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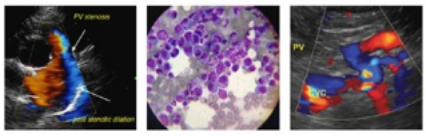

SonoPath
Clinical Sonography & Telecytology
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PATIENT

Gracie Koerber

SPECIES

Canine

BREED

Yorkie Poo

SEX

Spayed Female

AGE

13 yr. 5 mos.

WEIGHT

12.11 lbs.

INTERPRETED BY

Beth Johnson, DVM DACVIM

IMAGING PERFORMED BY

Amy Mayhew, LVT

HOSPITAL NAME

SVS Imaging MI

REFERRING VET

Hardwick Veterinary Clinic

INVOICE

10419

DATE

8/15/2023

PRESENTING CLINICAL SIGNS

Urinary incontinence. Before I saw Gracie, she was first managed as a UTI w/ Baytril based on cocci, rods, WBCs on UA. She came in for wellness a few weeks later and when we went to grab a cysto for recheck UA there was a mass effect seen in the bladder via Butterfly U/S, so we did not collect a sample. Next, we did an X-ray, which did not reveal any stones, but did show hepatosplenomegaly. Discussed with the owner concern for mass in the bladder, so rec'd an AUS as the next step to try and ID and quantify the mass effect. Gracie has consistently been incontinent, often having accidents at night. When I last spoke with the owner, however, she had gone 3 nights without an accident. The owner expressed concern over starting Proin due to association with cardiac disease in people and Gracie's III/VI heart murmur. Otherwise, Gracie has not had any other clinical signs to report.

Abnormal PE/Chem/CBC/UA Results: III/VI systolic heart murmur radiology report from x-rays attached photo of butterfly u/s screen from cysto attached.

ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN

Urinary System

Urinary bladder is adequately distended with primarily anechoic contents and occasional echogenic non-shadowing debris. Apical urinary bladder wall is diffusely thick. Additionally, extending from the ventral apical wall is a 0.5 cm x 0.6 cm hyperechoic irregular polypoid lesion. Mucosa is hyperechoic and irregular. No cystoliths are observed. The trigone and visible pelvic urethra are normal thickness with a smooth mucosal surface. The wall measures 0.34 cm thick.

Kidneys are overall normal in size and shape with smooth peripheral margination. A normal 1:3 cortex to medulla ratio is maintained. The medulla and cortices are uniform in texture with some mild increased cortical echogenicity and mild loss of corticomedullary distinction, expected in this age patient. Multiple punctate cortical cysts noted bilaterally. Trace pyelectasia bilaterally was noted. There is no evidence of mineral or infarcts observed. The left kidney measures 4.05 cm. The right kidney measures 3.88 cm.

Adrenal Glands

The right adrenal gland is normal in size (cranial 0.4 cm, caudal 0.53 cm), shape and contour. Corticomedullary structure is unremarkable. Visible surrounding vasculature appears normal.

The left adrenal gland is normal in size (cranial 0.41 cm, caudal 0.48 cm), shape and contour. Corticomedullary structure is unremarkable. Visible surrounding vasculature appears normal.

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.

Liver

Liver is subjectively enlarged (swollen contour) without disruption of architecture. It has a normal homogenous echotexture. Parenchyma is diffusely hyperechoic characterized by less prominent than normal portal vein walls and increased echogenicity relative to the spleen and falciform fat. No focal lesions are observed. Visible vasculature and biliary tree appear normal without distension or congestion.

The gallbladder is non-distended in size. The wall is smooth without visible thickening. Luminal contents are primarily anechoic. There is no evidence of cystic or common bile duct dilation.

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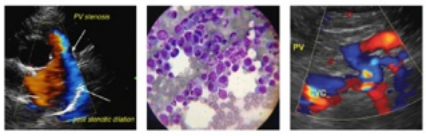

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Gastrointestinal

The visible stomach wall is normal in thickness and layering. The lumen of the stomach is mildly distended with very echogenic reverberation artifact from intraluminal gas. There is no evidence of obstruction, foreign material, or infiltrative disease; however, complete visualization of far wall is partially inhibited by gas. Pyloric outflow tract appears patent.

