

PATIENT

Kona Lindgren

PRESENTING CLINICAL SIGNS

SPECIES

Canine

BREED

Mixed

SEX

Spayed Female

SEDATED- Gender (altered?): FS Age: 12 years, 1 month Weight in LBS: 37.5 lbs Breed: Mixed Breed History/reason for ultrasound: Recurring UTIs, Started last July. Started on Amoxicillin at the time, UA was rechecked and bacteriuria still present, cultured (grew Ecoli) and started Clavamox – UTI cleared. At the time, O had noticed blood in her urine once. No other clinical signs and has been doing well since. This year on routine senior labwork 5/14, marked cocci bacteriuria was again identified. There was also evidence of inflammation on UA- proteinuria, pyuria. O has not noted any clinical signs this time around. Started on Clavamox, rechecked UA on 6/7 and bacteriuria, pyuria, and proteinuria still present. Recommended complete abdo u/s; internist recommended ruling out evidence of pyelonephritis/other dz with ultrasound. Will repeat UA today +/- culture No overt physical abnormality; vulva does not appear recessed. Mild periodontal disease. Mild diffuse muscle atrophy. Unchanging cutaneous masses. Remainder of labwork overall WNL (mild elevations in triglycerides/lipase though suspect postprandial). USG generally around 1.023 Lab Work Attached for Review? Yes

ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN

AGE

12 Years

Urinary System

The **urinary bladder** is not fully distended. No abnormalities are noted with the trigone or proximal urethra. Multiple, hyperechoic structures casting acoustic shadows are noted along the ventral wall. The structures are consistent with cystoliths. A few of them measure 0.73 cm, 0.70 cm, and 1.05 cm in length. A large amount of free floating, mobile (“swirling”) sediment is observed, in addition to hyperechoic, “scintillating” sediment, that appears adhered to the mucosa. The wall is thickened and irregular in certain regions, for example, it measures (6.6 mm) along the dorsal wall. A polyploid cystitis may be developing along the dorsal wall, however, there is no evidence of a mass.

WEIGHT

37.5 Pounds

INTERPRETED BY

Lisa Carioto, DVM,
DVSc, Diplomate
ACVIM

Kidneys

The **left kidney** measures 6.52 cm. The capsule is smooth. Its overall architecture, including the definition of the cortico-medullary junction, is preserved. Mineralizations and very small nephroliths of the diverticulae and pelvis are present, without evidence of pyelectasia. Blood flow is within normal limits. The surrounding mesentery is not hyperechoic.

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Loetitia Saint-Jacques,
LVT

The **right kidney** measures at least 5.25 cm. The capsule is smooth. Its overall architecture, including the definition of the cortico-medullary junction, is preserved. Mineralizations and very small nephroliths of the diverticulae and pelvis are present, without evidence of pyelectasia. Blood flow is within normal limits. The surrounding mesentery is not hyperechoic.

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Aortic bifurcation/trifurcation

No abnormalities observed.

REFERRING VET

Dr. Alexis Hazelwood

Adrenal Glands

The **left adrenal gland** measures 0.56 cm at the cranial pole, 0.52 cm at the caudal pole. 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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Kona Lindgren The **right** adrenal gland measures 1.13 cm at the cranial pole, 0.62 cm at the caudal pole and 2.94 cm in length. A nodule is observed at the cranial pole. It measures 1.13 cm in diameter x 1.30 cm in length. The phrenico-abdominal vein and surrounding vasculature and mesentery are unremarkable.

SPECIES

Canine **Spleen**

The spleen is folded on itself, however, it is within normal limits in size, architecture, echotexture, and echogenicity. The capsule is smooth. Perivascular cuffing, consistent with myelolipomas, is observed. The latter are considered clinically insignificant. No abnormalities are observed with its vasculature, i.e. congestion and thrombi are not identified.

BREED

Mixed

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. A hypoechoic, mildly heterogenous nodule, measuring 1.40 cm in diameter x 0.97 cm in length, is noted. A second, mildly heterogenous nodule, measuring 0.93 cm in diameter x 1.55 cm in length, is noted. It has a mildly irregular border and with multiple pinpoint, hyperechoic foci, suggestive of fat, mineralization, and/or ischemia. A small, well-defined, hyperechoic nodule, 0.46 cm in diameter, is observed adjacent to the gallbladder. It is suggestive of mineralization and/or fat. No obvious abnormalities are noted with the hepatic vessels.

