IMAGING PERFORMED BY

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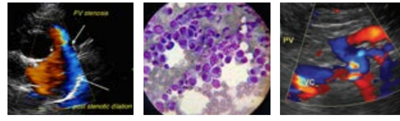

SonoPath

Clinical Sonography & Telecytology

EDUCATIONAL TELECONSULTATION SERVICES™

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DATE

2/2/23

PATIENT

Phillip Evans

SPECIES

Canine

BREED

Pug X

SEX

Neutered Male

AGE

4/1/09

WEIGHT

26.1 Pounds

INTERPRETED BY

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

HOSPITAL NAME

Glen Burnie AH

REFERRING VET

Dr. Shah

INVOICE

44718

PRESENTING CLINICAL SIGNS

Phillip came for a recheck of the bladder. Bladder had inflammation seen in x-rays last visit 1/21/21. His and miss when it comes to him urinating in the house. Sometimes the owner will know when he needs to go and sometimes she can't tell.

Current Medications: Clavamox 62.5mg and Clavamox 125mg BID.
Date of Previous IntraPet Ultrasound: No previous.
Sedation: Not required to complete full diagnostic ultrasound.
Stat Report: Not requested.
Imaging Performed By: Rachel Brilhart, RDMS.

ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN

Urinary System

The urinary bladder is moderately distended with anechoic urine. The Bladder wall appears diffusely mildly thickened and irregular, measuring 0.36 cm. There is a focal section in the ventral apical portion of the urinary bladder where there is particular thickening and irregularity, most consistent with a mass effect/polypoid like lesion. This lesion measures approximately 1.09 cm x 1.6 cm. The trigone, ureteral papillae and visible urethra (to a depth of 2cm) appear normal with no evidence of wall thickening, mucosal irregularities, or masses. There is a mobile hyperechoic shadowing structure most consistent with a calculus visualized within the urinary bladder, measuring 0.36 cm.

The prostate is slightly prominent (0.83 cm) and normal in shape for this neutered male dog. The parenchyma is homogenous, and the external margins are smooth. There is a small mineralization measuring 0.22 cm. The prostatic urethra appears normal with no evidence of irregularity, invasion, mass effect or calculi.

The left kidney has a normal shape and size (4.94 cm). Overall echogenicity is normal with adequate 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 (5.06 cm). Overall echogenicity is normal with adequate 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/borderline "plump" in size measuring 0.88 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/borderline "plump" in size measuring 0.86 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. The spleen echotexture is heterogenous and mottled, 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 large in size, and normal in echogenicity with rounded margins. The parenchyma is heterogenous in echotexture with subtle, indistinct focal mottling. The visible portions of the vasculature and biliary tract appear normal. No focal nodules or cystic lesions are observed.

The gall bladder 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 non-organized echogenic debris. The cystic and common bile ducts are normal/not visible.

Gastrointestinal

The stomach contains minimal luminal contents. It measures at a normal thickness of 0.49 cm 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 uniform diameter with minimal fluid distension. Wall appears subjectively, mildly increased. Bowel loops follow a typical curvilinear path with distinct wall layering. Jejunum wall measures 0.39 cm. Duodenum wall measures 0.49 cm. Mild mucosal speckling is visualized associated with the duodenum. 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 normal and isoechoic 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

- Diffusely thickened urinary bladder wall with focal apical thickening/mass effect. Additionally there is a dependent shadowing mineralization visualized. The diffuse changes observed are most consistent with cystitis/irritation from the urinary bladder stone. The focal apical irregularity is concerning for a neoplastic mass effect, although benign etiologies such as focal inflammation, polypoid-like change, etc. are very possible.

- Prominent prostate with a small mineralization – Correlate these findings with the age of neutering. If the patient was neutered prior to puberty, recommend a fine needle aspirate, as these changes could represent neoplastic change.

- Borderline bilateral adrenomegaly – The bilateral adrenomegaly could be consistent with bilateral hyperplasia (e.g., secondary to pituitary-dependent hyperadrenocorticism), bilateral infiltrative neoplasia, inflammatory adrenal disease, other. Correlation with clinical findings is recommended.

- Mottled spleen – The diffuse splenic changes are non-specific and could be consistent with lymphoid hyperplasia, extramedullary hematopoiesis, infiltrative neoplasia, inflammation, other. Cytology or histopathology would be necessary to get a definitive diagnosis.

- Large, heterogeneous, rounded 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.

- Moderate gallbladder debris – 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.

- Mild mucosal speckling visualized associated with the duodenum – Bright mucosal speckling has been postulated to represent dilated lacteals or focal accumulations of mucus, cellular debris, etc.. in the mucosal crypts.

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

The urinary bladder wall appears somewhat diffusely irregular and thickened, but there is a focal irregularity/mass effect in the ventral apical region. This could represent a neoplastic mass effect, but also could have the characteristics of a more benign lesion. Additionally, there is a small stone present. This stone is borderline for a size of stone that could possibly pass.

