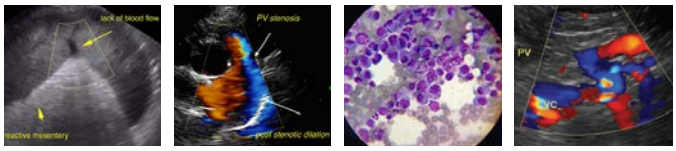
SonoPath
Clinical Sonography & Telecytology
EDUCATIONAL TELECONSULTATION SERVICES™



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

PATIENT

Princess Campbell

SPECIES

Canine

BREED

Terrier X

SEX

Spayed Female

AGE

6 Years

WEIGHT

10.8 Pounds

INTERPRETED BY

Beth Johnson, DVM DACVIM

HOSPITAL NAME

Valley Vet Service

REFERRING VET

Dr. Michelle Bartus

INVOICE NUMBER

33428

DATE

12/14/21

PRESENTING CLINICAL SIGNS

Frequent urination, hematuria
Abnormal PE/Chem/CBC/UA Results: Urolith seen on radiographs. ALT high at 648. U/A sp. gr 1.032 , pH 6.0, blood 250, WBC 0-5 pof, trace protein

ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN

Urinary System

Urinary bladder is moderately distended with anechoic contents. A calculus exhibiting distal acoustic shadowing is present along the gravity dependent inner wall of the lumen urinary bladder, measuring 1.6 cm in diameter.The urinary bladder, trigone and visible pelvic urethra are normal in thickness with a smooth mucosal surface.

Right kidney is normal in size (3.82 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. A hyperechoic band parallel to the corticomedullary border is present.

Left kidney is normal in size (4.8 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. A hyperechoic band parallel to the corticomedullary border is present.

Adrenal Glands

Right adrenal gland is normal in size (1.42 cm long, 0.60 cm at cranial pole and 0.45 cm at caudal pole), shape and contour. Corticomedullary structure is unremarkable. Visible surrounding vasculature appears normal.

Left adrenal gland is normal in size (1.35 cm long, 0.38 cm at cranial pole and 0.40 cm at caudal pole), shape and contour. Corticomedullary structure is unremarkable. Visible surrounding vasculature appears normal.

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). No focal nodules or masses are observed. Splenic vasculature appears normal.

Liver

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.

GB contains a moderate amount of non-dependent, mildly aggregated/inspissated sludge. Hypo to anechoic cystic areas are noted between the gallbladder sludge and luminal wall. The wall is otherwise smooth without visible thickening. There is no evidence of cystic or CBD dilation. There is no evidence of effusion.

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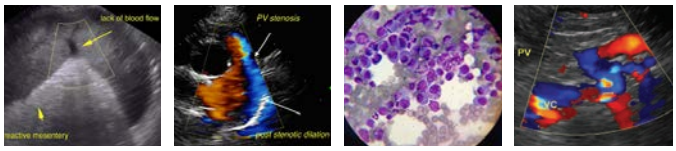

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Gastrointestinal

The stomach wall is normal in thickness (canine < 0.5 cm and feline < 0.4 cm) and layering. The lumen of the stomach is empty with 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 (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. Contents are consistent with normal formed feces and gas.

Pancreas

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 no evidence of peritoneal effusion. There is no apparent lymphadenopathy.

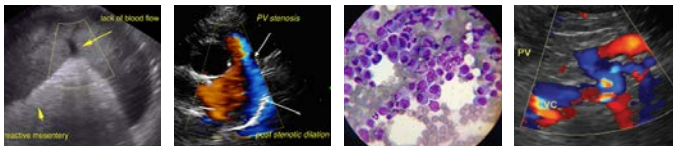
ULTRASONOGRAPHIC FINDINGS

- Cystolith
- Bilateral renal medullary rim sign - of unknown clinical significance and can be a normal variant. Medullary rim sign(s) should be interpreted in combination with other more specific indications of kidney disease such as isosthenuria, proteinuria, azotemia, etc.
- Early mucocele – 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. The non-dependent nature of this sludge combined with the cystic areas are suggestive, however, of possible emerging cystic mucosal hyperplasia or early gallbladder mucocele.

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

Given this patient's cystoliths as well as concurrent ALT, recommendations include testing for Leptospirosis as well as a urine culture to rule out an occult or secondary urinary tract infection related to the stone. Urate stones are typically radiolucent, which would not be consistent with having seen this stone on radiographs. However, given the concurrent ALT, pre-surgical bile acids are reasonable. However, a vascular anomaly is considered unlikely. ALT is more liver specific than other enzymes. It is a good indicator of active liver damage. If the value is increased by at least 3-4x normal (which is present in this case), differentials include infectious disease including Leptospirosis, inflammatory disease such as active hepatitis, copper, etc., toxic insult as well as infiltrative neoplasia.

