**PATIENT**

Charlie Mittlestat

SPECIES

Canine

BREEDCavalier King Charles
Spaniel**SEX**

Neutered Male

AGE

7 years

WEIGHT

33 lbs

INTERPRETED BYLisa Carioto, DVM,
DVSc, Diplomate
ACVIM**IMAGING
PERFORMED BY**

Amy Mayhew LVT

HOSPITAL NAME

SVS Imaging Michigan

REFERRING VETDr. Fit'z Bayside
Animal Clinic**INVOICE**

31791

DATE

7/19/22

PRESENTING CLINICAL SIGNS

History: Increased liver enzymes, pet has been on Canine Hepatic support for the last couple of months. All other symptoms normal.

Abnormal PE/Chem/CBC/UA Results: ALKP was 558 in Nov, 1050 in Jan, PE = WNL

ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN**Urinary System**

The **urinary bladder** is not fully distended, however, its contents are anechoic. The wall is thin, but mildly irregular, which may be due to incomplete filling of the bladder. No abnormalities are noted with the trigone or proximal urethra, and there is no evidence of sediment, cystoliths, polyps or a mass.

The **prostate** is homogenous and measures 0.70 cm; within normal limits for a neutered male.

Kidneys

The **left kidney** measures 5.80 cm. The capsule is smooth. Its overall architecture, including the definition of the cortico-medullary junction, is preserved. There are no signs of nephroliths or pyelectasia. An accumulation of intrapelvic fat is noted, in addition to small numbers of pinpoint mineralizations at the junction of the cortex and medulla. The surrounding mesentery is not hyperechoic.

The **right kidney** measures 5.57 cm. Its overall architecture, including the definition of the cortico-medullary junction, is preserved. There are no signs of nephroliths or pyelectasia. An accumulation of intrapelvic fat is noted, in addition to small numbers of pinpoint mineralizations at the junction of the cortex and medulla. The surrounding mesentery is not hyperechoic.

Aortic bifurcation/trifurcation No abnormalities observed.

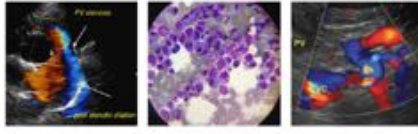
Adrenal Glands

The **left adrenal gland** measures 0.61 cm at the cranial pole, 0.54 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.

The **right adrenal gland** measures 0.63 cm at the cranial pole, 0.60 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.

Spleen

The spleen is within normal limits in size, architecture, echotexture, and echogenicity. The capsule is smooth. A couple of hypoechoic nodules are observed mid body, one of which measures 0.33 cm in diameter. A hypoechoic nodule measuring 0.30 cm in diameter x 0.33 cm in length is noted toward the head. No abnormalities are observed with its vasculature, i.e. congestion and thrombi are not identified.

**PATIENT**

Charlie Mittlestat

SPECIES

Canine

BREEDCavalier King Charles
Spaniel**SEX**

Neutered Male

AGE

7 years

WEIGHT

33 lbs

Liver

There are no obvious signs of hepatomegaly and its borders are smooth, however, they vary between sharp to mildly rounded. It is mildly hyperechoic, and a diffuse, mildly coarse or granular echotexture is observed. Focal lesions are not observed and no abnormalities are noted with the hepatic vessels.

The **gallbladder** (GB) is mildly distended with a moderate to large amount of free floating and gravity dependent echogenic material (sludge). The GB wall is within normal limits in thickness and echogenicity. 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. The parenchyma surrounding the GB is not hyperechoic.

Gastrointestinal

A large amount of 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. Subjectively, the muscularis is mildly thickened, i.e., it is equal to the mucosa, and mild fogging of the muscularis is present. Peristalsis is difficult to comment on due to panting artifact.

Duodenum: A large amount of gas and fluid are present within the lumen of the duodenum. Mild fogging of the mucosa is present.

Jejunum: The small intestinal wall thickness 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.

INTERPRETED BYLisa Carioto, DVM,
DVSc, Diplomate
ACVIM**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.

