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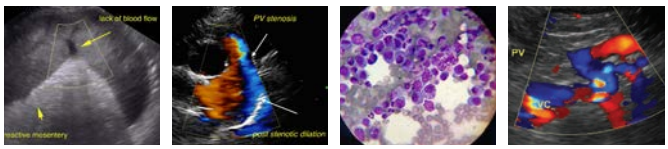

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PATIENT
Archie Khoei

SPECIES
Canine

BREED
Beagle

SEX
Male

AGE
10 Years

WEIGHT
13.4 kg

INTERPRETED BY
Beth Johnson, DVM DACVIM

IMAGING PERFORMED BY
Dr. Hayley Biederbeck

HOSPITAL NAME
Lomsnes Vet Hospital

REFERRING VET
Dr. Hayley Biederbeck

INVOICE
46168

DATE
3/23/23

PRESENTING CLINICAL SIGNS

Ultrasound for neighbouring clinic Intermittent blood in urine, straining to defecate. Passed stool in clinic-small pieces formed but with significant mucus surrounding it. After prostate was palpated was dripping blood from sheath -was a stray and no testicles externally but no hx of actual neuter-crypt? Abnormal PE/Chem/CBC/UA Results: grade 1-2 murmur. No labwork yet

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 (0.52 cm). Mucosa is hyperechoic and irregular. No masses or cystoliths are observed. The trigone and visible pelvic urethra are normal thickness with a smooth mucosal surface. There is some irregular echogenic tissue that appears to extend into the trigone area in some of the views, however it is not repeatable, and in some views the trigone is very clear, so these are believed to be positioning or obliqued images of the prostate versus true nodules or mass in the urinary bladder.

Prostate is symmetrically enlarged with smooth margins that are well differentiated from surrounding tissue. Normal bilobed shape is maintained. Parenchyma is diffusely hyperechoic. Several small anechoic cysts are noted. No mineral is noted.

The right kidney is normal in size (5.85 cm), shape and echogenicity. It has smooth peripheral margination. There is a normal 1:3 cortex to medulla ratio with appropriate corticomedullary distinction. There is no evidence of pyelectasia, mineral or infarcts observed.

The left kidney is normal in size (6.2 cm), shape and echogenicity. It has smooth peripheral margination. There is a normal 1:3 cortex to medulla ratio with appropriate corticomedullary distinction. There is no evidence of pyelectasia, mineral or infarcts observed.

Adrenal Glands

The right adrenal gland is unable to be well visualized in these images.

The left adrenal gland is normal in size (0.56 cm at the caudal pole), shape and contour. Corticomedullary structure is unremarkable. Visible surrounding vasculature appears normal. The cranial pole is unable to be well visualized in these images.

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

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. No focal lesions are observed. Visible vasculature and biliary tree appear normal without distension or congestion.

Gallbladder is moderately distended with anechoic bile as well as moderate suspended and gravity dependent echogenic debris. The wall is smooth without visible thickening. There is no evidence of cystic or CBD dilation. There is no evidence of effusion or inflammation.

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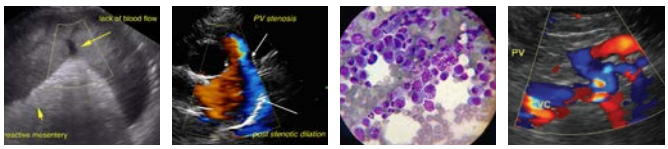

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Gastrointestinal

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, foreign material or infiltrative disease.

The visible colon is normal in wall thickness (< 0.2 cm) and layering. Subjectively normal contents noted until the distal descending colon, where it suddenly transitions from a normal distended colon to a completely empty colon with a thick irregular hyperechoic mucosa. There is some concern that the change between the normal full colon and empty colon could be a stricture, although that can't be definitively diagnosed via ultrasound.

Pancreas

The pancreatic parenchyma is appropriately isoechoic to surrounding tissue. Visible capsule is smooth and normal in contour. There is no visible pancreatic duct dilation. There is no evidence of active peripancreatic inflammation.

Free Abdomen

There is a scant amount of anechoic free fluid.

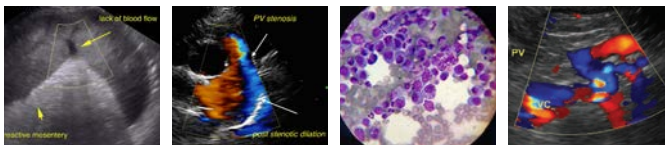
There is no apparent lymphadenopathy noted in these images.

In the right cranial abdomen, there is a heterogeneous, oblong structure with a hyperechoic median line or density, very consistent with a cryptorchid testicle.

Also in the right cranial abdomen, there is an anechoic, what appears to be a fluid-filled tubular structure that measures approximately 1.7 cm x 3.2 cm in size, but cannot be traced on either end, so definitive origin or definitive size cannot be determined.

