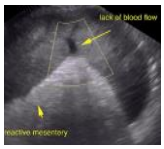
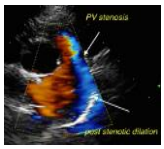
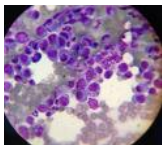
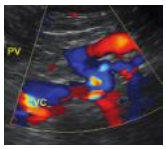
SonoPath
Clinical Sonography & Telecytology
EDUCATIONAL TELECONSULTATION SERVICES™

SonoPath.com
1-800-838-4268 info@sonopath.com

PATIENT

Nadja Harris

SPECIES

Canine

BREED

Miniature Pinscher

SEX

Spayed female

AGE

13 years

WEIGHT

11.6 pounds

INTERPRETED BY

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

IMAGING PERFORMED BY

Dr. Megan Cassels Conway

HOSPITAL NAME

Central Broward Animal Hospital

REFERRING VET

Dr. Megan Cassels Conway

INVOICE

10253ag

DATE

03/30/2022

PRESENTING CLINICAL SIGNS

History: Uncontrolled diabetes mellitus. History of chronic bronchitis and pulmonary hypertension. Recent worsening of PU/PD and decreased appetite. Elevated liver enzymes , hyperglycemia and hyperphosphatemia. P is on sildenafil, tussigon, theophylline, gabapentin, adequan, vetsulin 16U BID.

Abnormal PE/Chem/CBC/UA Results: 3/28/22 Cbc- plt cnt 615 H, inc monocytes- 1016 H Chem- AST- 135 H Alt- 480 H Alp- 417 H GTP-27 H t. Bil 0.5 H Phosph- 6.1 H Glucose 669 H Mg- 2.9 H K- 5.7 H na/k- 24 L Chloride- 24 L Psl- 199 H Chol- 506 H Hem 3+ T4- 1.7 U/a- Sp g 1032 Ph 5 L Glucose 3+ 11/4/21 Cbc- Plt cnt 579 H Plt est inc Chem- Bun- 36 H Creat 1.5 H Glucose 636 H

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. Overall echogenicity is normal with adequate corticomedullary distinction and a typical 1:3 cortex:medulla ratio. There is no evidence of perinephric inflammation or effusion. There is no evidence of pyelectasia, nephroliths, infarcts or hydroureter. Renal vasculature is normal. The left kidney measured 4.29 cm in length.

The right kidney has a normal shape and size. Overall echogenicity is normal with adequate corticomedullary distinction and a typical 1:3 cortex:medulla ratio. There is no evidence of perinephric inflammation or effusion. There is no evidence of pyelectasia, nephroliths, infarcts or hydroureter. Renal vasculature is normal. The right kidney measured 4.42 cm in length.

Adrenal Glands

The left adrenal gland is normal in size measuring 0.5 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 0.43 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.

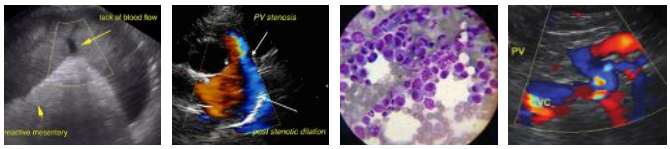
Spleen

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 hypoechoic mildly cavitated nodule visualized towards the caudal third of the spleen measuring 1.12 cm x 1.27 cm. This lesion deviates the splenic capsule.

Liver

The liver is subjectively normal in size with smooth peripheral margins. The parenchyma is hyperechoic and heterogenous 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 primarily anechoic with a moderate amount of nonorganized hyperechoic shadowing debris most consistent with mineralized sandy debris. The cystic and common bile ducts are normal/not visible.



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Gastrointestinal

The stomach contains moderate ingesta. 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 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 relatively uniform diameter with minimal fluid distension. Wall thickness is normal. Bowel loops follow a curvilinear path with distinct wall layering maintaining the typical 1:3 muscularis:mucosa layer ratio. The duodenum measured as normal (between 0.3-0.5cm in wall thickness) and the jejunum measured as normal (0.32 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 prominent and hypoechoic to surrounding mesentery. There is no evidence of nodules or cystic lesions. There is no evidence of regional mesenteric inflammation or fluid.

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.

ULTRASONOGRAPHIC FINDINGS

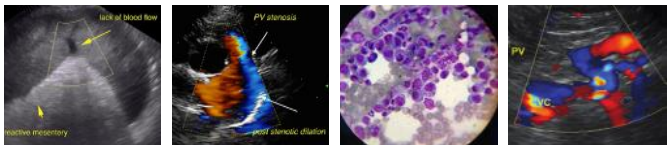
- Hypoechoic slightly cavitated splenic nodule. There is a non-cavitated, hypoechoic splenic nodule visualized. Differentials include lymphoid hyperplasia, extramedullary hematopoiesis, infiltrative neoplasia, inflammation, other. Cytology or histopathology would be necessary to get a definitive diagnosis.
- Hypoechoic prominent pancreas. The pancreatic changes are most consistent with mild pancreatitis or a recent episode of pancreatic inflammation.
- Hyperechoic heterogeneous liver. 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. This is likely consistent with diabetic hepatopathy.
- Moderate amount of mineralized gallbladder debris. The significance of the aggregated gallbladder debris is unclear. This could represent an early mucocele, cholestasis, or may be secondary to fasting.