IMAGING PERFORMED BY

Amy Mayhew LVT

Other

Lymph nodes No abnormalities are observed

Abdominal effusion is not visualized.

HOSPITAL NAME

SVS Imaging Michigan

ULTRASONOGRAPHIC FINDINGS**REFERRING VET**Dr. Fit'z Bayside
Animal Clinic

- **Liver:** A mild reactive hepatopathy may be present (mildly coarse or granular echotexture), which is a non-specific change. It could be secondary to an inflammatory hepatopathy (i.e., bacterial cholangiohepatitis, chronic active hepatitis), or copper hepatopathy. Leptospirosis is considered less likely. Additional inquiries regarding exposure to tick or other vector-borne diseases are recommended, in addition to medications and natural supplements, raw-meat diets (bacterial hepatopathies), as well as travel history. There are no signs of target lesions or infiltrative disease, such as neoplasia.

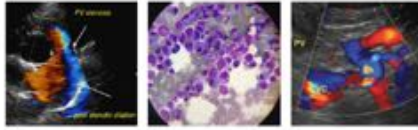
INVOICE

31791

- **Gallbladder:** Gallbladder **sludge** is most likely clinically insignificant, however, gastroesophageal reflux disease (GERD), can occur in some patients. Obtaining a history

DATE

7/19/22

**PATIENT**

Charlie Mittlestat

regarding signs of GERD from the client is suggested. Treatment with an anti-acid or proton pump inhibitor may be required.

SPECIES

Canine

- **Spleen:** Differential diagnoses for the hypoechoic nodules include nodular or lymphoid hyperplasia, as well as extramedullary hematopoiesis. Neoplasia is considered unlikely.

BREEDCavalier King Charles
Spaniel

- **Gastrointestinal (GI) tract:** Subtle and somewhat GI changes are present. Although they may not be clinically significant, they can be consistent with inflammation in some individuals, (e.g. chronic enteropathy). Further evaluation for intermittent vomiting, signs of GERD and pica may warrant a diet change.

SEX

Neutered Male

- **Kidneys:** Very subtle and early age-related changes are noted.
- **Urinary bladder:** The mildly irregular wall is likely due to incomplete filling of the bladder.

AGE

7 years

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

Depending on how proactive the clients would like to be, one could start by performing a fine needle aspirate or biopsy of the liver (pending a coagulation profile), or one could pursue the following:

Evaluation of medications, natural supplements, etc. travel history.

WEIGHT

33 lbs

Exclude possibility of topical steroids, including steroids client may be using that Charlie may be ingesting inadvertently (licking of clients' arms, legs, etc.).

INTERPRETED BYLisa Carioto, DVM,
DVSc, Diplomate
ACVIM

Obtain a history regarding signs of GERD from the client. Treatment with an anti-acid, proton pump inhibitor may be required depending on the history.

Deworm with fenbendazole, in case of aberrant parasitic infection

SNAP 4Dx

IMAGING PERFORMED BY

Amy Mayhew LVT

Differential diagnoses include cholecystitis, cholangitis/cholangiohepatitis, and secondary ascending bacterial infections. Although indiscriminate use of antibiotics is not recommended, consider broad-spectrum antibiotic with reassessment of liver enzymes, including GGT, in a few weeks, while *still receiving* the antibiotics. If an improvement is observed, continue antibiotic for an additional two weeks.

HOSPITAL NAME

SVS Imaging Michigan

A fine needle aspirate or (ideally) a tissue biopsy could be performed if an improvement is not observed after evaluating the above tests (pending a coagulation profile).

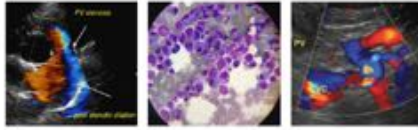
Note, vitamin K (0.5 mg/kg SQ for 1 dose) is suggested 30-60 minutes prior to the procedure, even if PT/PTT are within normal limits.

