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Clinical Sonography & Telecytology
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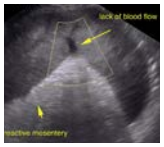
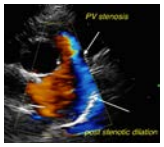
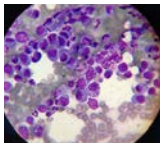
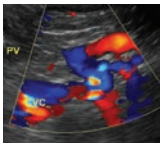

SonoPath.com™
1-800-838-4268 info@sonopath.com

PATIENT

Autumn Olsen

SPECIES

Canine

BREED

Cocker Spaniel

SEX

Spayed Female

AGE

11 Years

WEIGHT

25 Pounds

INTERPRETED BY

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

IMAGING PERFORMED BY

Kelly Vazquez

HOSPITAL NAME

Ho-Ho-Kus VH

REFERRING VET

Dr. Brittany Scott

INVOICE

45718

DATE

3/7/23

PRESENTING CLINICAL SIGNS

Patient presents for a grade2/6 heart murmur; thoracic radiographs were clear), low albumin, borderline kidney disease. Current med: hydrocodone.

Abnormal PE/Chem/CBC/UA Results: HCT 35%, albumin 2.4, BUN 60, creat. 1.4. USG: 1.020, UPC 1.9.

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 (5.63 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.

The right kidney has a normal shape and size (5.47 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 0.65 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 0.52 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. No focal parenchymal abnormalities are visualized.

Liver

The liver is subjectively normal in size, and echogenicity with smooth peripheral margins. The parenchyma is heterogenous in echotexture with subtle, indistinct focal mottling. The visible portions of the vasculature and biliary tract appear normal. There are numerous hyperechoic foci in the parenchyma of the liver that are most consistent with mineralization of the intrahepatic bile ducts.

The gallbladder lumen is moderately distended. The wall of the gall bladder is not thickened and has a smooth mucosal surface. There is a moderate amount of dependent irregular debris. The cystic and common bile ducts are normal/not visible.

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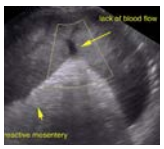
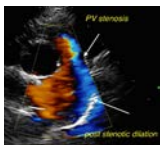
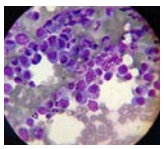
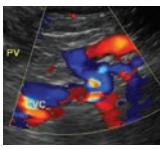

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Gastrointestinal

The stomach contains minimal luminal contents. 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. Duodenum wall measures 0.45 cm. Jejunum wall measures 0.33 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 as compared to the surrounding isoechoic mesentery. There is no evidence of nodules or cystic lesions. There is no evidence of regional mesenteric inflammation or fluid.

Free Abdomen

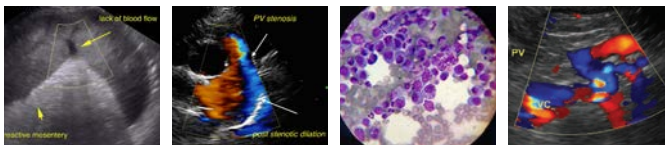
Evaluation of the peritoneal cavity did not reveal any evidence of effusion, or subjective lymphadenomegaly. The Medial iliac nodes appear normal and there was no evidence of a caudal aortic thrombus at the bifurcation. The omentum is of normal uniform echogenicity.

ULTRASONOGRAPHIC FINDINGS

- Decreased corticomedullary distinction in both kidneys – Mild loss of corticomedullary distinction in both kidneys could be consistent with chronic degenerative disease or interstitial nephrosis.
- Hypoechoic, prominent pancreas – The pancreatic changes are most consistent with mild pancreatitis or a recent episode of pancreatic inflammation.
- Heterogeneous liver with mineralization of some areas of the intrahepatic bile ducts – 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. Biliary mineralization has been associated with chronic inflammation.
- Irregular, dependent debris within the gallbladder – The significance of the aggregated gallbladder debris is unclear. This could represent an early mucocele, cholestasis, or may be secondary to fasting but seems unlikely to be causing a current issue. Recommend continued monitoring. I cannot rule out the possibility of irregular tissue in the region of the debris (polyps, etc.).

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

The changes observed in the kidneys are most consistent with chronic progressive renal disease. There is no evidence of an obstruction, mass effect, calculi, etc. Recommend workup for a protein losing enteropathy including a blood pressure evaluation, possible infectious disease screening (lyme, heartworm, etc.), and 3-view thoracic radiographs. Medical management may need to be considered.



