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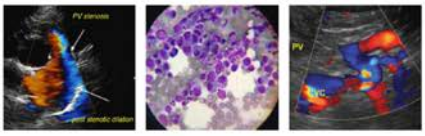

SonoPath
Clinical Sonography & Telecytology
EDUCATIONAL TELECONSULTATION SERVICES™
1-800-838-4268 info@sonopath.com SonoPath.com

PATIENT

Shanny Cunningham

SPECIES

Canine

BREED

Spanish Water Dog

SEX

Spayed Female

AGE

15 Years

WEIGHT

50 Pounds

INTERPRETED BY

Lisa Carioto, DVM, DVSc, Diplomate ACVIM

IMAGING PERFORMED BY

Amy Mayhew, LVT

HOSPITAL NAME

SVS Imaging MI

REFERRING VET

Rochester Vet Hospital

INVOICE

38825

DATE

6/17/22

PRESENTING CLINICAL SIGNS

Client reports that she is still urinating blood constantly and will do it every time that she urinates. Abnormal PE/Chem/CBC/UA Results: no inflammation or swelling noted peri vaginally. Urine noted on surrounding fur. Rest of PE unchanged

ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN

Urinary System

The urinary bladder is not well distended, although it is more filled by the end of the exam. An echogenic, soft tissue structure, measuring 1.56 cm in diameter x 4.04 cm in length is noted originating from the mucosa of the dorsal and apical walls. The dorsal wall (5.78 mm), apex (5.30 mm) and a portion of the ventral wall (2.59 mm) are thicker than normal. The remainder of the walls, even those that are thickened are smooth and regular. The structure has a hypoechoic to anechoic "center" depending on the angle imaged. Its luminal contours are scalloped. The peripheral edges of the structure are markedly hyperechoic, however, overt acoustic shadowing is not observed. The soft tissue structure is not vascularized when evaluated with colour Doppler. The mesentery surrounding the apex is hyperechoic. No abnormalities are noted with the trigone or proximal urethra. A trivial amount of free floating sediment is noted. There is no evidence of cystoliths.

Kidneys

The **left** kidney measures 6.23 cm. The capsule is smooth. The cortex is mildly hyperechoic and a very mild loss of the normal definition of the cortico-medullary junction is present. Mineralizations of the diverticulae and pelvis are present. Nephroliths are not noted. Pyelectasia (transverse view) 0.53 cm is present. There is no evidence of hydroureter. An elliptical, anechoic structure with smooth, thin walls, most consistent with a cyst, is visualized within the cortex. It measures 3.8 mm in diameter x 3.6 mm in length. The surrounding mesentery is very mildly hyperechoic.

The **right** kidney measures 6.39 cm. The capsule is very mildly irregular. The cortex is mildly hyperechoic and a very mild loss of the normal definition of the cortico-medullary junction is present. Mineralizations of the diverticulae and pelvis are present. Nephroliths are not noted. Pyelectasia (longitudinal view: 0.26 cm; transverse view: 0.27 cm) is present. There is no evidence of hydroureter. A very small anechoic structure with smooth, thin walls, most consistent with a cyst, is visualized within the cortex. The surrounding mesentery is very mildly hyperechoic.

Aortic bifurcation/trifurcation

No abnormalities observed.

Adrenal Glands

The **left** adrenal gland measures 0.75 cm at the cranial pole, 0.51 cm at the caudal pole. The cranial pole is "plump", however, a mass is not observed. The cortico-medullary definition is preserved. No abnormalities are noted with the gland's overall echogenicity or echotexture. The phrenico-abdominal vein and surrounding vasculature and mesentery are unremarkable.

The **right** adrenal gland measures 1.22 cm at the cranial pole, 1.68 cm at the caudal pole. Both poles are enlarged, however, an overt mass is not appreciated and no abnormalities are noted with the gland's echogenicity or echotexture. The phrenico-abdominal vein and surrounding vasculature and mesentery are unremarkable.

