



PATIENT

Benno Putnam

PRESENTING CLINICAL SIGNS

SPECIES

Canine

BREED

Whippet

SEDATION: 0.05ML DORMITOR/0.1ML BUTORPHANOL- His ALT is elevated at 414. His ALP is slightly elevated. The rest of his liver enzymes are wnl. His labs were drawn before he started Carprofen. Owner said he is feeling much better on the medication. Discussed reducing dosage or changing to Galliprant. Owner does not want to change anything because he feels better.

Discussed scheduling an abdominal U/S TO CHECK LIVER

Abnormal PE/Chem/CBC/UA Results: SIDE NOTE- after IV injection, site swelled up quite a bit about plum size swelling

ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN

Urinary System

SEX

Neutered Male

The **urinary bladder** is adequately distended with anechoic contents. The wall is smooth and regular. No abnormalities are noted with the trigone or proximal urethra. A trivial amount of free floating sediment is observed. There is no evidence of cystoliths, polyps or a mass.

AGE

12 Years

Prostate

The prostate is homogenous and measures 0.75 cm; within normal limits for a neutered male.

WEIGHT

29.5 Pounds

Kidneys

The **left** kidney measures 5.36 cm. The capsule is smooth. The cortex is very mildly hyperechoic. Additional hyperechoic areas are located haphazardly throughout the cortex, which may be suggestive of ischemia and/or fibrosis. A very mild loss of the normal definition of the cortico-medullary junction is present. The calyces are hyperechoic, which could indicate underlying inflammation. Mineralizations 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.

INTERPRETED BY

Lisa Carioto, DVM,
DVSc, Diplomate
ACVIM

The **right** kidney measures 5.50 cm. The capsule is smooth. The cortex is very mildly hyperechoic. Additional hyperechoic areas are located haphazardly throughout the cortex, which may be suggestive of ischemia and/or fibrosis. A very mild loss of the normal definition of the cortico-medullary junction is present. The calyces are hyperechoic, which could indicate underlying inflammation. Mineralizations of the diverticulae and pelvis are present, without evidence of nephroliths or pyelectasia. The surrounding mesentery is not hyperechoic.

IMAGING BY

Loetitia Saint-Jacques,
LVT

Aortic bifurcation/trifurcation

No abnormalities observed.

HOSPITAL NAME

North Hills VC

Adrenal Glands

The **left** adrenal gland measures 0.44 cm at the cranial pole, 0.41 cm at the caudal pole. The cranial pole is mildly rounded compared to the caudal pole, however, a discrete mass or nodule is not noted. No abnormalities are noted with the gland's overall architecture, echogenicity or echotexture. The phrenico-abdominal vein and surrounding vasculature and mesentery are unremarkable.

REFERRING VET

Dr. David Bagget

The **right** adrenal gland measures 0.53 cm at the cranial pole, 0.51 cm at the caudal pole and 2.70 cm in length. No abnormalities are noted with the gland's overall architecture, echogenicity or

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Benno Putnam echotexture. The phrenico-abdominal vein and surrounding vasculature and mesentery are unremarkable.

SPECIES *Spleen*

Canine The spleen is within normal limits in size, architecture, echotexture, and echogenicity. The capsule is smooth. A small, hypoechoic nodule, located mid-body, measuring 0.53 cm in diameter is noted subcapsularly. A second hypoechoic nodule, located at the head (0.40 cm in diameter) is also subcapsular. Neither disrupts the integrity of the capsule. No abnormalities are observed with its vasculature, i.e. congestion and thrombi are not identified.

BREED

Whippet

Liver

There are no obvious signs of hepatomegaly. The liver's borders are smooth, and vary between sharp to mildly rounded. It is diffusely hyperechoic, i.e., it is hyperechoic to the falciform fat. A very subtle coarse or granular echotexture is observed. Focal lesions are not observed. The walls of the portal veins are mildly hyperechoic and more prominent than usual. No obvious abnormalities are noted with the hepatic veins or arteries.