The visible small intestines are normal in wall thickness and layering (canine duodenum < 0.5 cm and feline duodenum < 0.4 cm; other < 0.3 cm). Small intestinal motility appears adequate (1-3 contractions per min). The lumen of the small intestine 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.

There is no apparent lymphadenopathy noted in these images.

ULTRASONOGRAPHIC FINDINGS

- **Chronic Cystitis -** Urinary bladder wall changes are most consistent with chronic cystitis in addition to apical polypoid lesion that trends in appearance toward benign. Infiltrative neoplasia cannot be ruled out but is considered much less likely.
- Age related kidney changes with trace pyelectasia bilaterally.
- **Hyperechoic hepatomegaly** -This appearance is non-specific and most consistent with a benign steroid (endocrine) or vacuolar hepatopathy or reactive or idiopathic hepatopathy. Inflammatory and/or infiltrative disease (such as round cell neoplasia) are also possible but considered less likely.
- **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.

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

While the urinary bladder wall changes trend in appearance toward benign, urinalysis and urine culture, if indicated based on urinalysis results, are recommended. Submission of urine to look for BRAF gene mutation, which is associated with urinary bladder/prostate cancer, could be considered. Other diagnostic options include traumatic catheterization, fine needle aspirate (with small risk of tumor seeding/trailing) or cystoscopy for further sampling.

Ruling out a urinary tract infection as a contributing factor to this patient reported incontinence, as recommended above, as well as further evaluating underlying causes of possible polyuria and

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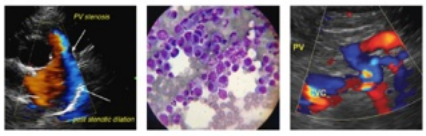

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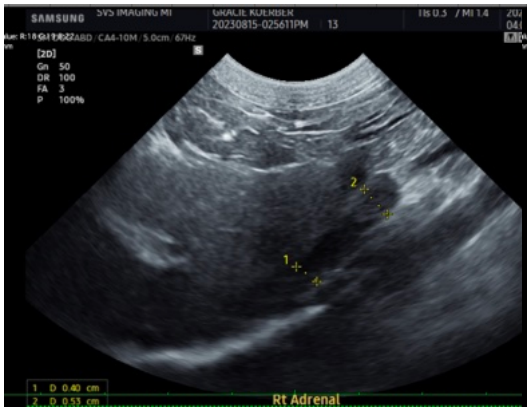
polydipsia as contributing factors to this patient reported incontinence could all be considered prior to empirically medically managing incontinence given reported owner concerns.



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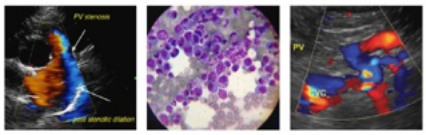

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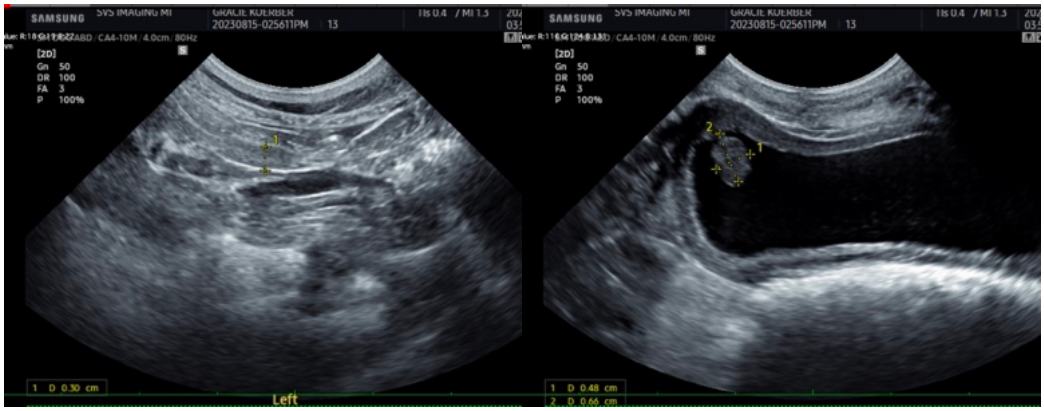

The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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.

Beth Johnson, DVM, DACVIM
info@sonopath.com