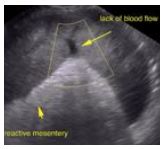
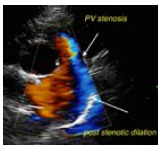
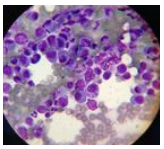
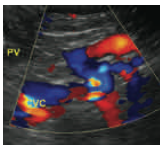
SonoPath
Clinical Sonography & Telecytology
EDUCATIONAL TELECONSULTATION SERVICES™

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

PATIENT
Cinnamon Savin

SPECIES
Canine

BREED
Mmix

SEX
Spayed Female

AGE
13 years

WEIGHT
52.8 lbs

INTERPRETED BY
Lisa Carioto, DVM, DVSc, Diplomate ACVIM

IMAGING PERFORMED BY
Shari Reffi, CVT

HOSPITAL NAME
Livingston AH

REFERRING VET
Dr. Messina

INVOICE
30732

DATE
5/25/22

PRESENTING CLINICAL SIGNS

History: Check for systemic causes of arrhythmia and intermittent VPC's, Hx of CRD, chronic valvular disease- stable (8/9/21) mild pulmonary hypertension stable Current meds: Vetmedin 10mg 3/4T BID, Omega 3 FA 200mg SID, Dasuquin Adv 1 chew SID, Galliprant 60mh 1T SID, Gabapentin 600mg 1/T BID
Abnormal PE/Chem/CBC/UA Results: SDMA 21, Creat 1.8

ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN

Urinary System

The urinary bladder is poorly distended with anechoic contents. The wall may be very mildly irregular at the apex. No abnormalities are noted with the trigone or proximal urethra, and there is no evidence of sediment, cystoliths, polyps or a mass.

Kidneys

The **left** kidney measures 5.62 cm. The capsule is smooth. The cortex is mildly hyperechoic and a mild loss of the normal definition of the cortico-medullary junction is present. Very mild mineralization of the diverticulae and pelvis are present, without evidence of nephroliths or pyelectasia. Blood flow is within normal limits. The surrounding mesentery is not hyperechoic.

The **right** kidney measures 5.63 cm. Findings are similar to the left kidney.

Aortic bifurcation/trifurcation

No abnormalities observed.

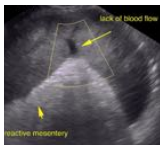
Adrenal Glands

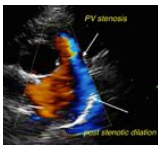
The **left** adrenal gland measures 0.46 cm at the cranial pole, 0.51 cm at the caudal pole and 2.30 cm in length. A mildly irregular hypoechoic nodule (almost triangular in shape), measuring 0.45 cm in diameter x 0.77 cm in length is noted. The phrenico-abdominal vein and surrounding vasculature and mesentery are unremarkable.

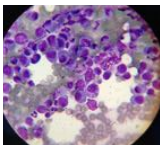
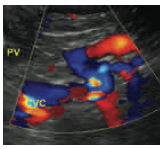
The **right** adrenal gland measures 1.30 cm at the cranial pole, 0.31 cm at the caudal pole and 2.16 cm in length. The cranial pole is “replaced” by a heterogeneous nodule. The nodule measures 1.30 cm in diameter x 1.06 cm in length. A smaller, discrete, hypoechoic nodule, measuring 0.77 cm in diameter x 0.50 cm in length is observed with the nodule, closer toward the center of the adrenal gland. A hyperechoic area is present within the smaller nodule, which may be due to fat, fibrosis and/or mineralization. The phrenico-abdominal vein and surrounding vasculature and mesentery are unremarkable.

