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Clinical Sonography & Telecytology
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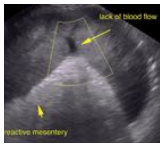
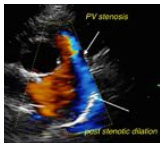
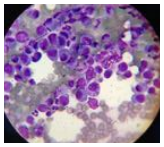
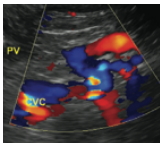





SonoPath.com
1-800-838-4268 info@sonopath.com

PATIENT
Jack Monaghan

SPECIES
Canine

BREED
Pug Mix

SEX
Neutered male

AGE
13 years

WEIGHT
25 lbs

INTERPRETED BY
Beth Johnson, DVM DACVIM

IMAGING PERFORMED BY
Diane McFadden, RVT

HOSPITAL NAME
Budd Lake AH

REFERRING VET
Dr. Verhalen

INVOICE
39928

DATE
10/5/22

PRESENTING CLINICAL SIGNS

History: bloody urine, straining to urinate; rads clear of obvious stones . Is diabetic, on vetsulin.
Abnormal PE/Chem/CBC/UA Results: ALKP 941, neutrophilia 12264; UA: blood present, WBC elevation, USPG 1.030

ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN

Urinary System

Urinary bladder is adequately distended with anechoic contents. No masses, inflammatory changes, echogenic sediment or cystoliths are observed. The urinary bladder and visible pelvic urethra are normal in thickness with a smooth mucosal surface.

The prostate is irregularly enlarged measuring 2.8 + cm wide with a heterogenous parenchyma, mineralization and cystic areas throughout with poor demarcation from the surrounding tissue and encroachment on the neck of the urinary bladder and trigone resulting in a thick, heterogenous, irregular appearance to the trigone. The remainder of the urinary bladder wall is normal in appearance. The contents are primarily anechoic with some suspended echogenic debris within the lumen of the urinary bladder.

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. There is no evidence of pyelectasia, mineral or infarcts observed. The left kidney measured 5.77 cm and the right kidney measured 5.91 cm.

Adrenal Glands

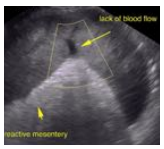
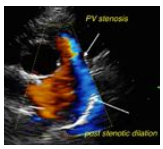
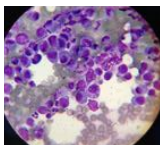
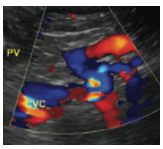
Adrenal glands are plump/swollen in size. Normal shape and contour are maintained without evidence of capsular invasion. Corticomedullary structure is unremarkable. Visible surrounding vasculature appears normal. The left adrenal gland measured 1.8 cm long, 0.47 cm at the cranial pole and 0.54 cm at the caudal pole. The right adrenal gland measured 1.8 cm long, 1.1 cm at the cranial pole and 0.73 cm at the caudal pole.

Spleen

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). A 1.2 cm in diameter, mixed, primarily hypoechoic to anechoic nodule/mass resulting in a slight capsular bulge was noted. Splenic vasculature appears normal.

Liver

Liver is subjectively enlarged with mildly irregular margins. Parenchyma is heterogenous characterized by multiple poorly defined hypoechoic nodules within otherwise hyperechoic liver parenchyma. Visible vasculature and biliary tree appear normal without distension or congestion.

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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.

Gastrointestinal

The visible stomach wall is normal in thickness and layering. The lumen of the stomach is mildly distended with echogenic non-shadowing luminal contents and gas consistent with normal ingesta. There is no evidence of obstruction, foreign material or infiltrative disease. Pyloric outflow tract appears patent.

The visible small intestines are normal in wall thickness and layering. Small intestinal motility appears adequate (1-3 contractions per min). The lumen of the small intestine is empty with no evidence of obstruction, foreign material or infiltrative disease.

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. Visible capsule is smooth and normal in contour. Visible pancreatic parenchyma is homogenous and unremarkable. There is no visible pancreatic duct dilation. There is no evidence of active peripancreatic inflammation.