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

No large focal lesions are visualized to explain the insulin resistance reported. There is a nodule in the spleen which is cavitated seeming to deviate the splenic capsule and should ideally be removed with a splenectomy for both diagnostic and therapeutic purposes (sometimes these peripheral lesions can rupture). If a more conservative route is desired, you could consider a FNA or continued monitoring with ultrasound.

Consider three view thoracic radiographs to rule out concurrent thoracic disease/involvement.

This patient is on a very high dose of insulin (3u/kg BID) and if there is a lack of response this qualifies as insulin resistance. I have in the past I have found Min Pins to be challenging diabetics particularly if they are hypothyroid, hyperlipidemia, etc. This pet has multiple medical issues which complicate management. Some things to consider would be that this pet could be Somogyi-ing, placing a freestyle



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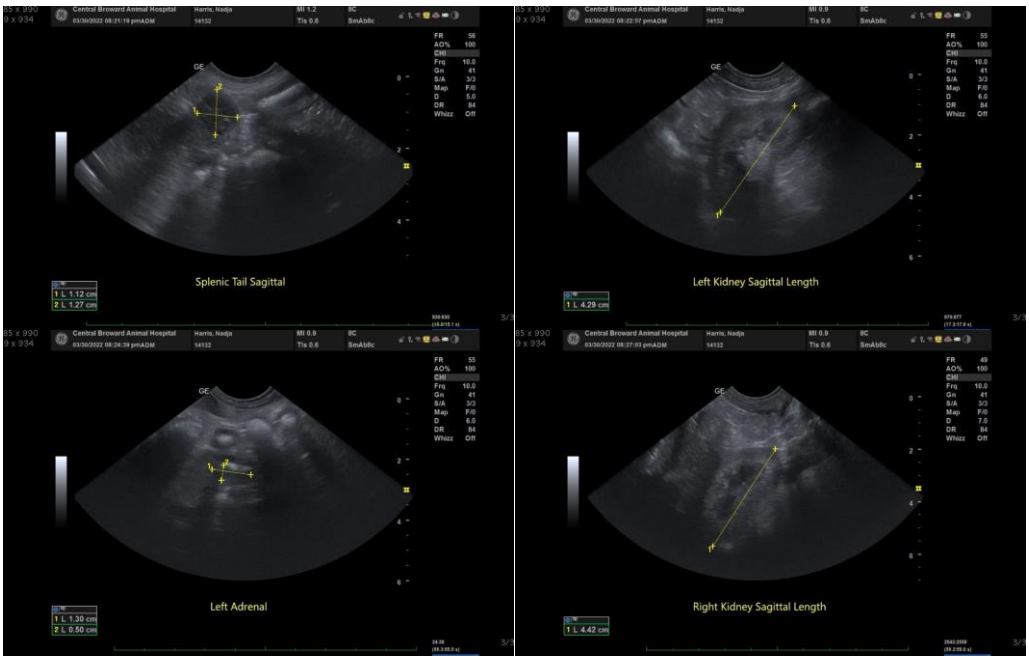
Libre can sometimes be helpful in identifying these patients. Use caution in interpreting and making dosage adjustments based on individual readings as there is a significant margin of error but patterns can often be established.

Evaluation of the response of insulin can sometimes be helpful-is there a complete lack of response, is there too short of an action or a delayed onset of an action as this can sometimes help you adjust your insulin type, protocol etc. I have had many difficult diabetics that I have needed to use an ultra-short acting insulin with a longer acting insulin to help get them regulated. Referral to a veterinary internist may be helpful.

Additionally consider the possibility that the pulmonary disease is not adequately controlled (if it can be) and that counterintuitively this pet may need an ultra-low dose of steroids, ideally inhaled, to help reduce the symptoms which could be causing a stress effect and insulin resistance. Ideally an airway wash or bronchoscopy would be warranted to confirm there is no component of infection involved.

Consider diet closely as some pets can be very sensitive to dietary manipulation particularly if they are getting a large amount of treats, high carbohydrate snacks etc. Also closely monitor for the development of UTIs as this can throw off glycemic control.

The pancreas is somewhat prominent in some images. This can be consistent with chronic inflammation or previous episodes of inflammation. You could consider a GI panel to Texas A&M to include PLI/TLI/Cobalamin/Folate.



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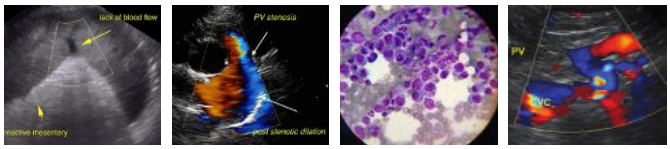

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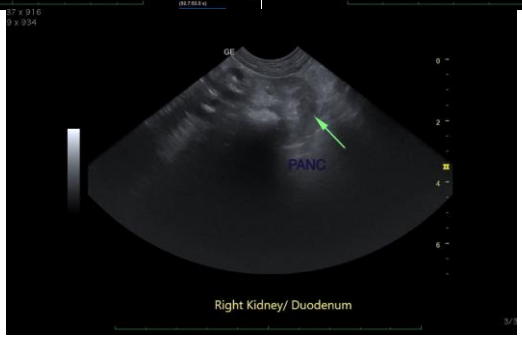

The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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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