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The **gallbladder** (GB) wall is within normal limits in thickness and echogenicity. A moderate amount of free floating and gravity-dependent echogenic material is present within the GB. A nodule, suggestive of inspissated sludge, measuring 7.1 mm in diameter x 7.3 mm in length, is observed. The latter is not consistent with a tumour. The sludge extends into the cystic duct. There is no evidence of dilation or tortuosity of the common bile duct, i.e. there are no signs of an obstruction.

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Gastrointestinal

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

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LVT

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

Gas is present in the transverse colon.

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

Pancreas

The pancreas has a mildly coarse echotexture, which is likely due to age related changes, however, previous episodes of pancreatitis cannot be excluded. There are no signs of active pancreatitis or neoplasia.

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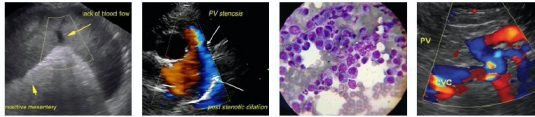
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Other

Lymph nodes

SPECIES

A couple of mildly hypoechoic mesenteric lymph nodes are observed. For example, the larger one, measuring 0.50 cm in diameter x 2.18 cm in length is mildly to moderately hypoechoic. The second, measuring, 0.41 cm x 0.92 cm is less hypoechoic than the first.

Canine

Abdominal effusion is not visualized.

BREED

Heart

Mixed

A brief video clip of the heart was submitted. Pericardial and pleural effusion are not identified. There is no evidence of a mass in any of the cardiac chambers, including the right auricle. No obvious abnormalities with contractility (measurements not performed).

SEX

ULTRASONOGRAPHIC FINDINGS

Spayed Female

- **Urinary bladder:** Multiple **cystoliths** and **sediment**, in addition to **mild thickening and irregularity of the mucosa** is present, which may be due to an underlying urinary tract infection.

AGE

12 Years

- **Kidneys:** Very mild mineralizations may be due to age-related changes, genetics, as well as diet. Other subtle changes are suggestive of age-related degeneration. A diagnosis of pyelonephritis cannot be excluded despite the absence of classical sonographic signs.

WEIGHT

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- **Lymph nodes:** The size of the mesenteric lymph nodes is not considered abnormal.

- **Pancreas:** Although changes are suggestive of age-related changes, previous episodes of pancreatitis cannot be excluded. There are no signs of active pancreatitis or neoplasia.

INTERPRETED BY

Lisa Carioto, DVM,
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ACVIM

- **Liver:** The hypoechoic nodules are most likely due to nodular hyperplasia. The single hyperechoic nodule may be due to fat and/or mineralization. Target-like lesions are not visualized, i.e. signs of neoplasia are not evident.

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LVT

- **Gallbladder:** The gallbladder **sludge** is most likely clinically insignificant. However, it may cause signs of gastroesophageal reflux disease (GERD), in some patients. Obtaining a history regarding signs of GERD from the client is suggested. Treatment with an anti-acid, proton pump inhibitor or ursodeoxycholic acid, may be considered.

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- **Adrenal glands:** Although a nodule is noted at the cranial pole of the **right** gland, signs of neoplasia are not appreciated. Differential diagnoses include a benign adenoma, and/or lipoma. Hyperadrenocorticism (HAC) is considered highly unlikely.

REFERRING VET

Dr. Alexis Hazelwood

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

A cystolith should be crushed, in addition to a biopsy of the bladder mucosa, and submitted for culture to exclude a deeper infection (polyploid cystitis), as a few weeks of antibiotics may be required if the latter is present. The two may be submitted as one sample to decrease costs.

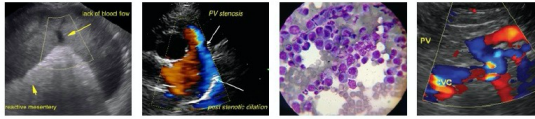
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Histopathology of a biopsy of the bladder mucosa.

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Portable Animal Western Sonography, Inc.

IMAGING PERFORMED BY
pawsonography@gmail.com 530-786-8340

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An appropriate diet should be fed based on cystolith analysis.

SPECIES

Canine

Ensure adequate water consumption (i.e., canned food should be prioritized, or as much water as possible should be added to dry food).