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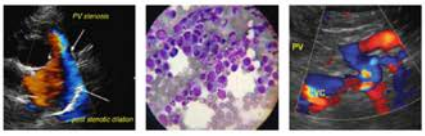

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Spleen

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.

Liver

There are no obvious signs of hepatomegaly and its borders are smooth and sharp. The liver's echotexture is homogeneous and it is within normal limits in echogenicity (it is hypoechoic to the spleen). An iso to hypoechoic nodule, measuring 0.91 cm in diameter x 1.34 cm in length, is noted subcapsularly. It does not disrupt the integrity of the capsule. Perivascular cuffing of multiple blood vessels is visualized, which may be due to deposition of fat, mineralization, inflammation and fibrosis. No abnormalities are observed with the hepatic vessels visualized.

The gallbladder (GB) wall is within normal limits in thickness and echogenicity. A small 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.

Gastrointestinal

Gas is present within the lumen of the stomach. The gastric wall is within normal limits in thickness and the wall layers are well defined. No obvious abnormalities are observed with its peristalsis.

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.

The colonic wall is not thickened and mural detail is considered normal. Gas and formed stools are present within the colon.

Pancreas

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

Other

Lymph nodes

Iliac lymph nodes (LNs): **Left**: more plump and slightly enlarged, 0.62 cm in diameter x 1.26 cm in length.

Abdominal effusion is not visualized.

ULTRASONOGRAPHIC FINDINGS

- **Urinary bladder**: Mass effect with thickening of the dorsal, apical and a portion of the ventral walls. The mass effect is relatively homogeneous and the thickened walls remain smooth and regular. Although transitional cell carcinoma must be considered, a polyploid cystitis should not be excluded.

- **Kidneys**: Age-related changes are suspected. However, bilateral pyelectasia may occur with pyelonephritis, as well as polydipsia and polyuria. The latter is not mentioned in Shanny's history. Furthermore, the degree of pyelectasia in the left kidney is more severe than what occurs with pu/pd alone.

- **Adrenal glands**: Bilateral adrenomegaly, possibly secondary to hyperplasia due to stress (chronic illness) or development of benign adenomas. Pituitary-dependent

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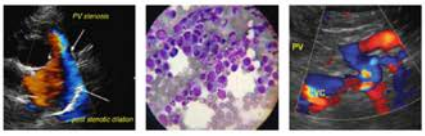

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hyperadrenocorticism (HAC) is also possible, but less likely based on the absence of clinical signs. Obvious sonographic signs of malignancy are not present with either gland, therefore, a pheochromocytoma or adenocarcinoma in its early development is considered less likely. A re-evaluation is suggested in 4 to 6 weeks to monitor the appearance and size of the glands. Sonographic results should be correlated with clinical signs, i.e., further diagnostics are not necessary if a patient is not demonstrating clinical signs of HAC.

- **Liver**: The hypoechoic nodule is most consistent with nodular hyperplasia.
- **Lymph nodes**: The *left* iliac lymph node is very mildly enlarged and rounded. Mild reactive hyperplasia may be present. This may also be normal for Shanny.

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

The following are suggested/recommended

Fine needle aspirates are not suggested due to possible seeding of neoplastic cells in the abdomen. Another option is mild sedation, catheterization of the urinary bladder and "traumatic" aspiration to obtain cells and possibly tissue.

Urine culture and sensitivity, if not already performed to exclude pyelonephritis and polyploid cystitis. The sample should be obtained by free flow method. The vulva and peri-vulvar area should be disinfected with chlorhexidine prior to collecting the urine.

+/- BRAF test

CBC, serum biochemical profile (monitor for anemia, renal parameters).

Thoracic radiographs (3 views) to evaluate the sternal lymph nodes

Referral to an oncologist to discuss all treatment protocols available.