Spleen

The spleen is within normal limits in size, architecture, echotexture, and echogenicity. The capsule is smooth. A subcapsular, well circumscribed, hyperechoic nodule, is noted, which is most likely a





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

PATIENT

Cinnamon Savin

SPECIES

Canine

BREED

Mmix

SEX

Spayed Female

AGE

13 years

WEIGHT

52.8 lbs

INTERPRETED BY

Lisa Carioto, DVM, DVSc, Diplomate ACVIM

IMAGING PERFORMED BY

Shari Reffi, CVT

HOSPITAL NAME

Livingston AH

REFERRING VET

Dr. Messina

INVOICE

30732

DATE

5/25/22

lipogranuloma. Other differential diagnoses include mineralization or fibrosis. Mild perivascular cuffing, consistent with myelolipomas is observed; these are not considered clinically significant. No abnormalities are observed with its vasculature, i.e. congestion and thrombi are not identified.

Liver

There are no obvious signs of hepatomegaly. The liver's borders are smooth, but mildly rounded. The liver's echotexture is homogeneous, but mildly hyperechoic (i.e. slightly hyperechoic to the falciform fat). No abnormalities are observed with the hepatic vessels visualized.

The gallbladder 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. Formed stools are present within the colon.

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

Pancreas

The left limb of the pancreas has a mildly coarse echotexture, which is considered secondary to age related changes, however, previous episodes of pancreatitis cannot be excluded.

No overt abnormalities are observed with the echogenicity or echotexture of the right limb. There is no evidence of hyperechogenicity of the surrounding mesentery.

There are no signs of active pancreatitis or neoplasia.

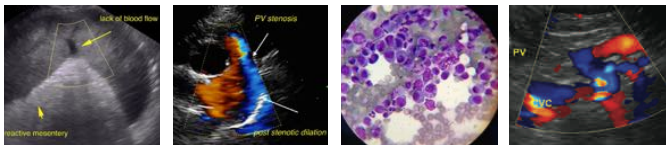
Other

Lymph nodes

No abnormalities are observed

Abdominal effusion is not visualized.

SonoPath
Clinical Sonography & Telecytology
EDUCATIONAL TELECONSULTATION SERVICES™



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

PATIENT

Cinnamon Savin

SPECIES

Canine

BREED

Mmix

SEX

Spayed Female

AGE

13 years

WEIGHT

52.8 lbs

INTERPRETED BY

Lisa Carioto, DVM, DVSc, Diplomate ACVIM

IMAGING PERFORMED BY

Shari Reffi, CVT

HOSPITAL NAME

Livingston AH

REFERRING VET

Dr. Messina

INVOICE

30732

DATE

5/25/22

ULTRASONOGRAPHIC FINDINGS

- **Adrenal glands**: The mildly irregular, hypoechoic nodule of the cranial pole of the **left** gland may be due nodular hyperplasia. A punctate hyperechoic area is present within the center of the hypoechoic nodule. The hyperechoic nodule may be due to fat, fibrosis and/or mineralization. A benign adenoma cannot be excluded. It is not suggestive of neoplasia. The heterogeneous nodule of the cranial pole of the **right** gland may also be a benign adenoma. However, a carcinoma or pheochromocytoma cannot be excluded. Other changes within the nodule of the cranial pole are suggestive of nodular hyperplasia, fat, fibrosis and/or mineralization. Cavitary lesions are not visualized, however, hemangiosarcoma or pheochromocytoma could cause an intermittent arrhythmia.

- **Liver**: The diffuse hyperechogenicity of the liver is suggestive of a vacuolar hepatopathy, which may occur due to stress (chronic illness), administration of steroids or hyperadrenocorticism (HAC). Other causes of a diffusely hyperechoic liver, such as, hepatitis, cholestasis and cholangitis/cholangiohepatitis are considered less likely.

- **Gallbladder sludge**: Most likely clinically insignificant, however, gastroesophageal reflux disease (GERD), may occur in some patients. Obtaining a history regarding signs of GERD from the client is suggested.

- **Spleen**: The myelolipomas and lipogranulomas are considered clinically insignificant. There are no obvious signs of neoplasia.

- **Pancreas**: Subtle age-related changes are noted with the pancreas. There are no signs of active pancreatitis or neoplasia.

