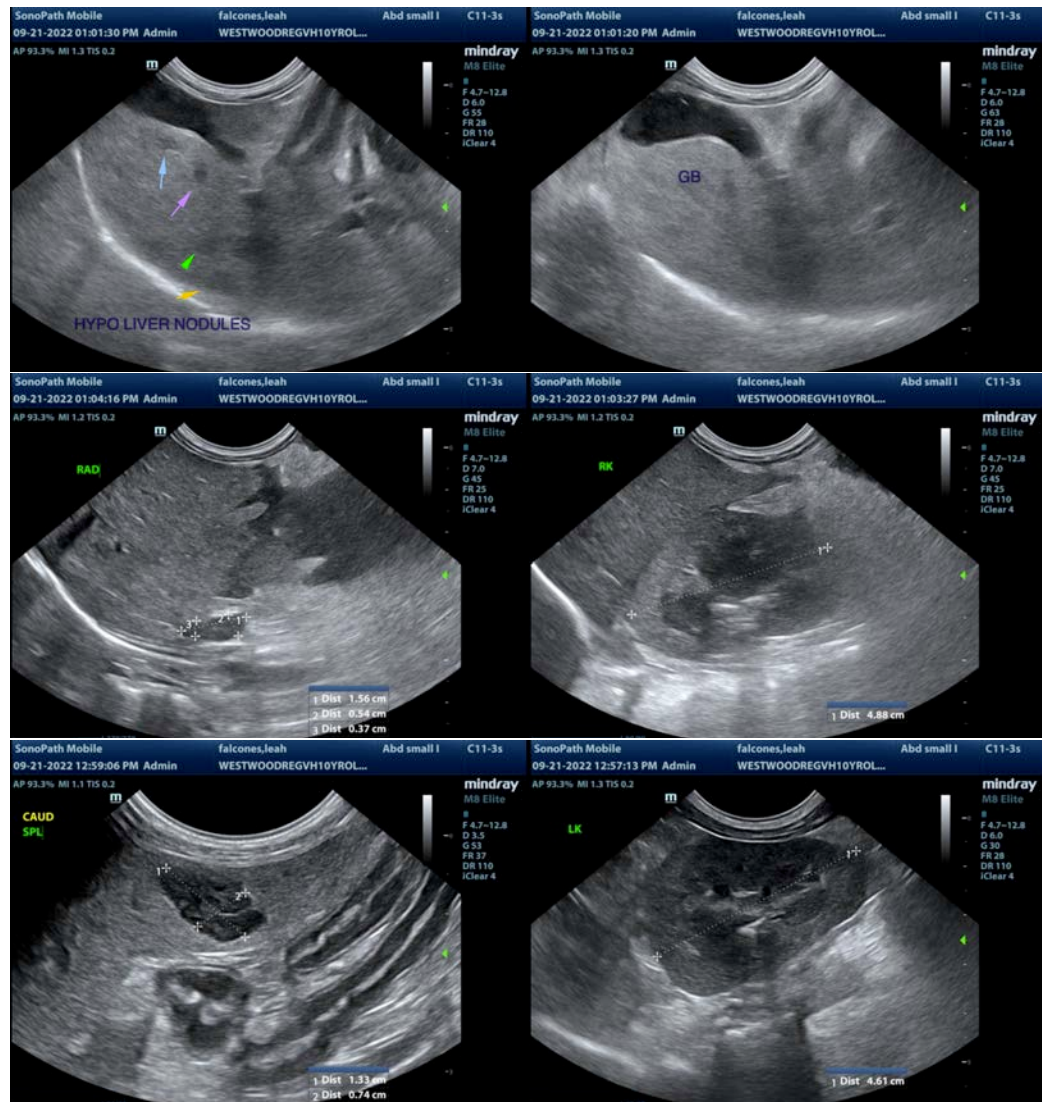
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The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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)

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