If aggressive chemotherapy will not be pursued, treatment with

A non-steroidal anti-inflammatory, such as meloxicam or deracoxib, both of which have anti-neoplastic effects, may be prescribed, in addition to gabapentin. Monitor hepatic and renal parameters prior to use of NSAIDs.

gabapentin

toceranib (Palladia®), a tyrosine kinase inhibitor

+/- chlorambucil

toceranib (Palladia®) can help slow down the progression of the tumour. It is administered by mouth three days a week, for example, Mondays, Wednesdays, Fridays. Routine blood work, consisting of a CBC and serum biochemical profile, is required to monitor for neutropenia and elevated liver enzyme activities.

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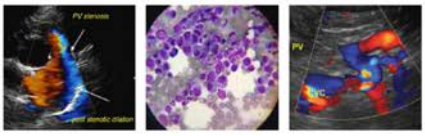

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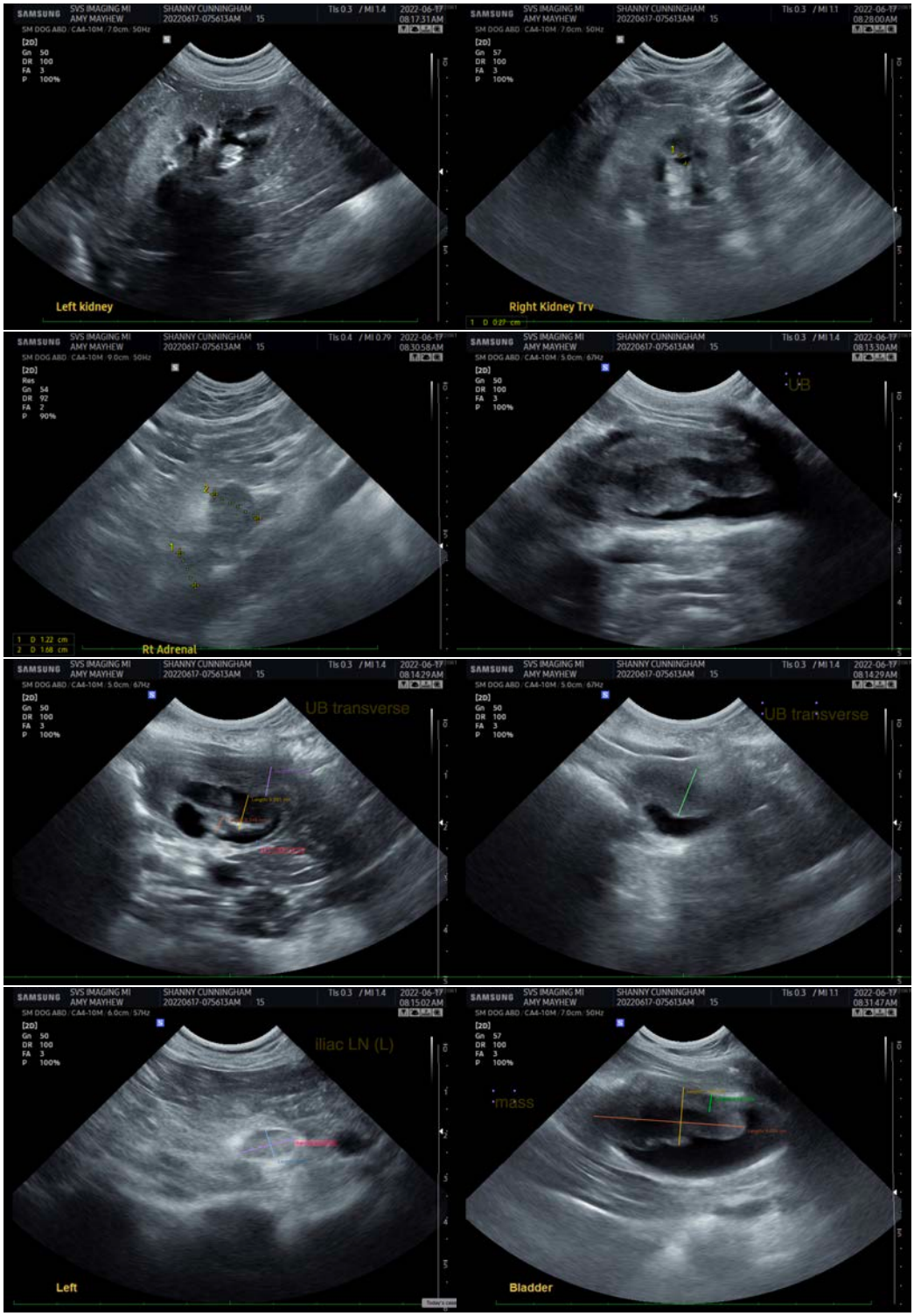