SEX

Neutered Male

AGE

12 Years

The gallbladder (GB) is mildly dilated, which is consistent with a fasted individual. A trivial amount of free floating echogenic material is observed within the GB. 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.

WEIGHT

29.5 Pounds

Gastrointestinal

Ingesta and gas are present in 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.

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Ingesta and gas are present in the duodenum. 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 gas is present in the small intestines. Very mild stippling of the mucosa is noted in some segments of jejunum. Abnormally dilated loops of bowel are not observed.

IMAGING BY

Loetitia Saint-Jacques,
LVT

Gas and a small amount of ingesta are present in the transverse colon. The colonic wall is not thickened and mural detail is considered normal.

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

HOSPITAL NAME

North Hills VC

Pancreas

The pancreas has a coarse, heterogeneous echotexture. It consists of hypoechoic nodules of variable size and pinpoint to punctate hyperechoic foci scattered throughout the parenchyma. These changes are suggestive of nodular hyperplasia and fibrosis, respectively. Fibrosis may be an age-related change, secondary to previous episodes of pancreatitis, mineralization and amyloid deposition. Signs of active pancreatitis or neoplasia are not appreciated.

REFERRING VET

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Other

Lymph nodes

No abnormalities are observed.

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Benno Putnam **Abdominal effusion** is not visualized.

SPECIES

Canine

Heart

A brief video clip of the heart was submitted. Pericardial and pleural effusion are not identified. A obvious mass is not observed on evaluation of the cardiac chambers. No obvious abnormalities are noted with contractility or chamber size (sedated and measurements not performed).

BREED

Whippet

ULTRASONOGRAPHIC FINDINGS

- **Liver and Gallbladder (GB):** Vacuolar and reactive hepatopathies are suspected. However, a mild primary (immune-mediated) or secondary hepatitis cannot be excluded. Evaluation of Benno's history regarding travel history, potential exposure to toxins, including medications and natural supplements, and infectious agents, (parasites, viruses, or bacteria) is suspected.

SEX

Neutered Male

Leptospira spp. should also be considered. The small amount of GB sludge is most likely clinically insignificant, however, gastroesophageal reflux disease (GERD), can occur in some patients. Obtaining a history regarding signs of GERD from the client is suggested. Treatment with an anti-acid or proton pump inhibitor may be required. Signs of cholecystitis are not appreciated.

AGE

12 Years

- **Spleen:** Nodular or lymphoid hyperplasia and extramedullary hematopoiesis are the differential diagnoses for the two splenic nodules. Neoplasia is considered highly unlikely.

WEIGHT

29.5 Pounds

- **Kidneys:** Age-related degenerative changes are noted. However, possible inflammation, ischemia and/or fibrosis may explain the hyperechoic regions. Differential diagnoses, such as glomerulonephritis (GN) and pyelonephritis cannot be excluded despite the absence of classical sonographic signs.

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- **Urinary bladder:** The trivial amount of sediment in the lumen of the urinary bladder is most likely clinically insignificant, given the lack of inflammatory changes to the bladder wall, however, as mentioned above, pyelonephritis cannot be excluded despite the absence of classical sonographic signs.

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Loetitia Saint-Jacques,
LVT

- **Pancreas:** Age-related changes observed.

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- **Gastrointestinal:** No obvious abnormalities are noted. The very subtle stippling of the mucosa of a few segments of the jejunum may be clinically insignificant, however, it may also be associated with inflammation of the GI tract. Findings should be correlated with Benno's clinical signs and history. Further diagnostics are not recommended based on these findings unless GI signs are present.

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

REFERRING VET

Dr. David Bagget

As mentioned in the history provided, it is preferable and strongly recommended that a different NSAID be used due to the renal and hepatic changes observed. Grapiprant (Galliprant) or robenocoxib (Onsior) may be tried. Gabapentin, with or without a low dose of an opioid, may be used concurrently to decrease the dose of NSAID required. Cartrophen is another adjunct therapy to consider.