PRIMARY FINDINGS

- **Chronic Cystitis -** Urinary bladder wall changes are most consistent with chronic cystitis. Infiltrative neoplasia cannot be ruled out but is considered less likely give the location and diffuse nature of the changes.
- **Benign Prostatic Hyperplasia with cysts –** Prostatic findings are most consistent with Benign Prostatic Hyperplasia (BPH) and concurrent benign prostatic cysts. Active prostatitis cannot be ruled out. Infiltrative neoplasia cannot be ruled out but is considered less likely.
- **Irregular hyperechoic distal descending colon wall** – consistent with colitis. Benign, infectious, inflammatory, parasitic, or even infiltrative neoplastic colitis are all differentials. There is some concern for possible stricture, given the abrupt transition from a normal full colon to an empty colon, especially given this patient's history of straining to defecate.
- Suspect cryptorchid testicle



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- Unknown anechoic suspect fluid-filled structure in the right cranial abdomen of unknown origin.

SECONDARY FINDINGS

- **Moderate 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.

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

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.

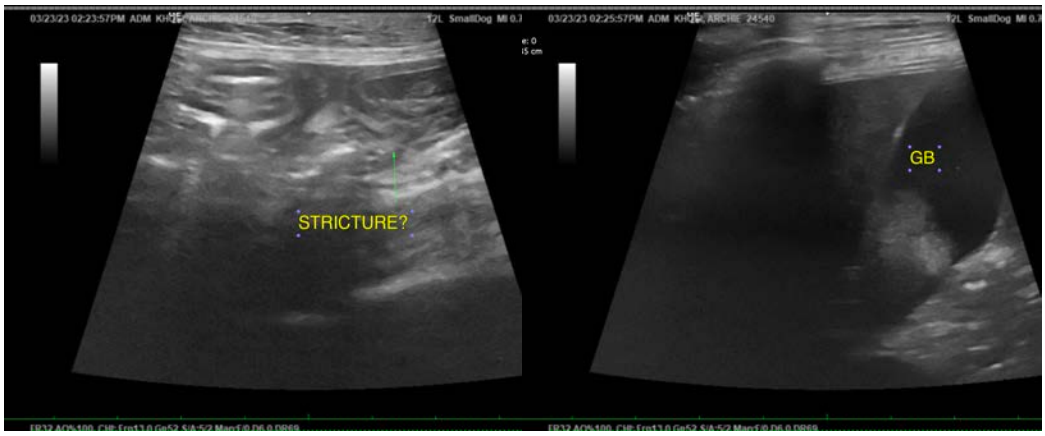
Further evaluation of the colon could be considered, beginning with a fecal exam if not recently evaluated as well as a fecal enteropathogen PCR panel to Texas A&M GI Laboratory, and ultimately colonoscopy for further visual evaluation as well as biopsies.

Ultimately, pending results of the above, an exploratory laparotomy for planned neuter/removal of the suspected cryptorchid testicle is recommended. However, given the fluid-filled structure in the area adjacent to the testicle of unknown tissue origin, a pre-surgical planning abdominal CT scan is recommended.

In the meantime, antibiotics (ideally based on culture and sensitivity results) as well as anti-inflammatories may help begin to alleviate the hematuria.

Additionally, deworming with a 5-day course of Panacur is recommended, as is a probiotic such as Visbiome or Proviable, and potentially stool softeners to help alleviate the clinical signs associated with the colonic disease.

In summary, there is a chance that all the patient's clinical signs and the pathology described above is related to being intact and having an intraabdominal cryptorchid testicle with the hematuria, the straining to defecate, etc. caused by the benign prostatic hyperplasia. Therefore, pending owner wishes and clinician opinion, directly proceeding to patient neuter with monitoring of improvement after that prior to further intervention of the other problems may be an appropriate option as well.



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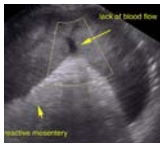
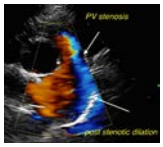
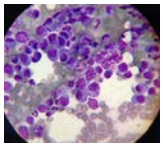
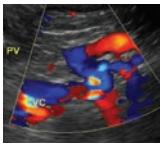