REFERRING VETDr. Fit'z Bayside
Animal Clinic**INVOICE**

31791

DATE

7/19/22



PATIENT

Charlie Mittlestat

SPECIES

Canine

BREED

Cavalier King Charles
Spaniel

SEX

Neutered Male

AGE

7 years

WEIGHT

33 lbs

INTERPRETED BY

Lisa Carioto, DVM,
DVSc, Diplomate
ACVIM

**IMAGING
PERFORMED BY**

Amy Mayhew LVT

HOSPITAL NAME

SVS Imaging Michigan

REFERRING VET

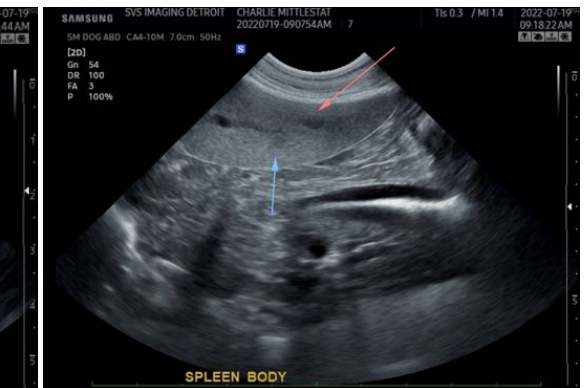
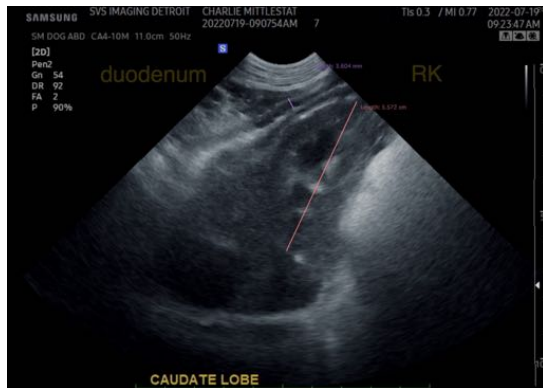
Dr. Fit'z Bayside
Animal Clinic

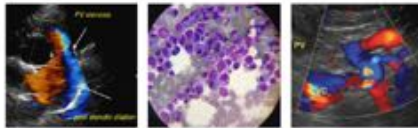
INVOICE

31791

DATE

7/19/22





PATIENT

Charlie Middlestat

SPECIES

Canine

BREED

Cavalier King Charles
Spaniel

SEX

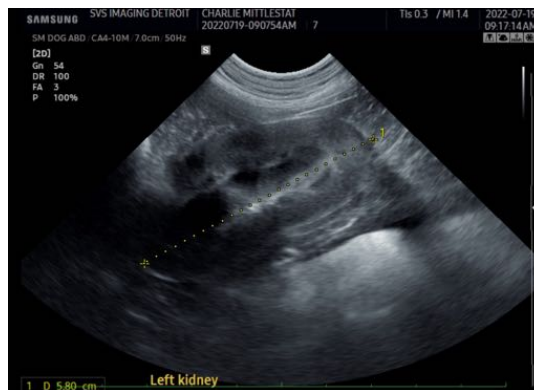
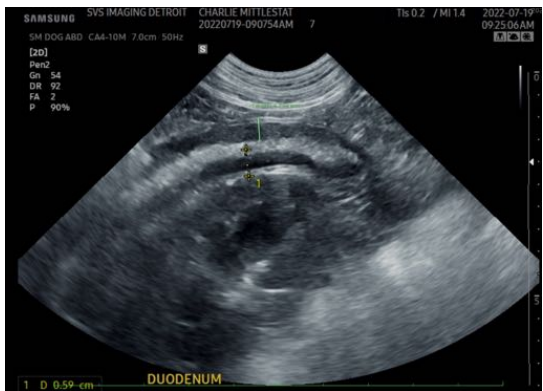
Neutered Male

AGE

7 years

WEIGHT

33 lbs



INTERPRETED BY

Lisa Carioto, DVM,
DVSc, Diplomate
ACVIM

**IMAGING
PERFORMED BY**

Amy Mayhew LVT

HOSPITAL NAME

SVS Imaging Michigan

REFERRING VET

Dr. Fit'z Bayside
Animal Clinic

INVOICE

31791

DATE

7/19/22

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