Strongly recommend full evaluation of this lesion including a urinalysis and culture to start. If the culture is positive, recommend recheck evaluation of the urinary bladder in approximately 2-3 weeks while on antibiotic therapy to determine if the thickening is improving. If urine culture is negative (must be cultured when off antibiotics for at least 5 days), then I would recommend either a traumatic catheterization or surgical biopsy of the urinary bladder. Additionally, a urine BRAF test could be considered, but this does not provide definitive information. If urine BRAF test is positive, it increases the likelihood for a neoplastic process. If it is negative, this is a non-diagnostic test and additional testing is warranted.

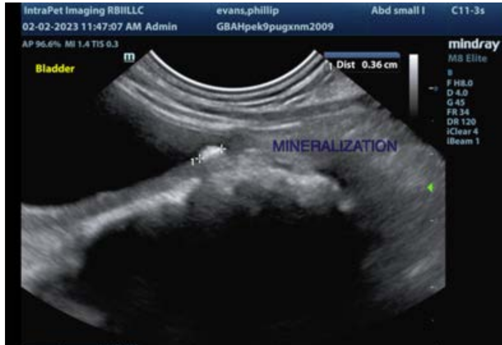
The prostate appears somewhat prominent, but it has relatively smooth, regular borders. Additionally, there is a small pinpoint mineralization that could be parenchymal mineralization or possibly a small, embedded stone, etc. Correlate this with the age of neutering. If the patient was neutered prior to puberty (typically less than 6 months of age), this is likely atypical, and a fine needle aspirate of the prostate should be performed, looking for any evidence of neoplastic change. If the patient was neutered after puberty, this could be more normal, but close continue monitoring is warranted. A fine needle aspirate could be considered either way.

The significance of the mildly mottled spleen and the mucosal speckling associated with the duodenum is uncertain. A fine needle aspirate of the spleen could be considered. Additionally, if there are chronic gastrointestinal signs, mucosal speckling could be an indicator of this, and workup for underlying gastrointestinal disease could be considered.

The adrenal glands are somewhat prominent for this size of a dog. If overt signs of Cushing's disease are present, you could consider adrenal function testing, but this could be within normal limits for this individual.

Additionally, the liver changes are non-specific. If significant liver enzyme elevations are present, you could consider a liver function test and a fine needle aspirate of the liver.

