



PATIENT

Ace Sypher

SPECIES

Canine

BREED

Bedlington Terrier

SEX

Intact male

AGE

13 years

WEIGHT

7.3 kg

INTERPRETED BY

Lisa Carioto, DVM,
DVSc, Diplomate
ACVIM

**IMAGING
PERFORMED BY**

Erin Wicks

HOSPITAL NAME

Shores VEC

REFERRING VET

Dr. Moser

INVOICE

30342

DATE

5/13/22

PRESENTING CLINICAL SIGNS

History: Presented at our hospital for AUS. Started last summer with soft stools occasionally. Last fall seemed to age drastically. Took to rdvm and liver and kidney values were off (November). Recheck bloodwork shows progression of increase in liver and kidney values. Rdvm rec AUS. Previous Health Concerns: Abscess on jaw (treated at rdvm), heart murmur Current Medications: Amoxi, Mirtazapine, Denamarin, Benazepril, Pepcid Appetite/When did they eat last: last night
Abnormal PE/Chem/CBC/UA Results: Rdvm bloodwork 3/15/22: ALT 346; BUN/UREA 75; CREA 2.8; SDMA 24 Rdvm bloodwork 4/19/22: ALT 1447; AST 154; BUN/UREA 92; CREA 3.7; SDMA 26

ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN

Urinary System

The urinary bladder is not very well filled, thereby affecting the ability to accurately measure wall thickness. The wall appears very mildly irregular at the apex and at the junction of the apex and dorsal and ventral walls. No abnormalities are noted with the trigone and there is no evidence of sediment, cystoliths, polyps or a mass. The proximal urethra is not visualized due to interference from the GI tract.

Prostate

An oblique view of a portion of the prostate is available for review. It is homogenous and within normal limits for an intact male.

Kidneys

The **left** kidney measures 4.61 cm. The capsule is mildly irregular. The cortex appears thinner than usual and is hyperechoic, i.e. it is isoechoic to the spleen. A mild loss of the normal definition of the cortico-medullary junction is present. Small, punctate mineralizations of the diverticulae and pelvis are present, without evidence of nephroliths. Areas of hyperechogenicity are present throughout the cortex and pelvis that are suggestive of inflammation, ischemia or fibrosis. Pyelectasia is present 1.86 mm (longitudinal view). Blood flow appears adequate in the cranial portion (caudal portion not evaluated due to interference with Doppler). The surrounding mesentery is mildly hyperechoic (it is isoechoic to the kidney).

The **right** kidney measures 4.24 cm. The capsule is very mildly irregular. The cortex appears thinner than usual and is hyperechoic, i.e. it is hyperechoic to the liver. A mild loss of the normal definition of the cortico-medullary junction is present. The mineralizations of the diverticulae and pelvis are more severe in the right kidney compared to the left. There are no obvious nephroliths. Areas of hyperechogenicity are present throughout the cortex and pelvis that are suggestive of inflammation, ischemia or fibrosis. The pelvis appears more hyperechoic in the right kidney compared to the left. Pyelectasia is present 1.70 mm (longitudinal view).

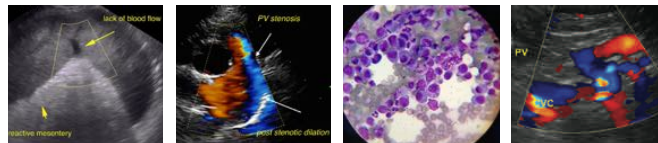
Aortic bifurcation/trifurcation

No abnormalities observed.