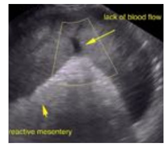
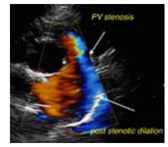
- **Kidneys**: Very subtle renal changes are present, which are suggestive of age related degeneration.

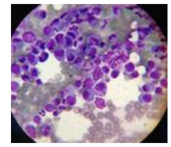
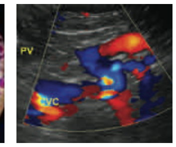
- **Urinary bladder**: The mucosa is mildly irregular at the apex, which may be due to a subclinical urinary tract infection, however, it may be due to artefact caused by underfilling.

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

The following are suggested

- An arterial blood pressure
- Evaluation of the urine for catecholamines, metanephrine, etc. to help exclude a pheochromocytoma.
- Examination of Cinnamon's body for cutaneous or subcutaneous masses for possible dermal or subcutaneous hemangiosarcoma, which could, theoretically, cause an arrhythmia.
- Although the echocardiogram did not show abnormalities as the primary cause of the premature ventricular contractions, myocarditis is not always evident, therefore, a SNAP 4Dx, urinalysis and urine protein: creatinine ratio and *Leptospira* spp. PCR are suggested to exclude myocarditis and glomerulonephritis and the arrhythmia.
- One may also consider re-evaluating the adrenal glands sonographically in 4 to 6 weeks.