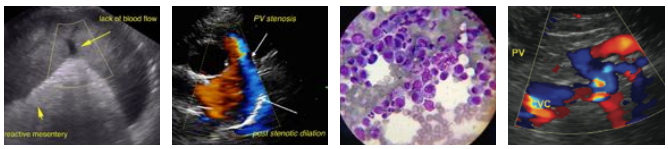
Free Abdomen

There is no evidence of peritoneal effusion or pericardial effusion noted in these images. Aggressive, medial, iliac lymph nodes are enlarged with swollen irregular capsular contour and loss of normal length to width ratio (rounded in shape). Nodes are hypoechoic with loss of normal parenchymal detail.

ULTRASONOGRAPHIC FINDINGS

Primary Findings

1. Prostate and urinary trigone changes are most concerning for infiltrative neoplasia such as transitional cell carcinoma vs other. Benign inflammatory disease (cystitis/prostatitis) cannot be ruled out but is considered less likely given the location and appearance of the tissue.
2. Aggressive medial iliac lymphadenopathy.
3. Hyperechoic splenic nodules – most consistent with benign myelolipomas. Other differentials such as fibrosis or calcification caused by old hematomas or infarcts, chronic inflammation, granulomatous disease or metastatic disease cannot be ruled out, especially given the suspicion for prostatic/urinary bladder neoplasia and suspected metastatic lymphadenopathy.
4. These changes are most consistent with benign processes such as nodular hyperplasia, steroid (vacuolar) hepatopathy, extramedullary hematopoiesis or possibly chronic inflammatory disease and less commonly infiltrative round cell or metastatic neoplasia.



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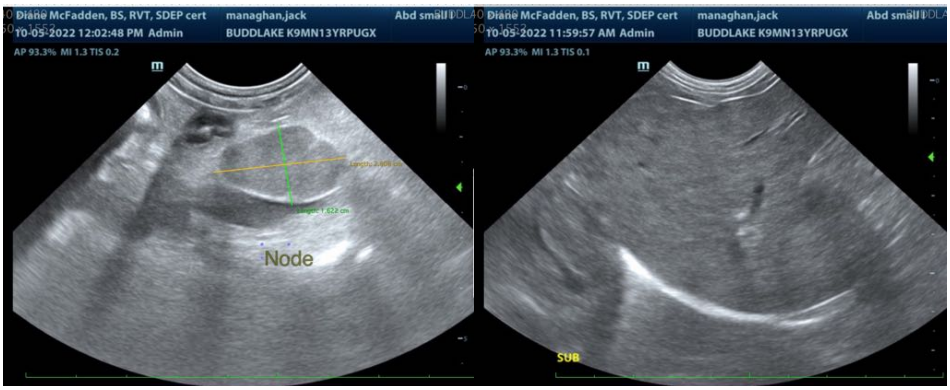
Secondary Findings

1. Bilateral adrenomegaly – consistent with adrenal hyperplasia secondary to pituitary dependent hyperadrenocorticism vs stress or normal variant. Interpret in combination with clinical signs of hyperadrenocorticism.
2. Gallbladder debris - Cholecystic debris is of unknown clinical significance. It can be seen with biliary stasis from fasting or illness. Cholecystic debris is not necessarily related to hepatobiliary disease. Echogenic bile is most commonly an incidental finding in dogs 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.
3. Age related renal changes.

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

1. Three view thoracic radiographs are recommended for further assessment of cardio-pulmonary status as well as to further evaluate for any evidence of metastatic disease, if not recently evaluated.
2. 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 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.
3. FNA of the medial iliac lymph nodes as well as the splenic nodule are recommended for further evaluation of possible metastatic disease if the patient's coagulation status is appropriate.
4. The gallbladder, liver and adrenal gland changes are suggestive of concurrent hyperadrenocorticism, likely pituitary dependent in nature if present. However, further evaluation of possible hyperadrenocorticism is not recommended in the face of ongoing prostatic/urinary bladder wall pathology and illness. In the meantime, empirical broad spectrum antibiotics ideally based on culture and sensitivity results if possible and anti-inflammatories may be considered to help alleviate clinical signs while awaiting diagnostic results.