Adrenal Glands



PATIENT	The left adrenal gland measures 0.48 cm at the cranial pole, 0.36 cm at the caudal pole and 1.50 cm in length. The caudal pole is slightly flatter compared to the cranial pole. There is no evidence of a mass. No abnormalities are noted with the gland's overall architecture, echogenicity or echotexture. The phrenico-abdominal vein and surrounding vasculature and mesentery are unremarkable.
Ace Sypher	
SPECIES	The right adrenal gland measures 0.46 cm at the cranial pole, 0.44 cm at the caudal pole and 1.61 cm in length. No abnormalities are noted with the gland's overall architecture, echogenicity or echotexture. The phrenico-abdominal vein and surrounding vasculature and mesentery are unremarkable.
Canine	
BREED	
Bedlington Terrier	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.
SEX	
Intact male	
AGE	Liver
13 years	There are no obvious signs of hepatomegaly and its borders are smooth, but very mildly rounded. The liver's echotexture is homogeneous, however, it is slightly more granular or coarse than usual. It is also hyperechoic (i.e., it is isoechoic to the spleen). Ill-defined hyperechoic areas dispersed throughout the parenchyma are noted in the caudate lobe. Focal lesions are not observed. Subjectively, the hepatic vessels appear mildly congested.
WEIGHT	The gallbladder (GB) is moderately dilated, however, its contents are primarily anechoic, i.e. a scant amount of echogenic material is noted. The dilation may be due to the fact that Ace was fasted. The GB wall is within normal limits in thickness and echogenicity. However, the parenchyma surrounding the ventral portion of the GB is moderately hyperechoic, which may be suggestive of inflammation. 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.
7.3 kg	
INTERPRETED BY	Gastrointestinal
Lisa Carioto, DVM, DVSc, Diplomate ACVIM	The gastric wall is within normal limits in thickness and the wall layers are well defined. No obvious abnormalities are observed with its peristalsis.
IMAGING PERFORMED BY	The duodenum is within normal limits in thickness. The definition of wall layers is preserved.
Erin Wicks	The small intestinal wall thickness is within normal limits and the definition of the wall layers is preserved, however subjectively, the mucosa of the jejunum is diffusely echogenic, which is suggestive of fogging. Abnormally dilated loops of bowel are not observed.
HOSPITAL NAME	The colonic wall is not thickened and mural detail is considered normal.
Shores VEC	There are no obvious signs of a mass, foreign body or an obstruction in the gastrointestinal tract. However, the mesentery is diffusely hyperechoic, despite the absence of severe GI abnormalities. This may occur secondary to inflammation.
REFERRING VET	
Dr. Moser	Pancreas
INVOICE	
30342	
DATE	
5/13/22	



PATIENT	The pancreas has a mildly coarse echotexture, and is not overtly hypoechoic, however, the surrounding mesentery is mildly hyperechoic.
Ace Sypher	
SPECIES	Other
Canine	Lymph nodes
BREED	A splenic lymph node is observed. It is mildly enlarged and “plump”, measuring 0.57 cm in diameter x 1.03 cm in length. The mesentery surrounding the lymph node is moderately hyperechoic.
Bedlington Terrier	A mesenteric lymph node is also more plump than usual, although it remains within the normal reference range. It may appear more prominent because the surrounding mesentery is quite hyperechoic.
SEX	
Intact male	Abdominal effusion is not visualized.
AGE	
13 years	
WEIGHT	
7.3 kg	
INTERPRETED BY	
Lisa Carioto, DVM, DVSc, Diplomate ACVIM	
IMAGING PERFORMED BY	
Erin Wicks	
HOSPITAL NAME	
Shores VEC	
REFERRING VET	
Dr. Moser	

ULTRASONOGRAPHIC FINDINGS

- Multiple, non-specific sonographic changes
 - Very mild **lymphadenomegaly**, possibly due to reactive hyperplasia, however, emerging neoplasia cannot be excluded.
 - The **omentum** is diffusely hyperechoic, despite the absence of severe GI abnormalities. This is suggestive of diffuse abdominal inflammation.
 - Mild fogging of the mucosa of the jejunum (finding somewhat subjective)
- The **hepatic** parenchymal changes are non-specific and may be due to vacuolar and reactive hepatopathies, however, due to the acute and marked increase in the ALT, an inflammatory cause must be considered. For example, copper hepatopathy of the Bedlington terrier, cholestasis and cholangitis/cholangiohepatitis with a secondary bacterial infection. Leptospirosis could cause both the hepatic and renal changes.
- **Renal** abnormalities likely multifactorial, i.e. chronic degeneration, previous episodes of ischemia, however, glomerulonephritis and interstitial nephritis cannot be excluded. Pyelectasia may be due to pu/pd, as well as pyelonephritis.
- A urinary tract infection cannot be excluded due to the irregular mucosa.
- Pancreatic changes suggestive of age related changes and possibly previous episodes of pancreatitis. However, a smoldering pancreatitis cannot be excluded based on the hyperechoic mesentery. There are no signs of neoplasia.

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

The following are recommended/suggested

- A urinalysis and urine culture and sensitivity
- A urine protein: creatinine ratio, if the urine culture is negative (particularly if the urine specific gravity is less than 1.015)

INVOICE

30342

DATE

5/13/22



PATIENT

Ace Sypher

- Arterial blood pressure
- Hepatic biopsy, copper quantification, +/- culture of liver. At the very least, a fine needle aspirate with copper staining.

SPECIES

Canine

- The appropriate tests to exclude glomerulonephritis, for example, SNAP 4Dx (or equivalent test), *Leptospira* PCR and/or serology, +/- testing for *Bartonella* spp., as well as PCR tests for other vector borne diseases

BREED

Bedlington Terrier

- Renal biopsy would be ideal
- Coagulation profile and vitamin K administration prior to biopsies or fine needle aspirates (0.5 mg/kg SQ q8-12h for 1-3 doses), even if PT/PTT within normal limits.