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

PATIENT

Cinnamon Savin

SPECIES

Canine

BREED

Mmix

SEX

Spayed Female

AGE

13 years

WEIGHT

52.8 lbs

INTERPRETED BY

Lisa Carioto, DVM, DVSc, Diplomate ACVIM

IMAGING PERFORMED BY

Shari Reffi, CVT

HOSPITAL NAME

Livingston AH

REFERRING VET

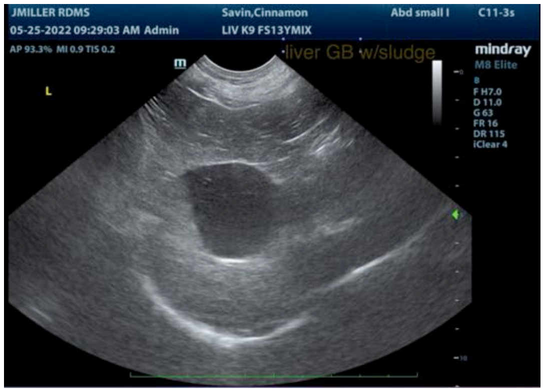
Dr. Messina

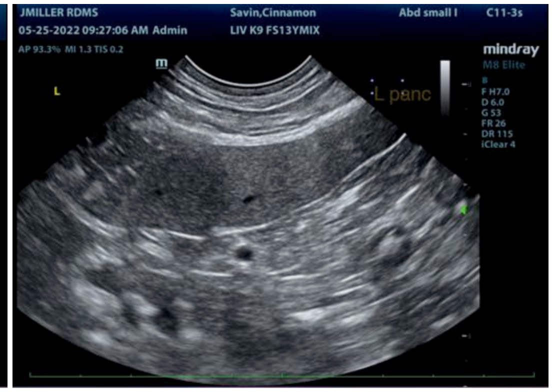
INVOICE

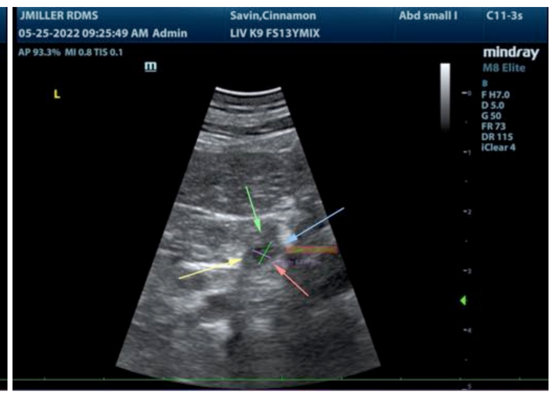
30732

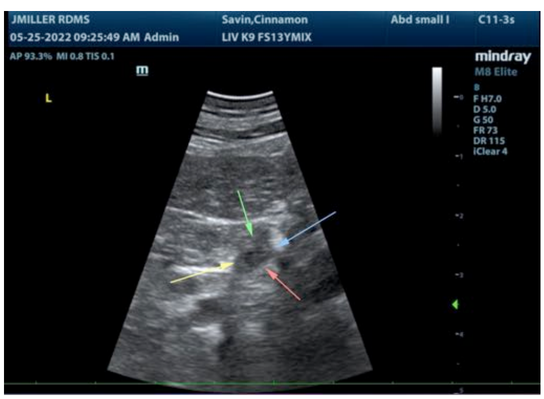
DATE

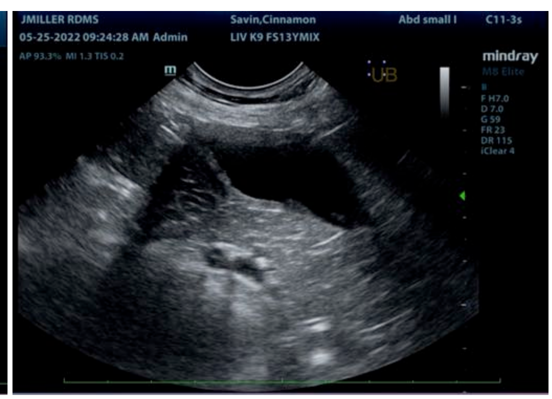
5/25/22

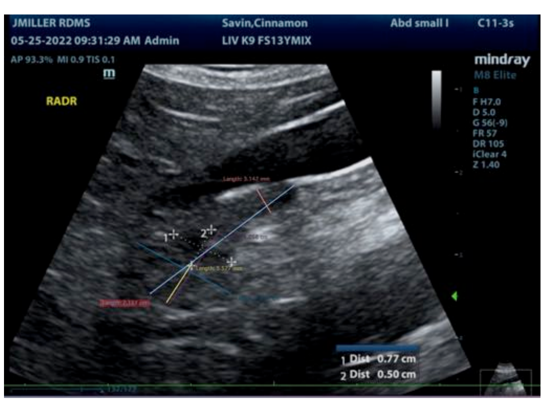


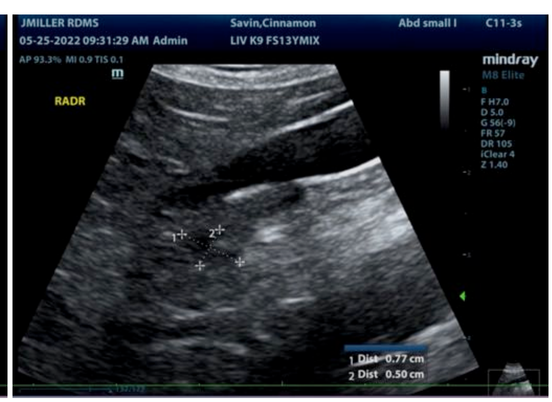




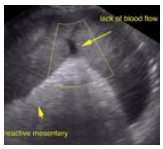
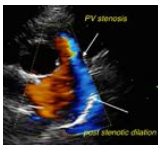
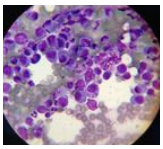
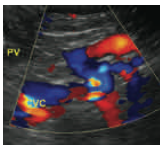








SonoPath
Clinical Sonography & Telecytology
EDUCATIONAL TELECONSULTATION SERVICES™

