



PATIENT

Patty Mills

PRESENTING CLINICAL SIGNS

Chronic intermittent hematuria LUTD
Abnormal PE/Chem/CBC/UA Results: CBC normal. Chemistry has a slightly increased glucose of 160. UA and urine culture pending.

SPECIES

Canine

ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN

BREED

Chihuahua

Urinary System

The urinary bladder is adequately distended. The wall is mildly to markedly thickened and irregular circumferentially. A moderate to marked amount of echogenic debris is present within the bladder lumen, some of which is free floating, as well as settled by gravity and very small punctate hyperechoic foci that appear embedded in the mucosa. Coagulated or aggregated material is also seen floating within the bladder, which may be blood clots based on the history of hematuria. At least two cystoliths are present; one along the dorsal wall (6.9 mm) and one along the ventral wall (7.9 mm). Small protrusions of the mucosa are observed, which may be suggestive of polyps. A mass is not visualized. No abnormalities are noted with the trigone. A complete evaluation of the proximal urethra is affected by interference by the pelvis. A pelvic bladder may be present as the urinary bladder is present quite caudally.

SEX

Spayed Female

AGE

8 years

WEIGHT

11.9 lbs

Kidneys

The **left** kidney measures 3.52 cm (low end of normal reference range for Patty's weight). The capsule is smooth, and mildly rounded. The cortex is mildly hyperechoic and a mild loss of the normal definition of the cortico-medullary junction is present. Mineralizations of the diverticulae and pelvis are present, without evidence of nephroliths or pyelectasia. Blood flow is within normal limits. The surrounding mesentery is mildly hyperechoic.

The **right** kidney measures 3.95 cm (low end of normal reference range for Patty's weight). Findings are similar to the left kidney.

INTERPRETED BY

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ACVIM

IMAGING PERFORMED BY

Harold Mike Beard

Aortic bifurcation/trifurcation

No abnormalities observed.

HOSPITAL NAME

West Prince AH

Adrenal Glands

The **left** adrenal gland measures 0.41 cm at the cranial pole, 0.54 cm at the caudal pole and 1.27 cm in length. No abnormalities are noted with the gland's overall architecture, echogenicity or echotexture. The phrenico-abdominal vein and surrounding vasculature and mesentery are unremarkable.

The **right** adrenal gland measures 0.45 cm at the cranial pole, 0.46 cm at the caudal pole and 1.20 cm in length. No abnormalities are noted with the gland's overall architecture, echogenicity or echotexture. The phrenico-abdominal vein and surrounding vasculature and mesentery are unremarkable.

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Spleen

Patty Mills

The spleen is within normal limits in size, architecture, echotexture, and echogenicity. The capsule is smooth. No abnormalities are observed with its vasculature, i.e. congestion and thrombi are not identified.

SPECIES

Canine

Liver

BREED

Chihuahua

There are no obvious signs of hepatomegaly and its borders are smooth and sharp, with some which are mildly rounded. The liver is mildly and diffusely hyperechoic, but homogeneous. The liver and right renal cortex are homogeneous, however, the renal cortex is mildly hyperechoic. No abnormalities are observed with the hepatic vessels visualized.

SEX

Spayed Female

Mildly hypoechoic rounded "mass effect" is observed at the edge of one of the hepatic lobes. It measures approximately 2.5 cm in diameter x 3 cm in length. It is relatively homogenous in echotexture compared to the remaining liver parenchyma. A subcapsular hypoechoic nodule is observed within the larger "mass effect", which measures 6.9 mm in diameter x 1.1 mm in length. It does not affect the integrity of the capsule.

AGE

8 years

The gallbladder wall is within normal limits in thickness and echogenicity. A trivial amount of echogenic material is present within the GB. The portions of the cystic and/or common bile ducts observed are not dilated or tortuous, i.e. there are no signs of an obstruction.

WEIGHT

11.9 lbs

Gastrointestinal

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The gastric wall is within normal limits in thickness and the wall layers are well defined. The muscularis is mildly prominent. No obvious abnormalities are observed with its peristalsis.

Ingesta and a small amount of fluid are present within the duodenum. The small intestinal wall thickness, including the duodenum, is within normal limits and the definition of the wall layers is preserved. Abnormally dilated loops of bowel are not observed.

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Harold Mike Beard

The colonic wall is not thickened and mural detail is considered normal.

There are no obvious signs of a mass, foreign body, infiltrative disease or an obstruction in the gastrointestinal tract.

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Pancreas

No overt abnormalities are observed with the parenchymal echogenicity or echotexture. There is no evidence of hyperechogenicity of the surrounding mesentery, i.e., signs of active pancreatitis are not present.

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Other

Lymph nodes No abnormalities are observed

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Abdominal effusion is not visualized.



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Mesentery

SPECIES

Canine

Despite the lack of abnormalities with the gastrointestinal tract, the mesentery is diffusely hyperechoic. This may be clinically insignificant, i.e. due to the settings of the machine, or possibly secondary to deposition of fat depending on the Patty's body condition score. It may also occur with chronic inflammation, however, this does not appear to be consistent with Patty's clinical history.