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Investigation of the causes of hepatitis and GN, such as leptospirosis, vector borne diseases and

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Benno Putnam heartworm disease is recommended. The appropriate tests include a SNAP 4Dx (or equivalent test), *Leptospira* PCR and/or serology, +/- testing for *Bartonella* spp., as well as PCR tests for other vector borne diseases.

SPECIES

Canine A urinalysis if not already performed
A urine culture an sensitivity (to exclude pyelonephritis)

BREED

Whippet If negative, a urine protein: creatinine ratio
Arterial blood pressure to rule out hypertension

SEX

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

AGE

12 Years Note, although indiscriminate use of antibiotics is not recommended, a broad-spectrum antibiotic may be considered if there is no response to the above, as a means of excluding a bacterial cause of hepatitis, or suppurative cholangitis/cholangiohepatitis. Reassessment of liver enzymes, including a GGT, should be performed 4 weeks after initiation of antibiotics, *while still receiving antibiotics.*

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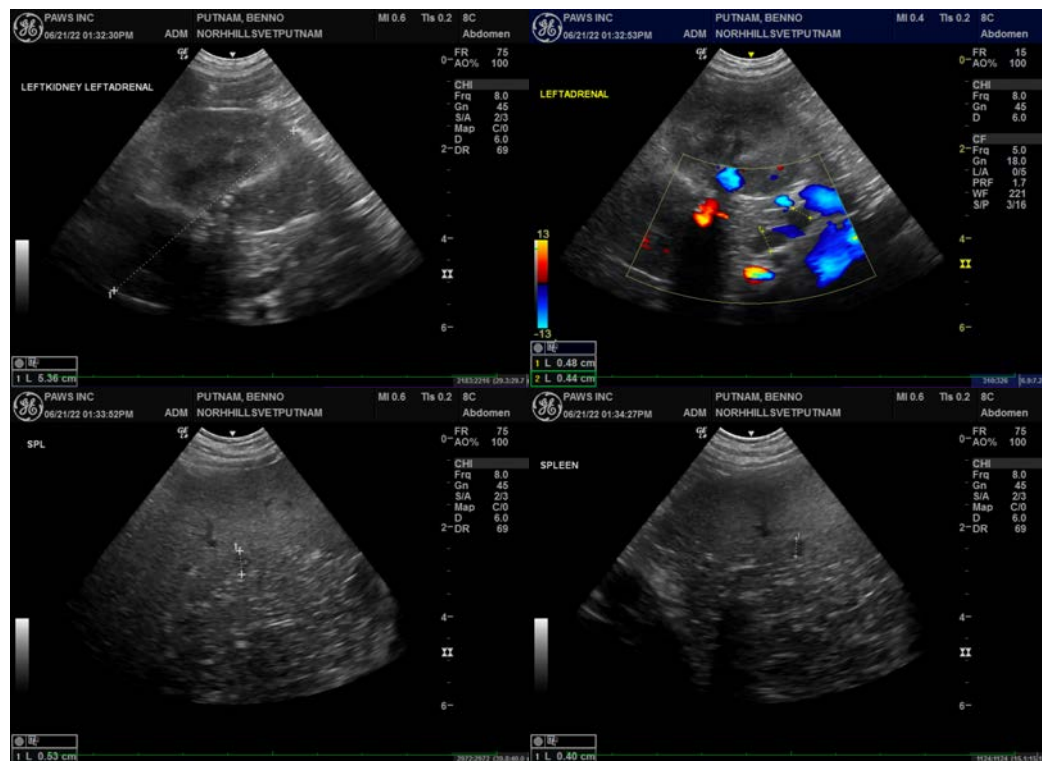
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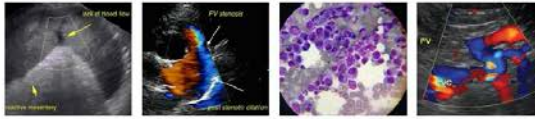
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SEX

