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DATE PRESENTING CLINICAL SIGNS

7/11/23 Patient presents for evaluation of worsening azotemia. Cardiac murmur grade 4/6 PMI sternal. BP 150 mmHg.

PATIENT

Goose Reynolds Current Medications: None.
Date of Previous IntraPet Ultrasound: 12/14/2020. See attached.
Sedation: Not required to complete full diagnostic ultrasound.
Stat Report: Not requested.

SPECIES

Feline Imaging Performed By: Andi Parkinson, BS, RDMS.

ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN

BREED

Urinary System

DSH

The urinary bladder is moderately 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.

SEX

Spayed Female

Kidneys are bilaterally small, irregular and diffusely echogenic with decreased corticomedullary distinction and poor visualization of internal architecture. There is no pyelectasia noted and no mineral is observed. The left kidney measures 2.85 cm. The right kidney measures 2.71 cm.

AGE

11/29/13

Adrenal Glands

The areas of the adrenals glands are examined without evident adrenal gland pathology.

WEIGHT

6.7 Pounds

Spleen

The 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). No focal nodules or masses are observed. Splenic vasculature appears normal.

INTERPRETED BY

Beth Johnson, DVM
DACVIM

Liver

The liver is subjectively normal in size with normal smooth curvilinear peripheral contour. Parenchyma is appropriately hypoechoic to the spleen in echogenicity and appropriately mildly coarse and homogenous in echotexture. In the deep right liver, an approximately 1.0 cm in diameter nodule/mass of mixed echogenicity is noted, primarily hyperechoic in echogenicity but with multiple cysts/septations. Visible vasculature and biliary tree appear normal without distension or congestion.

HOSPITAL NAME

Perry Hall AH

REFERRING VET

Dr. Miller

Gallbladder is moderately distended with anechoic bile as well as suspended and gravity dependent echogenic debris. There is an approximately 1.0 cm in diameter echogenic "ball of sludge" that appears mobile with different views and not adhered to a wall, as would be expected with a nodule versus other. The wall is smooth without visible thickening. There is no evidence of cystic or CBD dilation. There is no evidence of effusion or inflammation.

INVOICE

43892

Gastrointestinal

The stomach wall is normal in thickness (canine < 0.5 cm and feline < 0.4 cm) and layering. The lumen of the stomach is empty with no evidence of obstruction, foreign material or infiltrative disease. The pylorus does contain some echogenic non-shadowing luminal contents as well as some subtle distal progressively shadowing material that could and likely does represent normal ingesta but can sometimes be seen with a hairball density. This finding should be interpreted in combination with clinical signs that support pathology versus normal ingesta.

The visible small intestine demonstrates areas of mildly thick muscularis layer relative to mucosa (disruption of the normal 1:3 muscularis:mucosa ratio). Small intestinal submucosa is slightly irregular, thick and hyperechoic, without evident loss of layering appreciated. The lumen is empty with no evidence of obstruction or foreign material.

The visible colon is normal in wall thickness (< 0.2 cm) and layering. Contents are consistent with normal formed feces and gas.

Pancreas

The observed pancreas appears appropriately isoechoic to surrounding omental fat. The capsule is mildly irregular in shape. Parenchyma is mildly heterogenous and coarse. There is no visible pancreatic duct dilation. There is no evidence of active peripancreatic inflammation.

Free Abdomen

There is no evidence of free peritoneal effusion noted in these images.

The mesenteric lymph nodes are prominent in size with swollen capsular contour. Normal elongated shape (length to width ratio) is maintained. There is no loss of parenchymal detail.

PRIMARY FINDINGS

- **Chronic Kidney Disease** – This appearance of the kidneys is consistent with chronic kidney disease such as chronic glomerular or interstitial nephritis, chronic pyelonephritis, etc.
- **Feline biliary cystadenoma** – In a senior cat, this liver lesion is most consistent with a/multiple benign biliary cystadenoma(s). Malignancy cannot be ruled out but is considered less likely given lack of clinical signs and/or laboratory changes.
- **Moderate gallbladder debris** - Cholecystic debris is of unknown clinical significance. It can be seen with biliary stasis from fasting or illness, however, it can also be associated with hepatobiliary disease in cats 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.
- **Mild/subtle inflammatory bowel disease (IBD) pattern** – Thick muscularis has been reported with infiltrative bowel disease including both benign inflammatory disease as well as infiltrative neoplasia such as lymphoma. No aggressive lymphadenopathy, loss of layering, etc. is noted to make lymphoma more probable, but lymphoma cannot be definitively ruled out without tissue sampling.