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

PATIENT

Cinnamon Savin

SPECIES

Canine

BREED

Mmix

SEX

Spayed Female

AGE

13 years

WEIGHT

52.8 lbs

INTERPRETED BY

Lisa Carioto, DVM, DVSc, Diplomate ACVIM

IMAGING PERFORMED BY

Shari Reffi, CVT

HOSPITAL NAME

Livingston AH

REFERRING VET

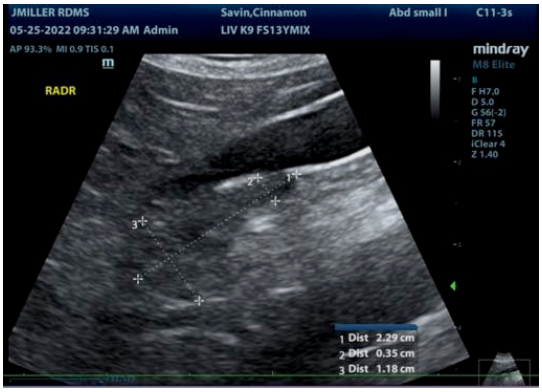
Dr. Messina

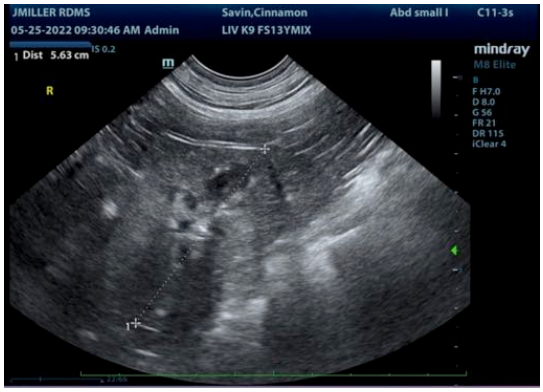
INVOICE

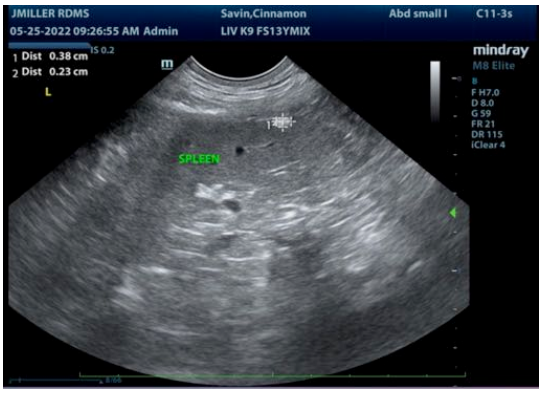
30732

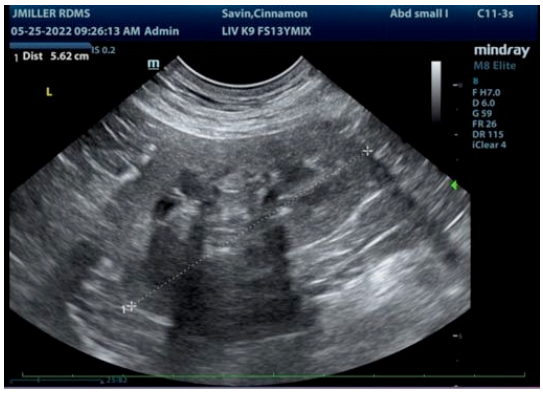
DATE

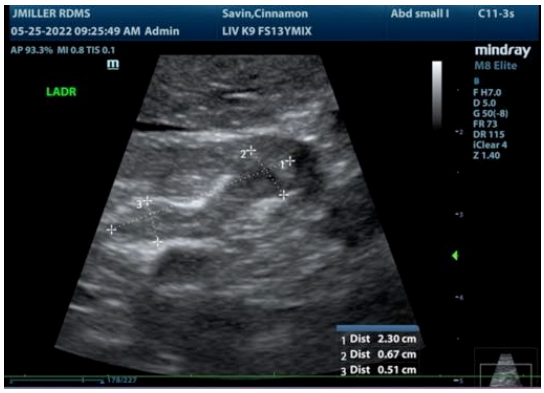
5/25/22











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

Lisa.Carioto@sonopath.com