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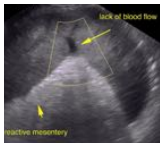
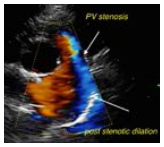
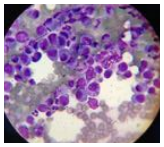
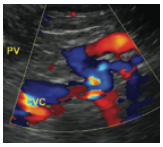

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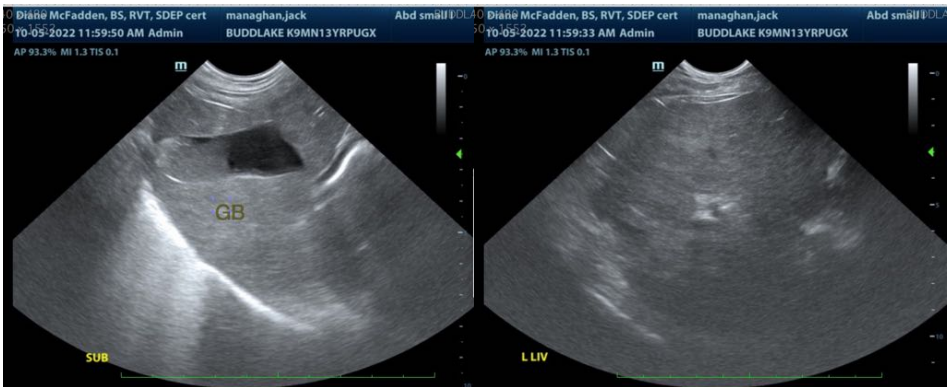