SECONDARY FINDINGS

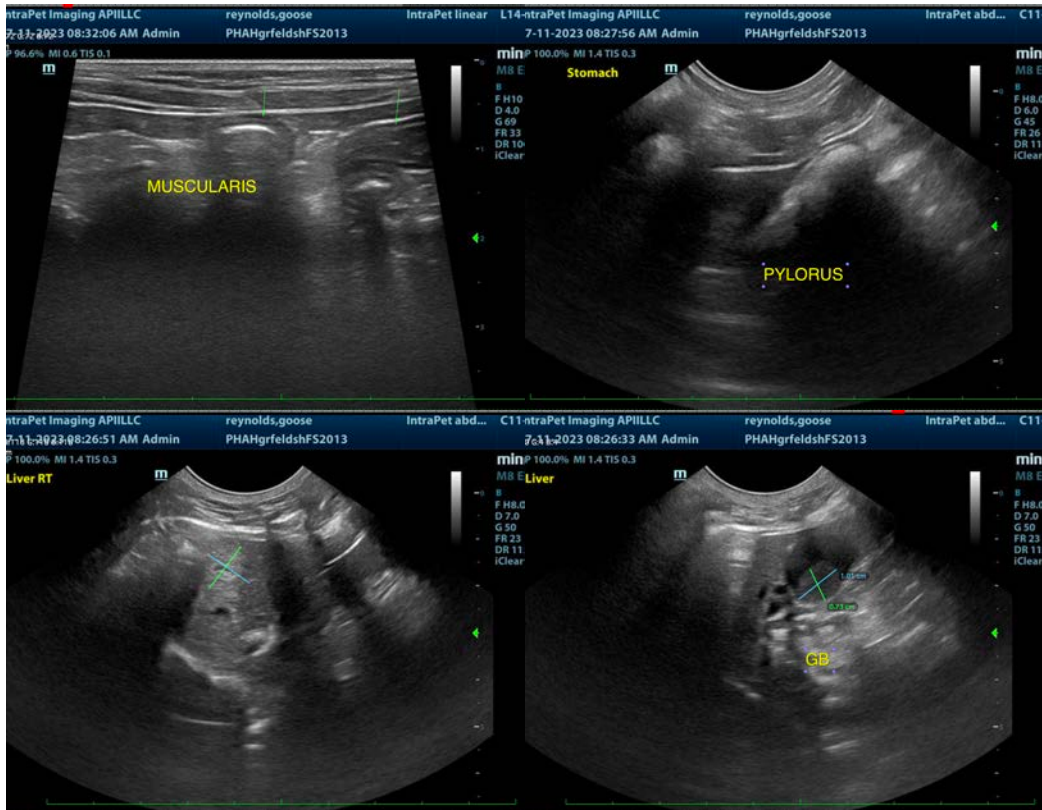
- **Pancreatic age-related remodeling** – Mild irregularities are consistent with benign age-related change. Low-grade smoldering chronic pancreatitis cannot be ruled out and should be suspected in the face of appropriate clinical signs.
- **Reactive mesenteric lymph nodes** – infiltrative neoplastic disease cannot be ruled out but is considered less likely.

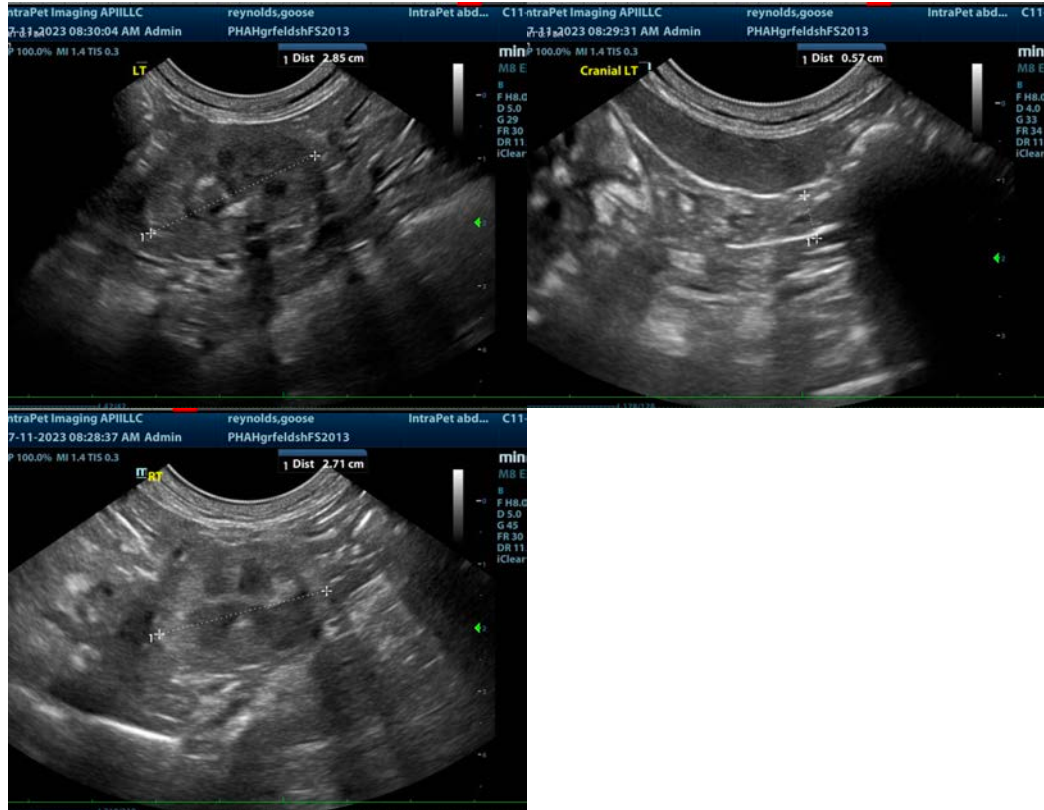
INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

Overall, while there is a variety of pathologic changes, most are relatively benign changes and expected in a senior patient, and not significantly changed from the ultrasound several years ago, additionally likely not related to the progressive azotemia. Having said that, if clinical signs and/or laboratory changes are suggestive of cholangiohepatitis, further suspicion of the gallbladder sludge would be discussed, and/or if this patient exhibits gastrointestinal signs, further recommendations regarding possible inflammatory bowel disease would be discussed.

At this time, however, given the progressive azotemia, if not recently evaluated and to help determine whether or not medical management of concurrent proteinuria is recommended, a urinalysis and, if indicated based on urinalysis results, urine culture are recommended. If protein is present in an otherwise quiet sediment, protein quantification with a urine protein to creatinine ration is recommended.

Beyond that, continued medical management and monitoring of the chronic kidney disease is recommended, as is reportedly in place.





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.

Beth Johnson, DVM, DACVIM
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