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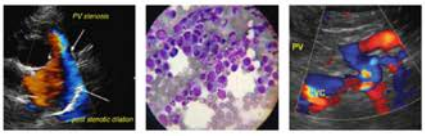

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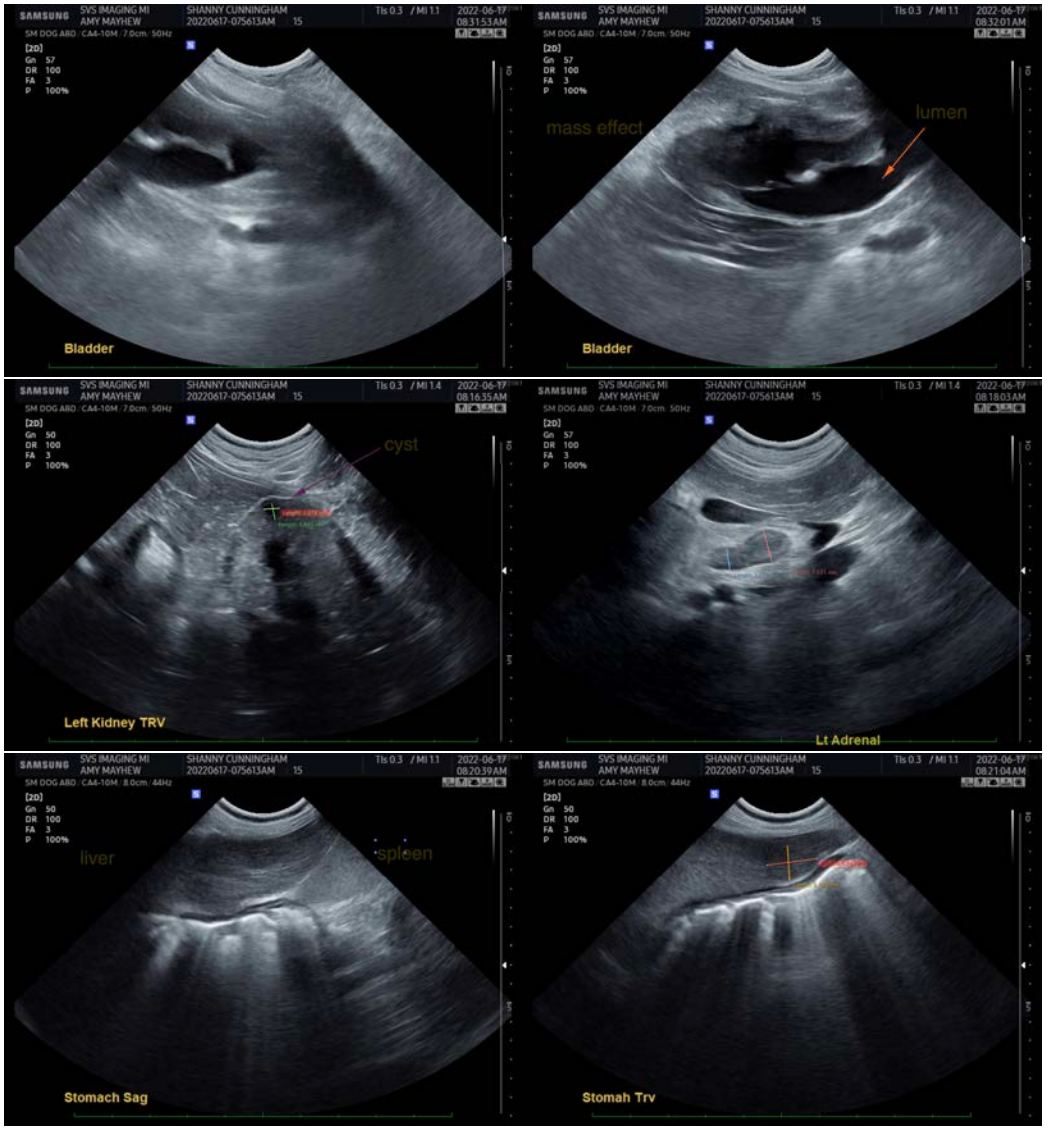