SEX

Intact male

- An analgesia trial for visceral pain, buprenorphine or methadone, and gabapentin

AGE

13 years

- subcutaneous fluids at home
- Anti-emetic/anti-nausea (ondansetron most effective)

WEIGHT

7.3 kg

- A veterinary hepatic diet, even if a biopsy or fine needle aspirate is not pursued
- D-penicillamine – referral to an internist is suggested

INTERPRETED BY

Lisa Carioto, DVM,
DVSc, Diplomate
ACVIM

- Discontinue benazepril for a few days and assess appetite, activity level, etc. If improvement noted, restart at ¼ to ½ the dose and do not increase further, as it may be decreasing GFR and causing adverse side effects. Telmisartan may be considered instead of benazepril depending on whether proteinuria and hypertensive.

IMAGING PERFORMED BY

Erin Wicks

HOSPITAL NAME

Shores VEC

REFERRING VET

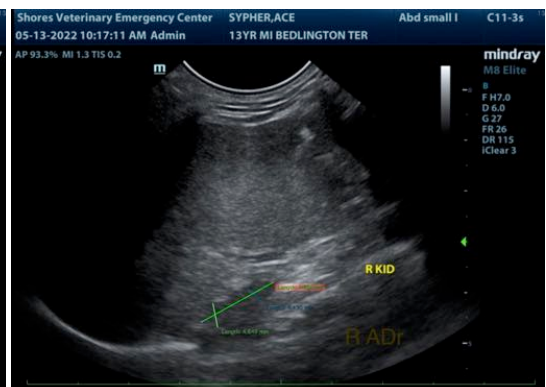
Dr. Moser

INVOICE

30342

DATE

5/13/22





PATIENT

Ace Sypher

SPECIES

Canine

BREED

Bedlington Terrier

SEX

Intact male

AGE

13 years

WEIGHT

7.3 kg

INTERPRETED BY

Lisa Carioto, DVM,
DVSc, Diplomate
ACVIM

**IMAGING
PERFORMED BY**

Erin Wicks

HOSPITAL NAME

Shores VEC

REFERRING VET

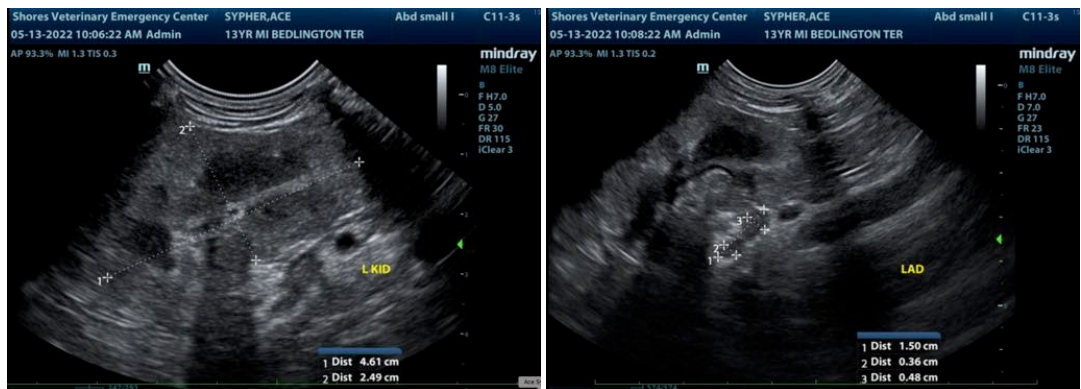
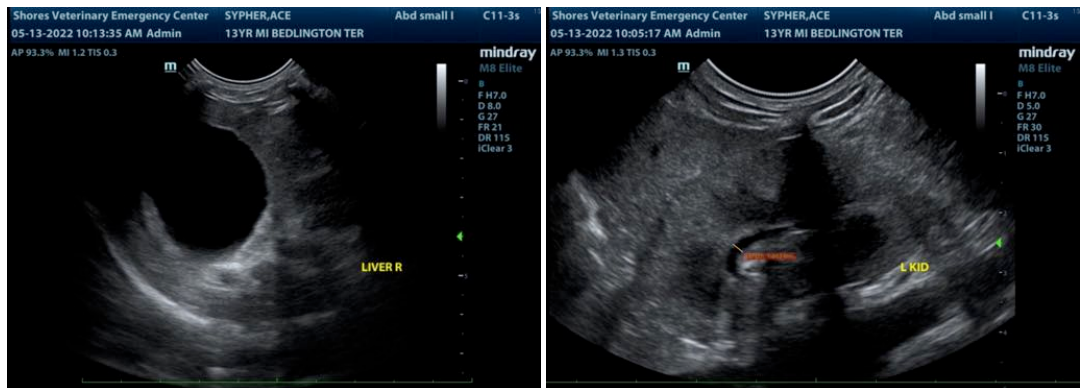
Dr. Moser

INVOICE

30342

DATE

5/13/22



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