Recommend three view thoracic radiographs to evaluate for possible concurrent thoracic disease/involvement.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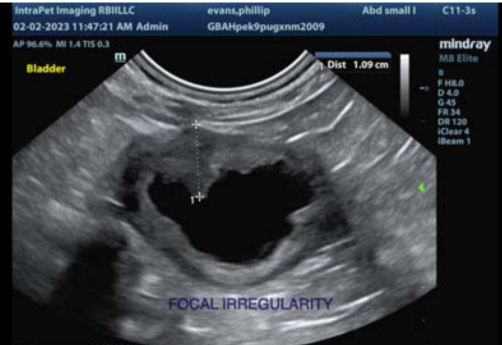
Bladder
1 Dist 0.36 cm
MINERALIZATION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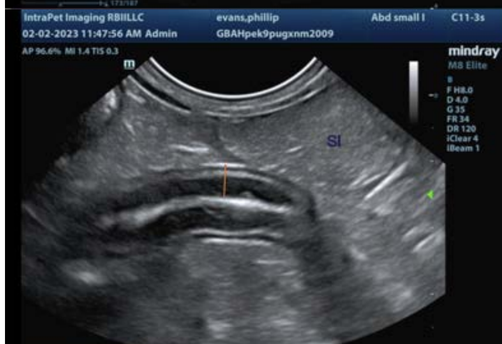
FOCAL IRREGULARITY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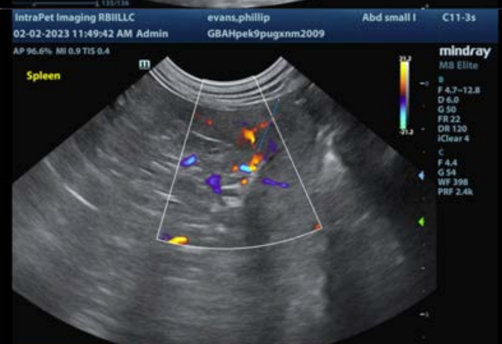
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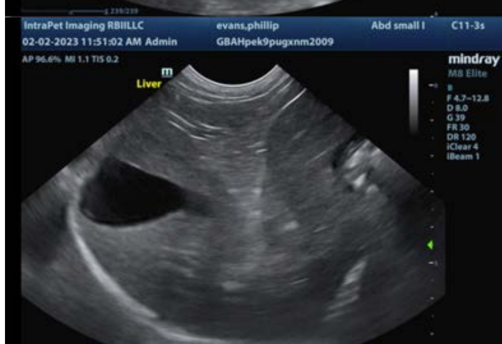
Spleen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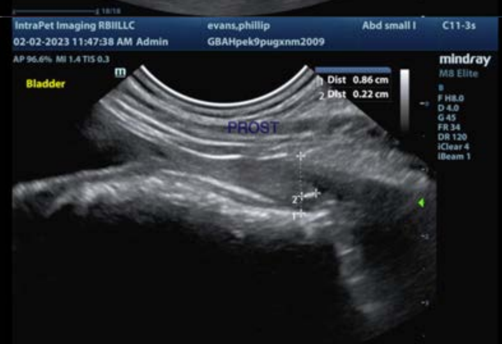
Liver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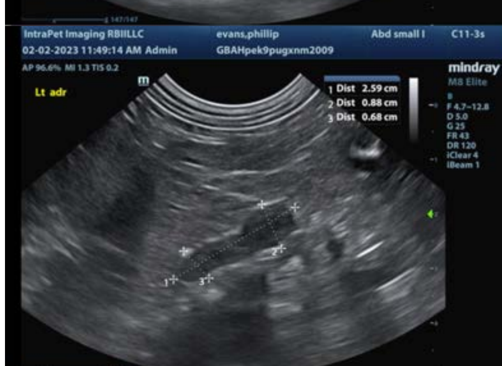
Bladder
1 Dist 0.86 cm
2 Dist 0.22 cm
PROST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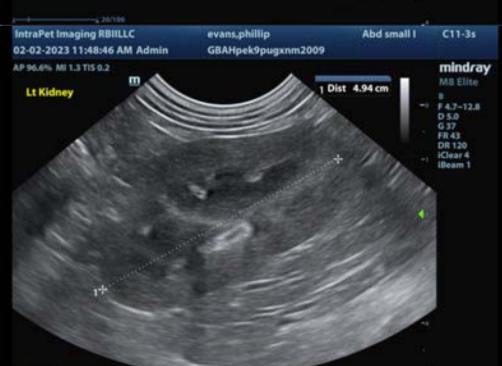
Lt adr
1 Dist 2.59 cm
2 Dist 0.88 cm
3 Dist 0.68 cm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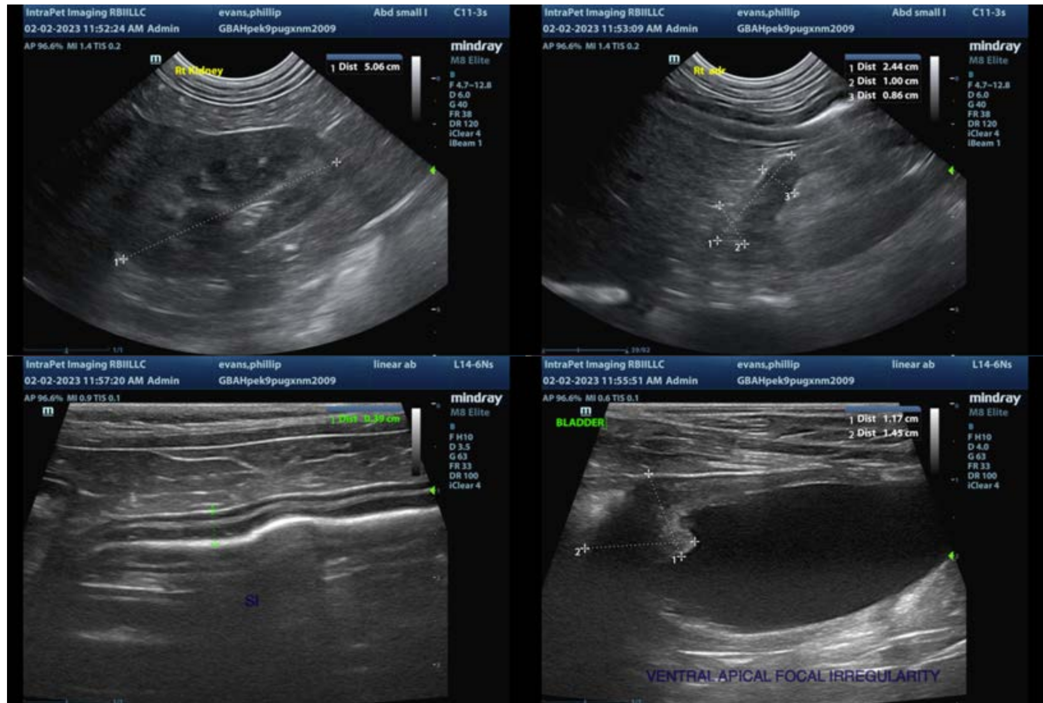
Lt Kidney
1 Dist 4.94 cm



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.

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