BREED

Chihuahua

ULTRASONOGRAPHIC FINDINGS

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- A urinary tract infection is strongly suspected, as is polyploid cystitis, both of which are likely secondary to the presence of cystoliths. Blood clots and free floating sediment is noted within the urinary bladder.
- The renal abnormalities observed are suggestive of age related degeneration, however, a component of the changes observed may be due to glomerulonephritis. Furthermore, pyelonephritis cannot be excluded based on the appearance of the kidneys and the surrounding mesentery.
- The diffuse hyperechogenicity of the liver is suggestive of a vacuolar hepatopathy, which may occur due to stress or chronic illness. Differential diagnoses, such as hepatitis, cholestasis and cholangitis/cholangiohepatitis with a secondary bacterial infection are considered unlikely, however, blood work is suggested.
- The hypoechoic "mass effect" noted at the edge of one of the hepatic lobes is suggestive of a benign adenoma. The subcapsular, hypoechoic hepatic nodule within the "mass effect" is suggestive of nodular hyperplasia. A re-evaluation of the area may be considered in the future to monitor its appearance, as a fine needle aspirate may be difficult based on its location.
- The clinical significance of the prominent muscularis of the stomach is not known, i.e. it may be an incidental finding and not clinically significant, however, evaluation of Patty's history for vomiting and/or intermittent hyporexia, is suggested.
- The diffusely hyperechoic mesentery may be clinically insignificant, for example, due to the settings of the machine, or possibly secondary to deposition of fat depending on the Patty's body condition score. It may also occur with chronic inflammation, however, this does not appear to be consistent with Patty's clinical history.

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INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

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Blood work, including a SDMA, a urinalysis and urine culture and sensitivity are suggested. Monitoring for anemia is suggested.

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The CBC and serum biochemical profile were unremarkable other than mild hyperglycemia. The urine culture and sensitivity are pending.

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An in-house urinalysis performed within 30 minutes of collection is suggestion to evaluate for crystalluria, which may help determine type of stone and whether dietary dissolution is possible or whether a cystotomy or PCCL should be performed immediately.



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Although unlikely, Patty should be monitored for signs of a urinary obstruction. If a stone is passed, it should, ideally, be sent for analysis in case it is struvite in origin, in which case antibiotics and diet may be used to dissolve them.

SPECIES

Canine

Evaluation of the conformation of Patty’s vulva and perivulvar region is recommended. Basic hygiene should be pursued on a daily basis with chlorhexidine 0.025-0.05%, rinsed with luke warm water, and ensuring the area is kept dry to decrease risk of infection. Any fur in the surrounding area should also be trimmed to decrease risk of bacterial wicking.

BREED

Chihuahua

A systemic arterial blood pressure is recommended.

SEX

Spayed Female

A re-evaluation of the hepatic “mass effect” and the subcapsular, hypoechoic hepatic nodule is suggested in the future to monitor its appearance, as a fine needle aspirate may be considered, but may be difficult based on its location. If cystotomy is pursue, a liver biopsy may be considered.

Evaluation of Patty’s history for vomiting and/or intermittent hyporexia, is suggested.