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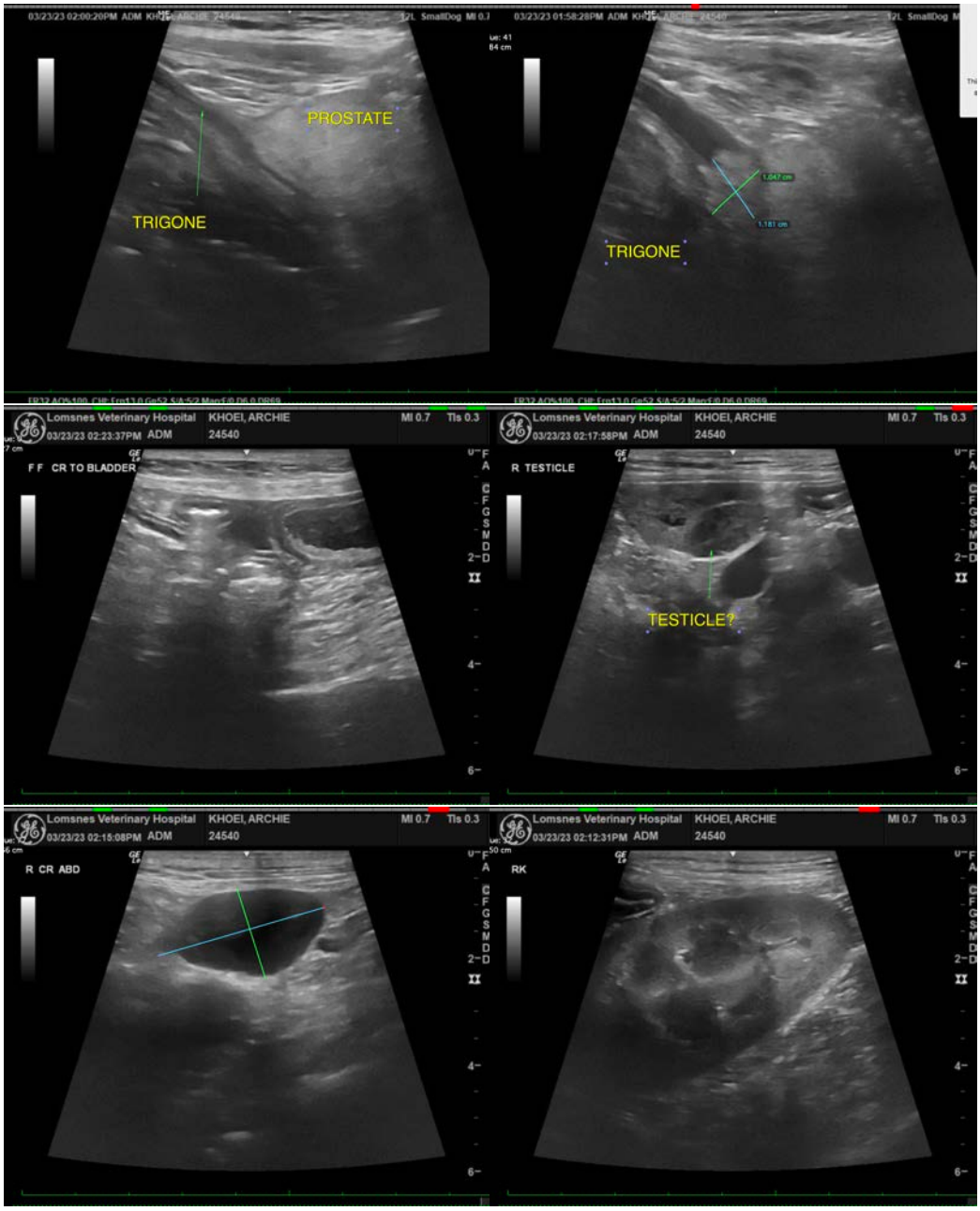

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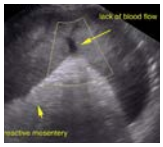
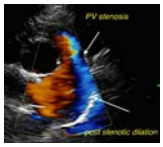
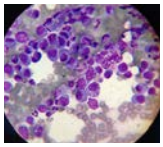
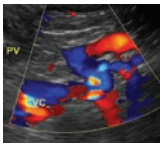