Non-primary hepatic causes of increased ALT can include a variety of other metabolic conditions including but not limited to pancreatitis, gastroenteritis, parasitic disease, dental disease, endocrine hepatopathies from diabetes or hyperadrenocorticism, certain medications such as Phenobarb, corticosteroids, etc., and muscle ALT (more likely if the AST and CK are concurrently increased). Therefore, other possible pre-anesthetic diagnostics could include a fine needle aspirate of the liver if



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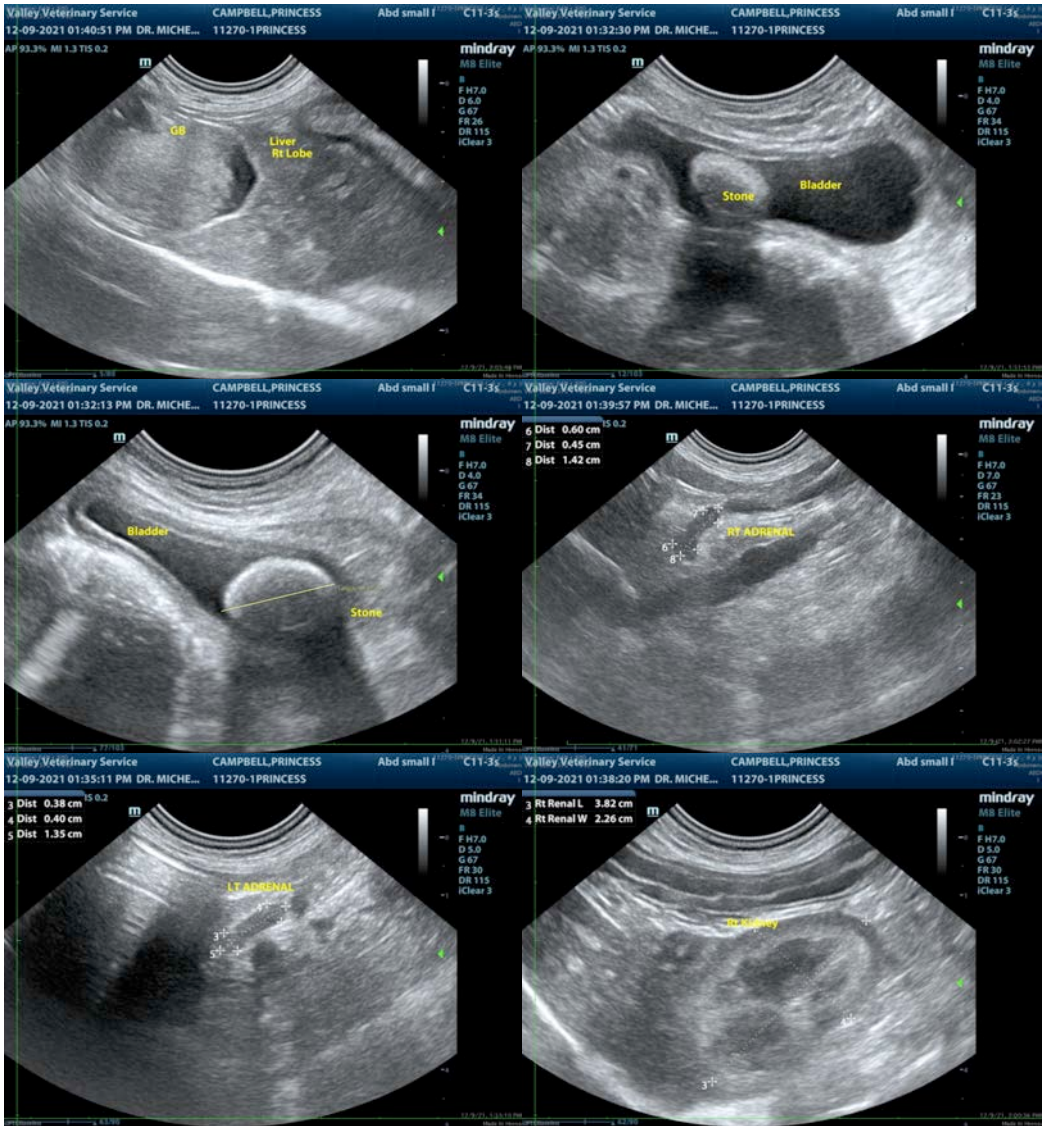
the patient's coagulation status is appropriate, and if non-diagnostic for infiltrative round cell disease such as lymphoma or vacuolar hepatopathy, etc., a liver biopsy at the time of cystotomy is recommended.

A less invasive approach would be the previously recommended Leptospirosis testing, urine culture, bile acids, etc., and an empirical course of antibiotics with monitoring of the ALT pre-surgery to see if ALT improves with that approach. Concurrent Ursodiol (given the gallbladder changes) and Denamarin could also be tried. If ALT improves, a liver biopsy is less warranted at the time of cystotomy.



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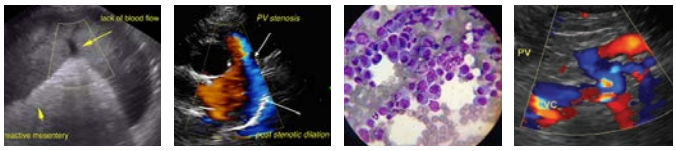

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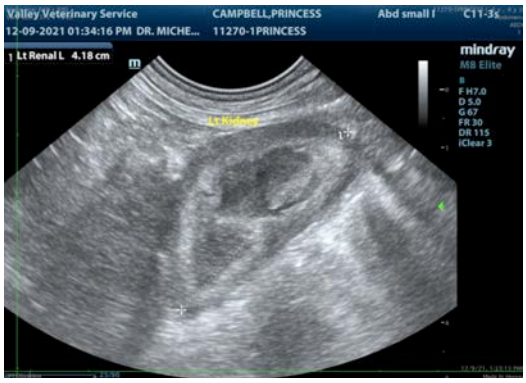

The information and recommendations provided are based on the images presented by the referring veterinarian. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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