AGE

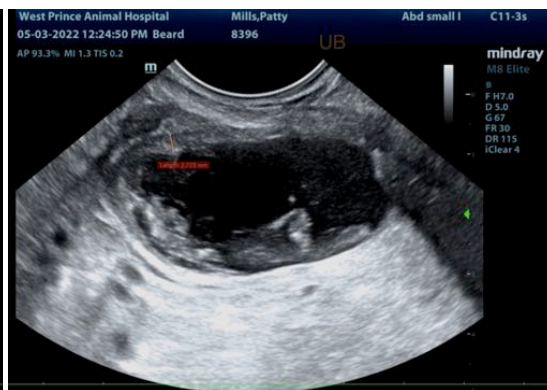
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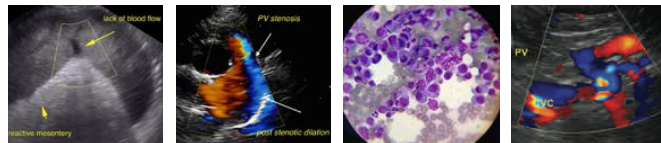
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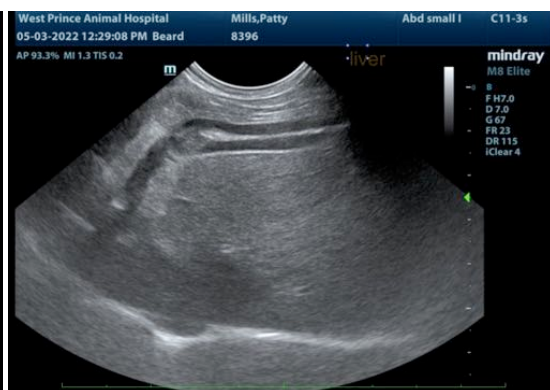
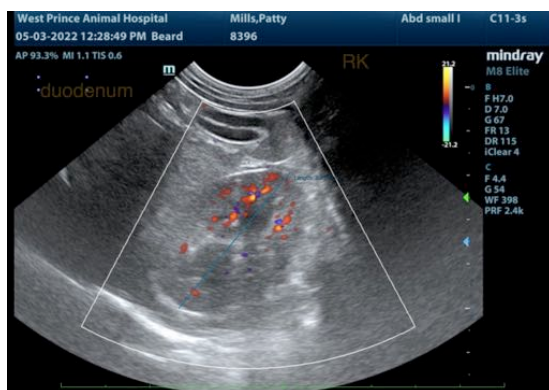
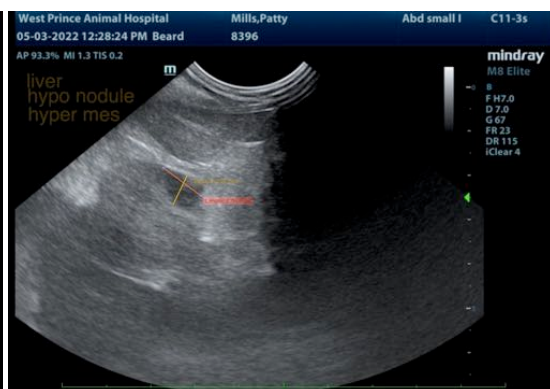
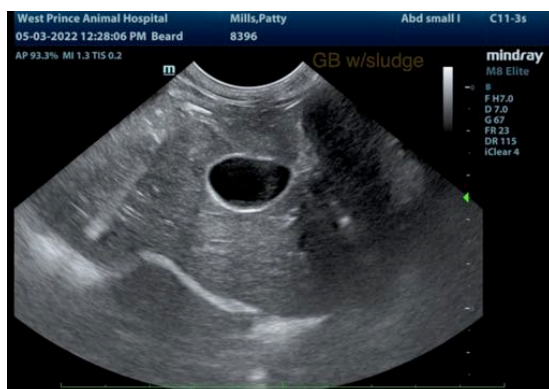
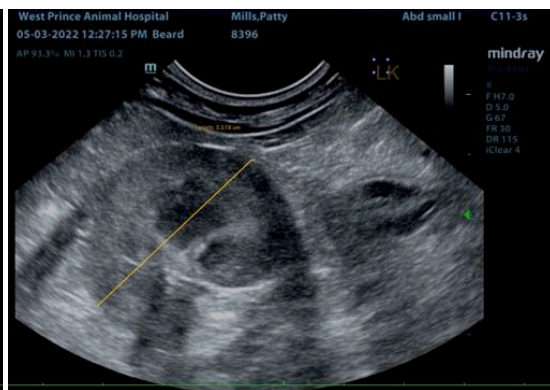
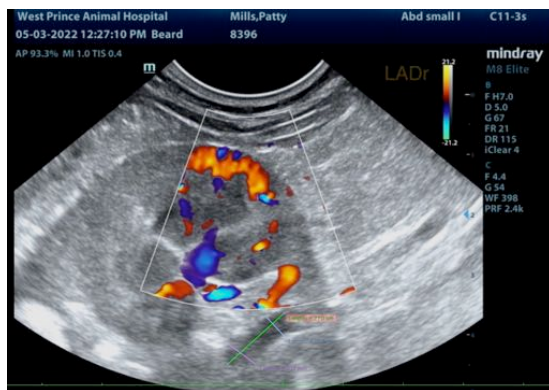
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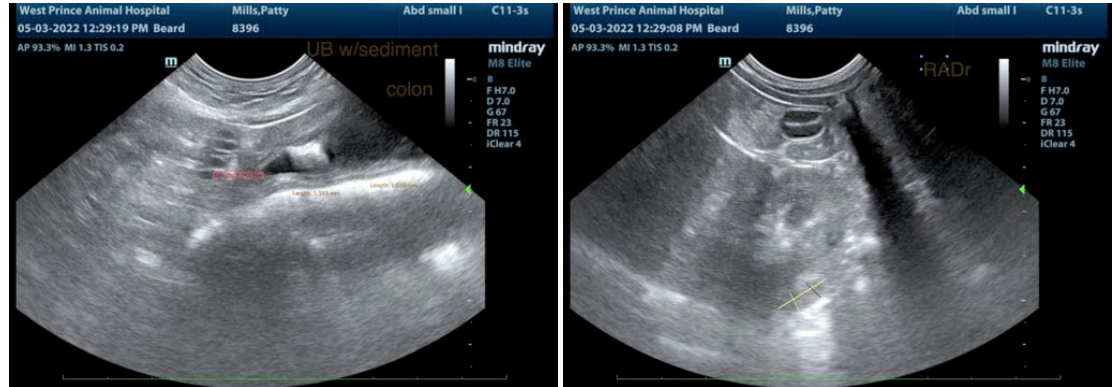
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The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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.

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