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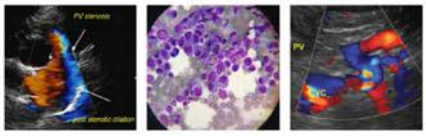

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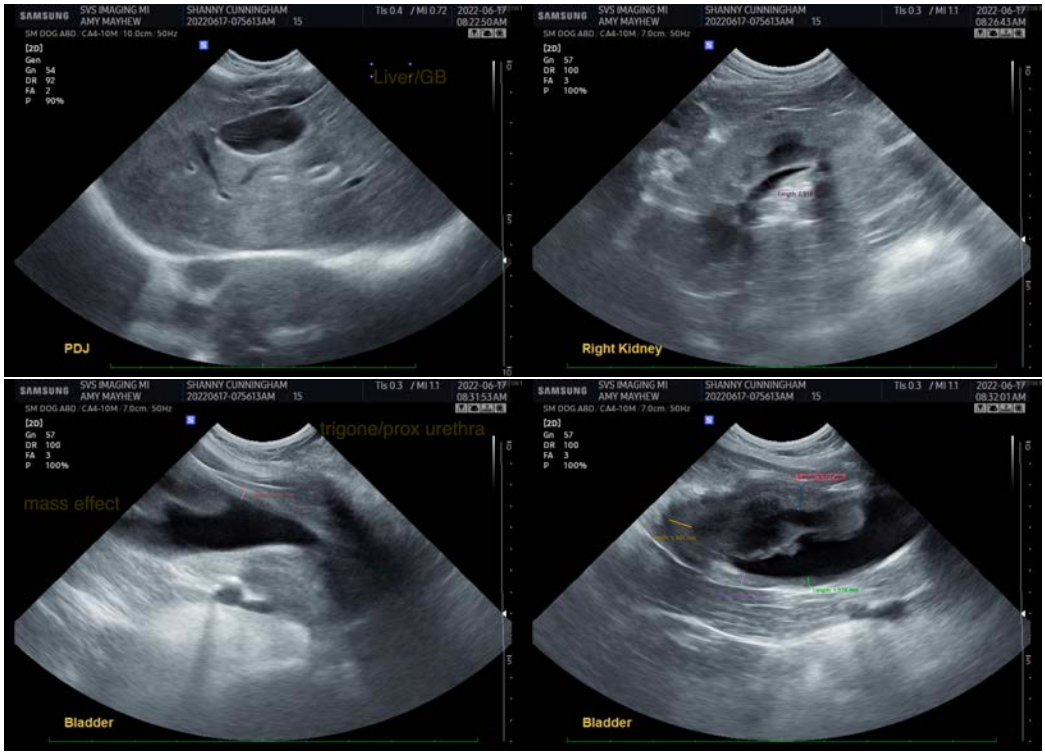

The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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.

Lisa Carioto, DVM, DVSc, Diplomate ACVIM

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