Neutered Male

AGE

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WEIGHT

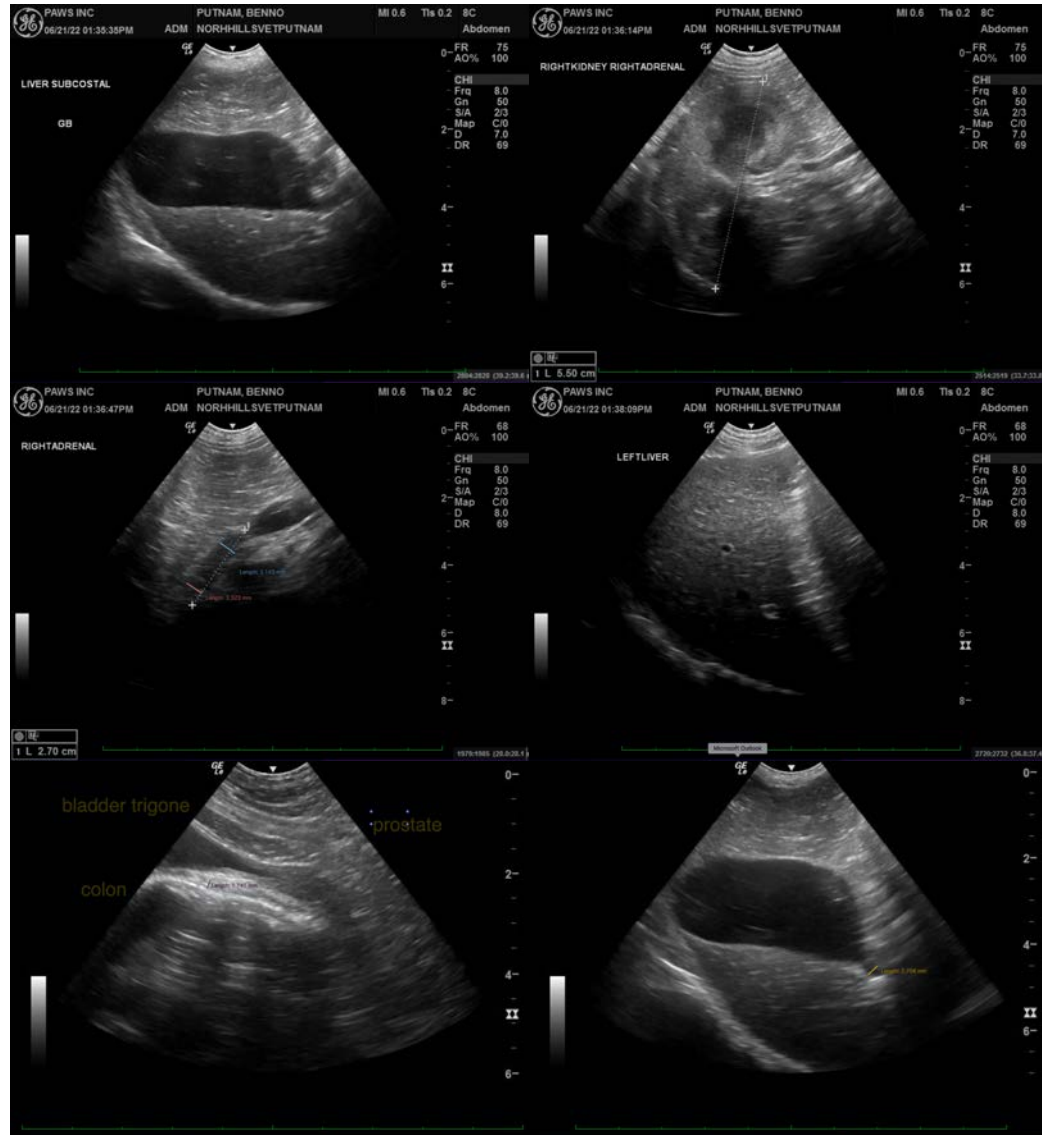
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The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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.

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