Allow for frequent voiding; if once daily antibiotics are administered, give at night, etc.

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Basic urine hygiene to decrease risk of recurrence of infections.

Analgesia (e.g., gabapentin), pending cystostomy, if Kona develops signs of pollakiuria, stranguria or dysuria.

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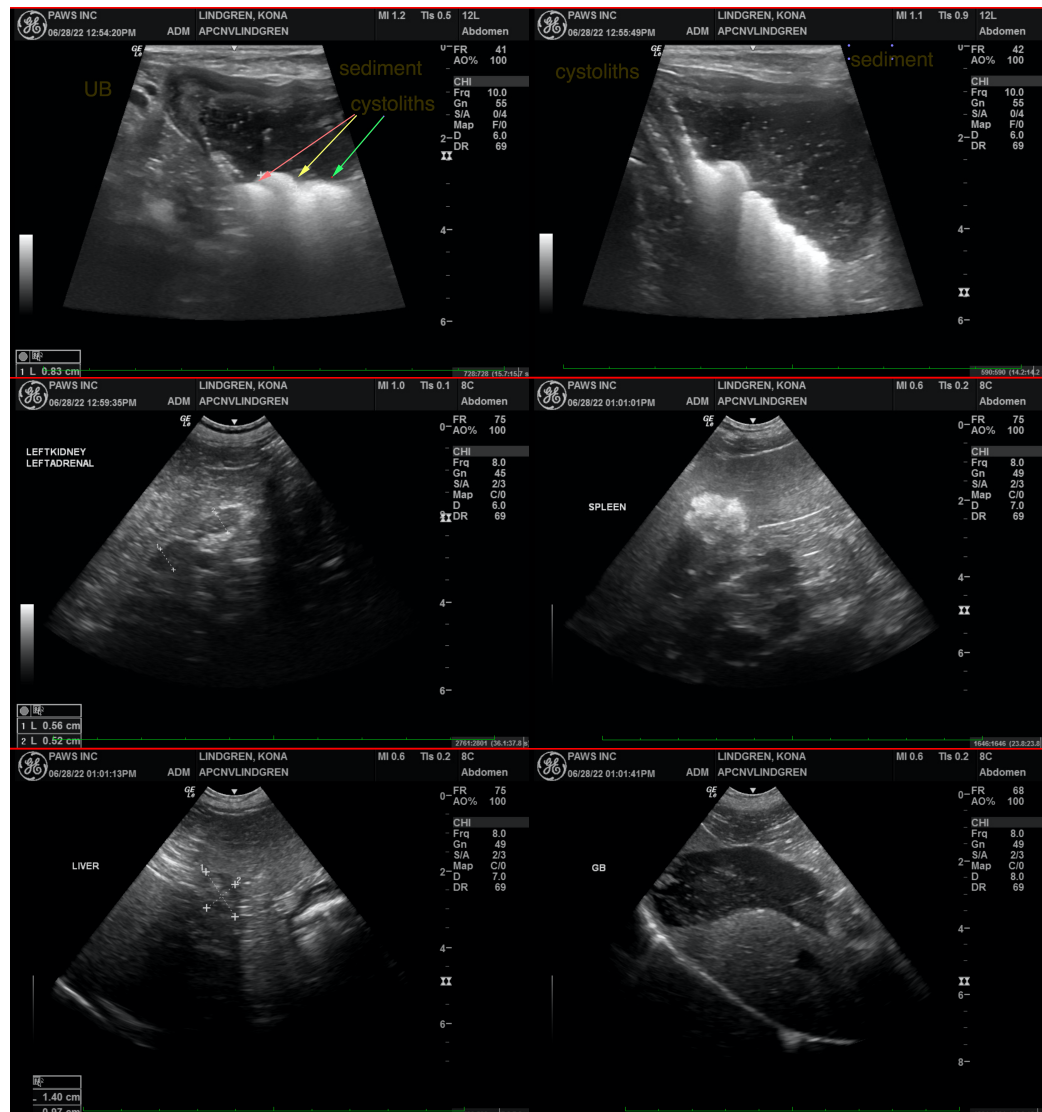