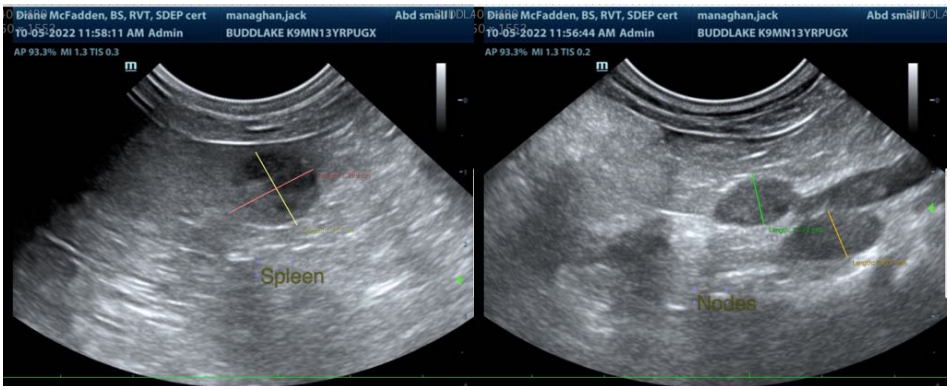

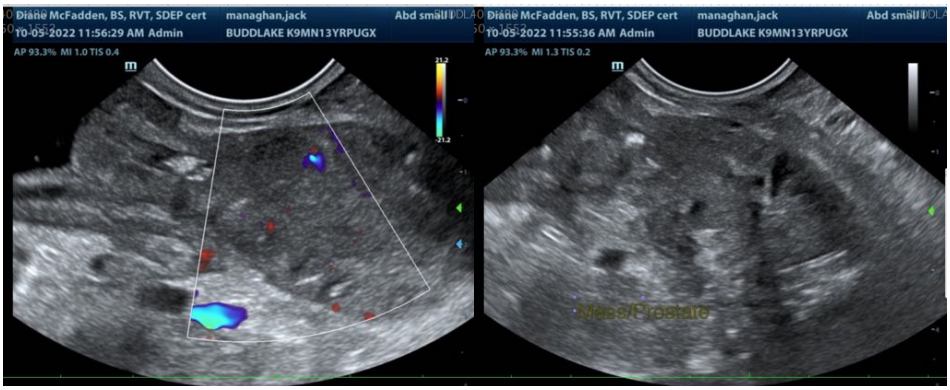

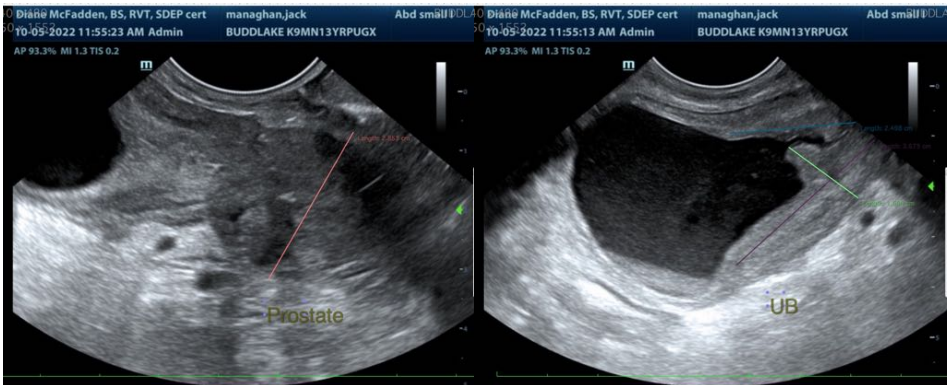

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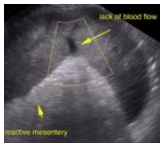
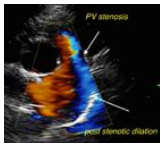
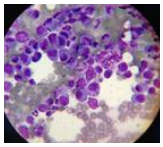
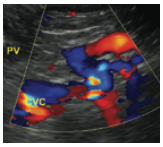

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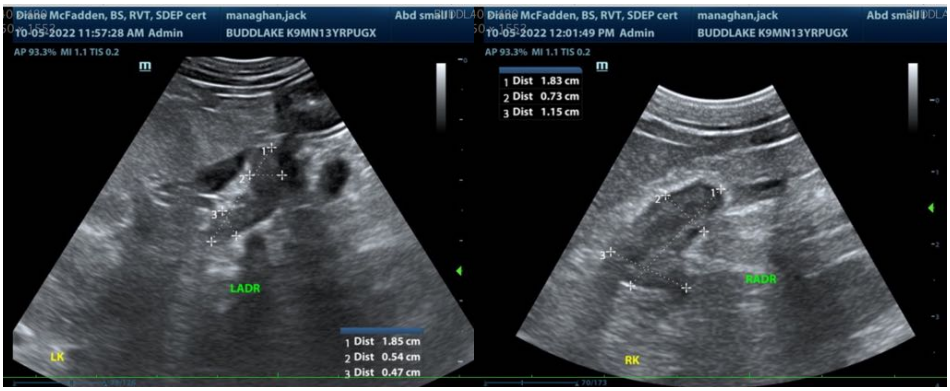

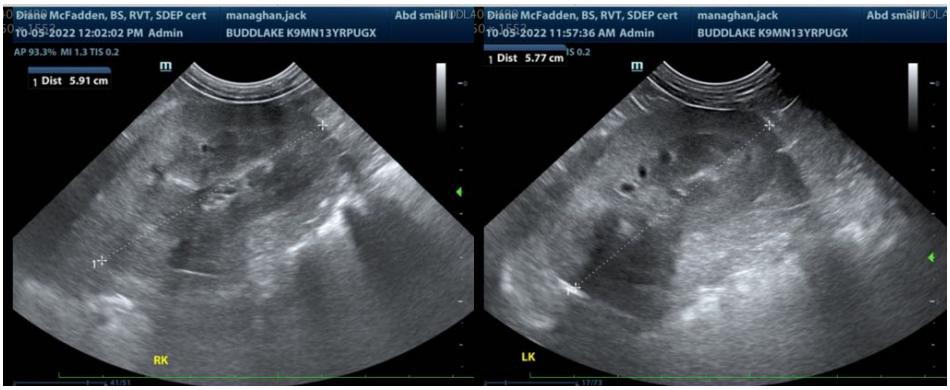

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The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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.

Beth Johnson, DVM DACVIM

Beth.Johnson@SonoPath.com