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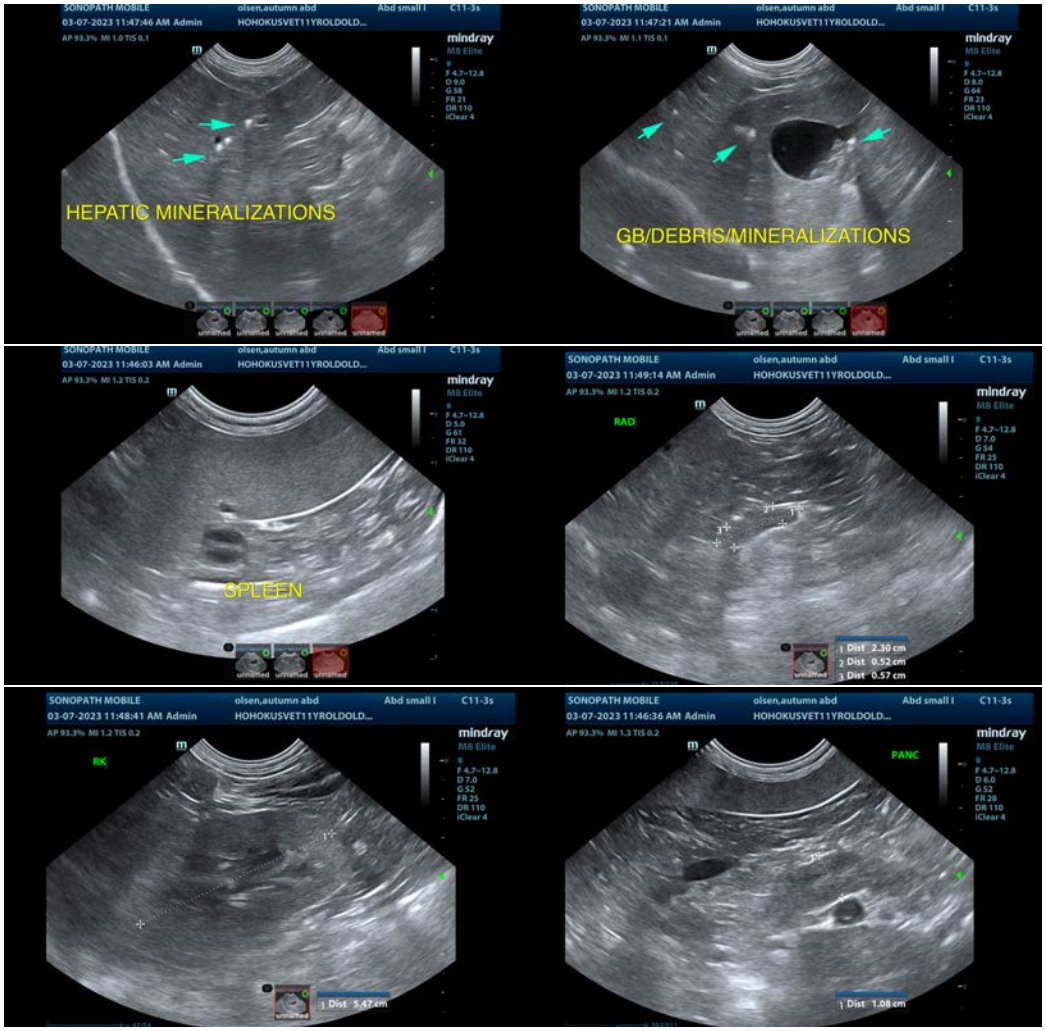
I don't see any significant GI lesions to attribute to the hypoalbuminemia reported. There is some protein loss from the kidneys, but typically it would be much greater than this to see systemic hypoalbuminemia. Additionally, the liver is somewhat heterogeneous with some intrahepatic biliary mineralizations. Consider a liver function test to rule out liver dysfunction as an additional source for the low protein levels. You could consider a fine needle aspirate of the liver and possible Ursodiol therapy, but if liver enzymes aren't elevated, this is questionable.

Additionally, the debris within the gallbladder appears somewhat irregular, and it is difficult to tell if some of this could be polypoid type tissue as well. Consider reevaluation of the gallbladder in 2-3 months.

If there is still concern for possible GI disease as a contributing source for the hypoalbuminemia, you could consider a GI panel to Texas A&M for a qualitative PLI, TLI, cobalamin, and folate to further evaluate.

The pancreas is somewhat prominent, but not overtly inflamed. This could be consistent with mild current inflammation or previous episodes of inflammation. Additionally, consider a baseline cortisol to screen for Addison's.



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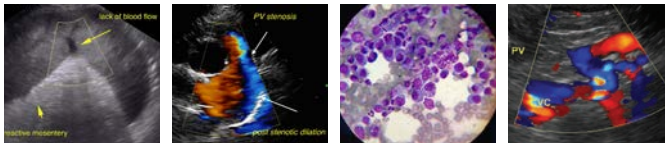

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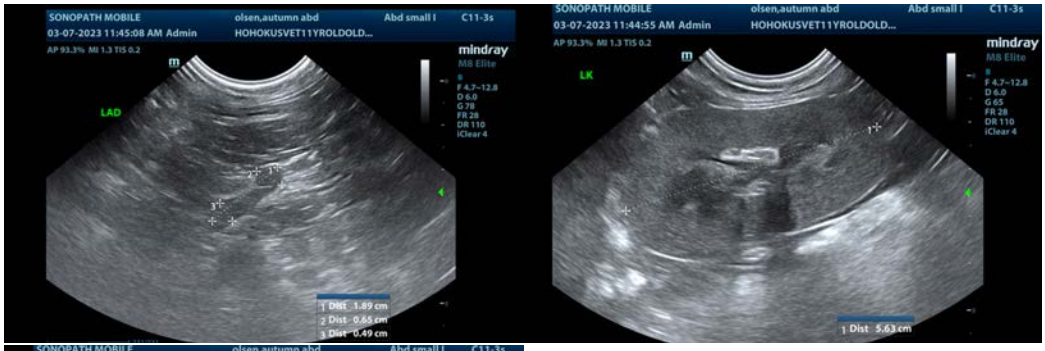

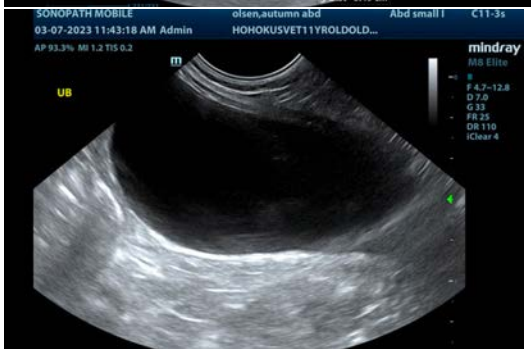

The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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