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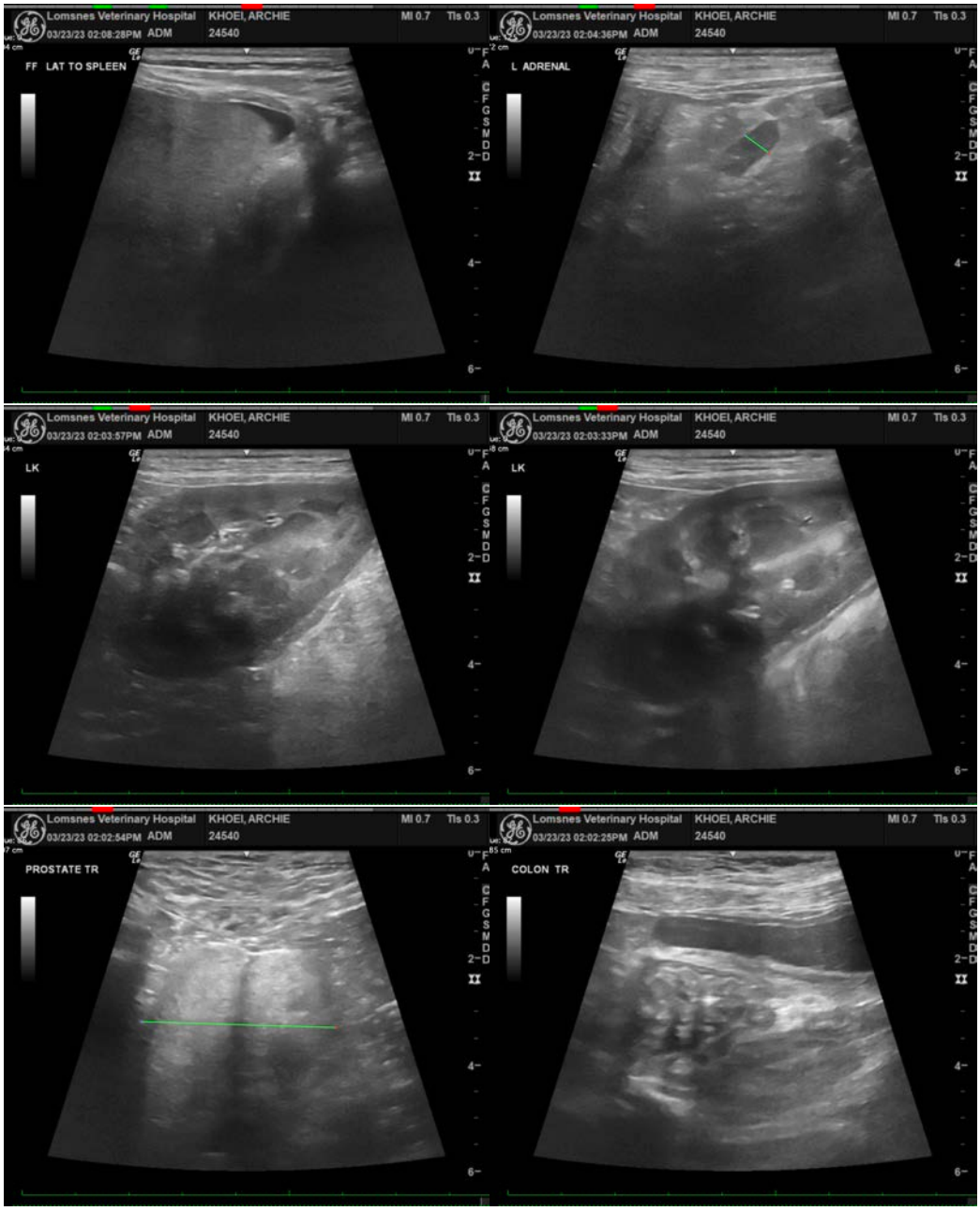

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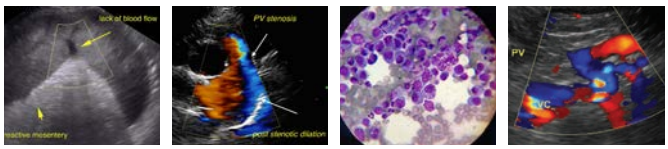

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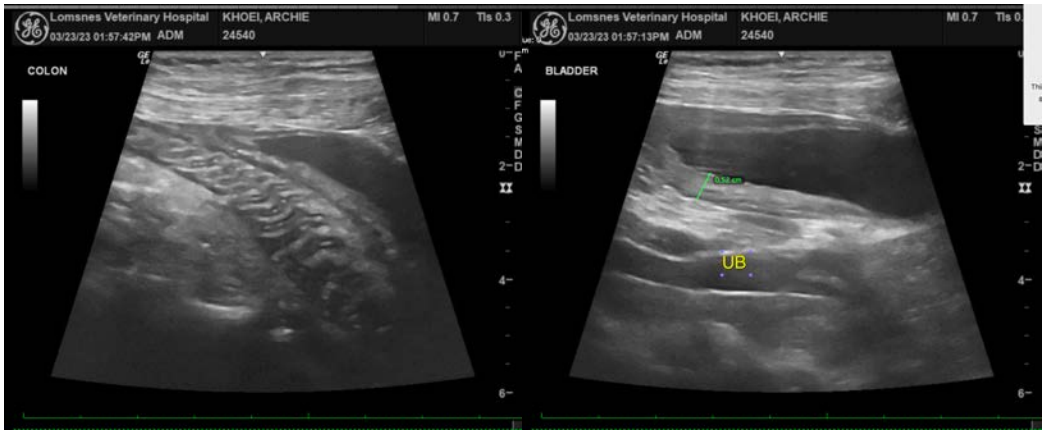

The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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