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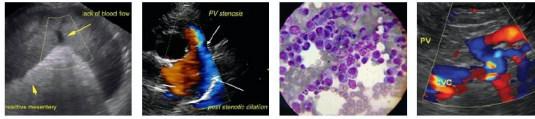
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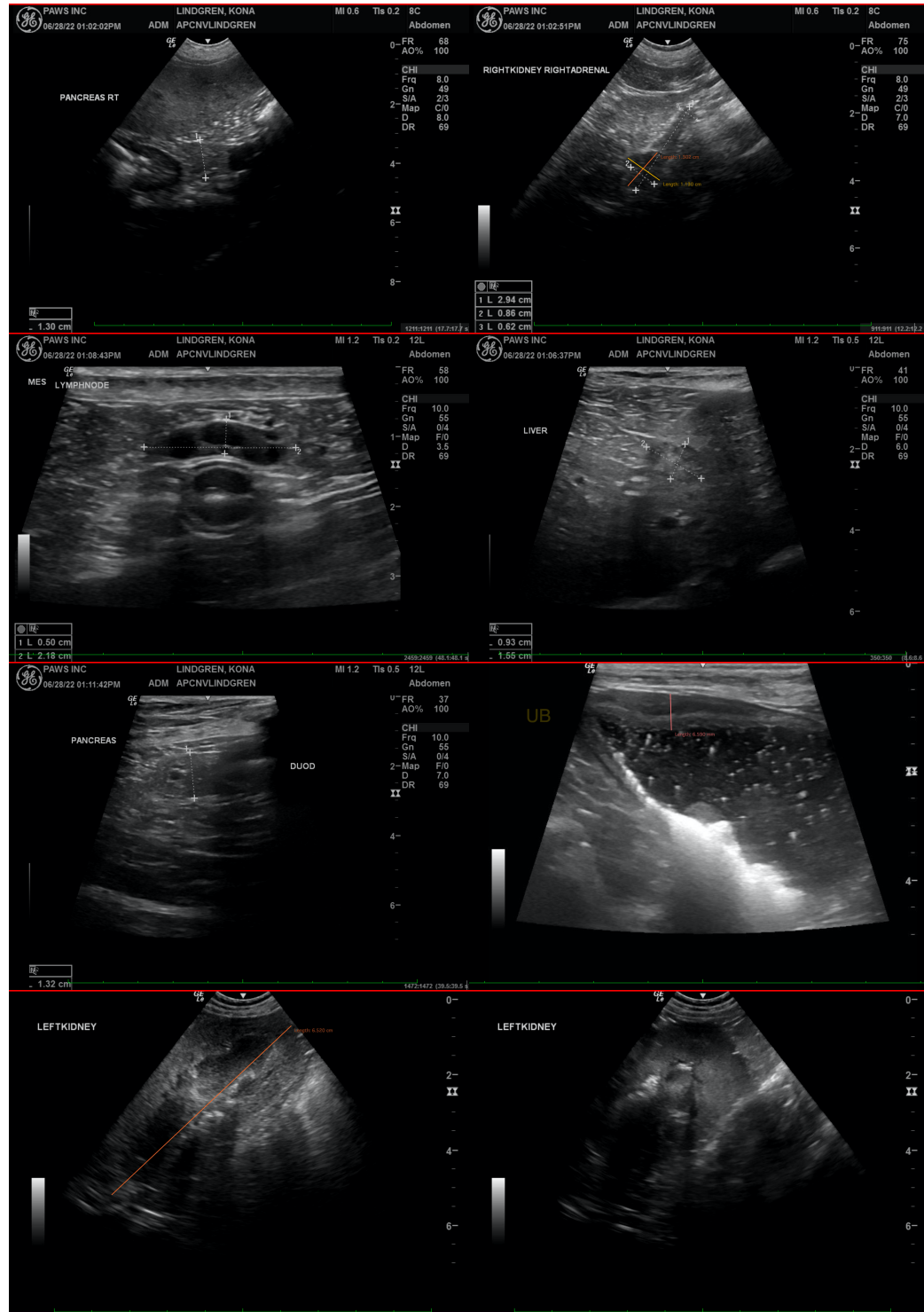
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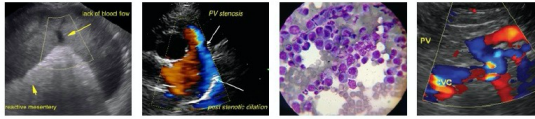
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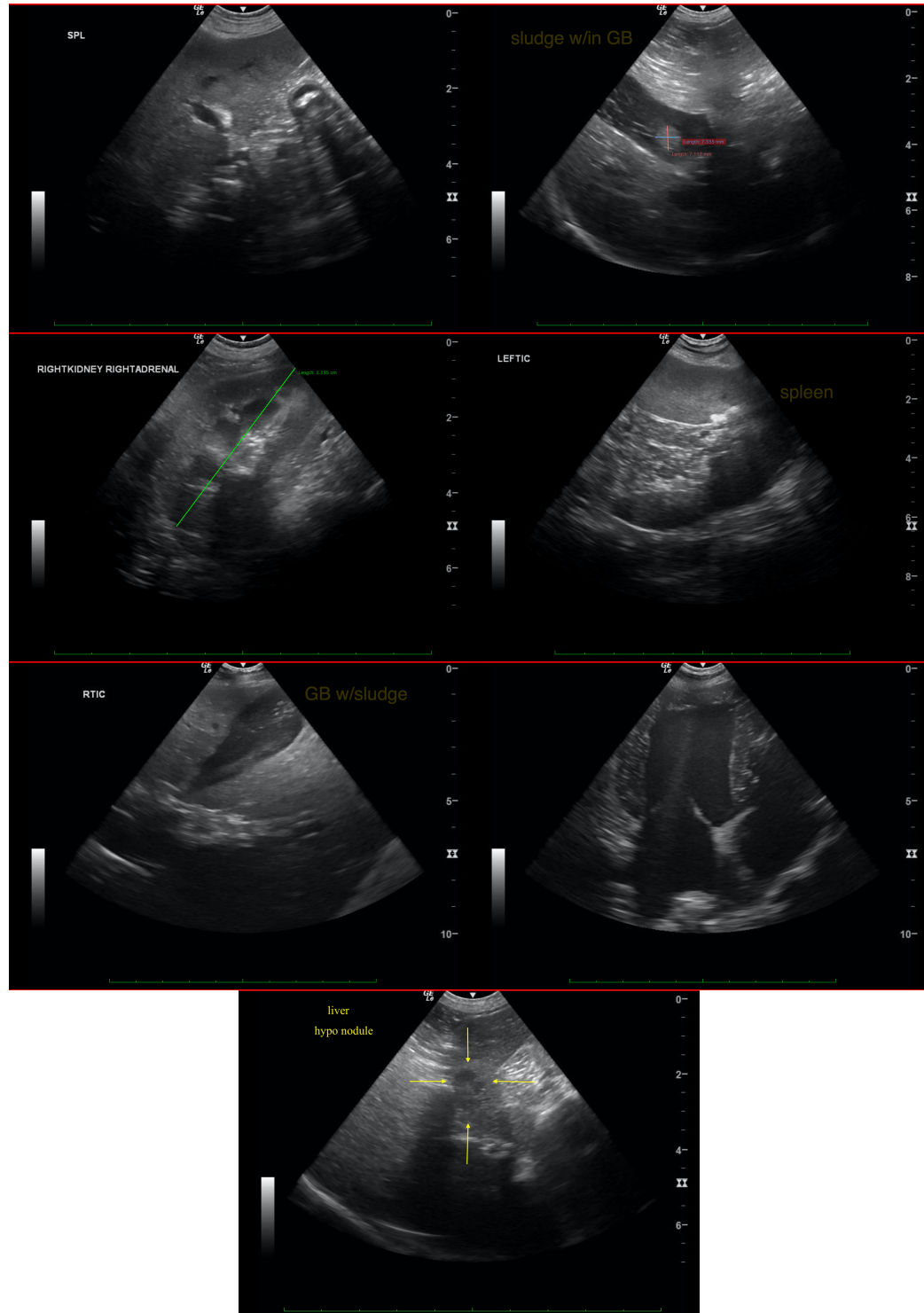
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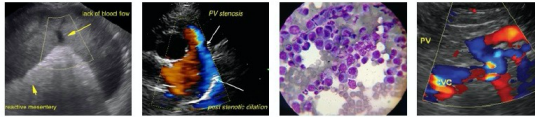
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Kona Lindgren **The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.**

SPECIES

Canine 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.

BREED

Mixed Lisa Carioto, DVM, DVSc, Diplomate AVIM
Lisa.Carioto@sonopath.com

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