



## PATIENT

Dexter Hsu

## SPECIES

Canine

## BREED

Yorkie x

## SEX

Neutered Male

## AGE

12.9 Years

## WEIGHT

21.5

## INTERPRETED BY

Beth Johnson, DVM  
DACVIM

## IMAGING PERFORMED BY

Dr. Kristen Carpenter

## HOSPITAL NAME

Pennridge Animal  
Hospital

## REFERRING VET

Dr. Jen Makem

## INVOICE

75445

## DATE

5/26/26

## PRESENTING CLINICAL SIGNS

Hx: Patient was sedated with butorphanol  
- Hx of recent ALT elevation on bloodwork. Otherwise aclinical.  
- No response to recent antibiotic trial and liver protectants  
- Here for AUS as next step.  
- Current meds: Clavamox 125 mg PO BID, Hepatosupport  
- Current diet: Verus dry

Abnormal PE/Chem/CBC/UA Results: 4/7/26 Full Bloodwork: CBC NSF, ALT 167 (H), Chol 411 (H). Lipase 293 (H). T4 2.0. Fecal NOS. 4dx neg x4. UA: USG 1.028, 2+ protein, quiet sediment. 5/11/26: Liver Chem: ALT 232 (H). ALP 93, tbili 0.6 ( started clavamox) 5/26/26 Liver Chem: ALT 255 (H), ALP 112, tbili 0.6

## ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN

### Urinary System

The urinary bladder is adequately distended with anechoic contents. No masses, inflammatory changes, echogenic sediment or cystoliths are observed. The urinary bladder, trigone and visible pelvic urethra are normal in thickness with a smooth mucosal surface.

Prostate is normal in size, echotexture and echogenicity for a neutered male.

The right kidney is normal is size (4.7 cm), shape and echogenicity. It has smooth peripheral margination. There is a normal 1:3 cortex to medulla ratio with appropriate corticomedullary distinction. There is no evidence of pyelectasia, mineral or infarcts observed.

The left kidney is normal is size (4.6 cm), shape and echogenicity. It has smooth peripheral margination. There is a normal 1:3 cortex to medulla ratio with appropriate corticomedullary distinction. There is no evidence of pyelectasia, mineral or infarcts observed.

### Adrenal Glands

Adrenal glands are mildly plump/swollen in size for a small dog. Normal shape and contour are maintained without evidence of capsular invasion. Corticomedullary structure is unremarkable. Visible surrounding vasculature appears normal. Left measures 0.58 cm at the cranial pole and 0.48 cm at the caudal pole. Right measures 0.81 cm at the cranial pole and 0.57 cm at the caudal pole.

### Spleen

Spleen is subjectively normal in size with a normal smooth capsular contour. Parenchyma is appropriately finely textured and homogenous with normal echogenicity relative to surrounding tissue (hyperechoic to liver). Multifocal well-demarcated hyperechoic homogenous nodules are noted. Splenic vasculature appears normal.

### Liver

Liver is subjectively enlarged with mildly irregular margins. Parenchyma is moderately heterogenous characterized by multiple poorly defined hypoechoic nodules within otherwise hyperechoic liver parenchyma. Visible vasculature and biliary tree appear normal without distension or congestion.



## PATIENT

Dexter Hsu

Gallbladder is moderately distended with anechoic bile as well as suspended and gravity dependent echogenic debris. The wall is smooth without visible thickening. There is no evidence of cystic or CBD dilation. There is no evidence of effusion or inflammation.

## SPECIES

Canine

The visible stomach wall is normal in thickness and layering. The lumen of the stomach is empty with no evidence of obstruction, foreign material or infiltrative disease. Pyloric outflow tract appears patent.

## BREED

Yorkie x

The visible small intestines are normal in wall thickness and layering. Small intestinal motility appears adequate (1-3 contractions per min). The lumen of the small intestine is empty with no evidence of obstruction, foreign material or infiltrative disease.

## SEX

Neutered Male

The visible colon is normal in wall thickness (< 0.2 cm) and layering. Contents are consistent with normal formed feces and gas.

## AGE

12.9 Years

### **Pancreas**

The pancreas that is observed appears appropriately isoechoic to surrounding omental fat. Visible capsule is smooth and normal in contour. Visible pancreatic parenchyma is homogenous and unremarkable. There is no visible pancreatic duct dilation. There is no evidence of active peripancreatic inflammation.

## WEIGHT

21.5

### **Free Abdomen**

There is no visible free peritoneal effusion noted in these images.

## INTERPRETED BY

Beth Johnson, DVM  
DACVIM

There is no apparent pathologic lymphadenopathy noted in these images.

## IMAGING PERFORMED BY

Dr. Kristen Carpenter

## PRIMARY FINDINGS

- Subjective mild bilateral adrenomegaly – In a patient diagnosed with hyperadrenocorticism, this finding is most consistent with adrenal hyperplasia secondary to pituitary dependent hyperadrenocorticism. This finding can also be seen with stress and/or normal patient variant. Interpret in combination with clinical signs of hyperadrenocorticism and/or other adrenal disease.
- Moderately heterogenous liver – These changes are most consistent with benign processes such as nodular hyperplasia, steroid (vacuolar) hepatopathy, extramedullary hematopoiesis or possibly chronic inflammatory disease and less commonly infiltrative round cell or metastatic neoplasia.
- Moderate gallbladder debris - Cholecystic debris is of unknown clinical significance. It can be seen with biliary stasis from fasting or illness. Cholecystic debris is not necessarily related to hepatobiliary disease. Echogenic bile is most commonly an incidental finding in dogs and should be interpreted in combination with clinical signs such as nausea, inappetence, cranial abdominal discomfort and/or laboratory changes such as increased ALP and/or increased Tbili.

## HOSPITAL NAME

Pennridge Animal  
Hospital

## REFERRING VET

Dr. Jen Makem

## INVOICE

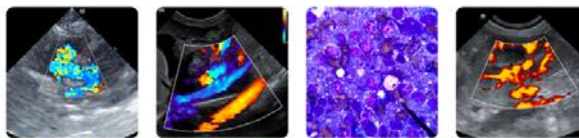
75445

## DATE

5/26/26

## SECONDARY FINDINGS

- Hyperechoic splenic nodules – most consistent with benign myelolipomas. Other differentials such as fibrosis or calcification caused by old hematomas or infarcts, chronic inflammation, granulomatous disease or metastatic disease cannot be ruled out, but are considered less likely.



## PATIENT

Dexter Hsu

## SPECIES

Canine

## BREED

Yorkie x

## SEX

Neutered Male

## AGE

12.9 Years

## WEIGHT

21.5

## INTERPRETED BY

Beth Johnson, DVM  
DACVIM

## IMAGING PERFORMED BY

Dr. Kristen Carpenter

## HOSPITAL NAME

Pennridge Animal Hospital

## REFERRING VET

Dr. Jen Makem

## INVOICE

75445

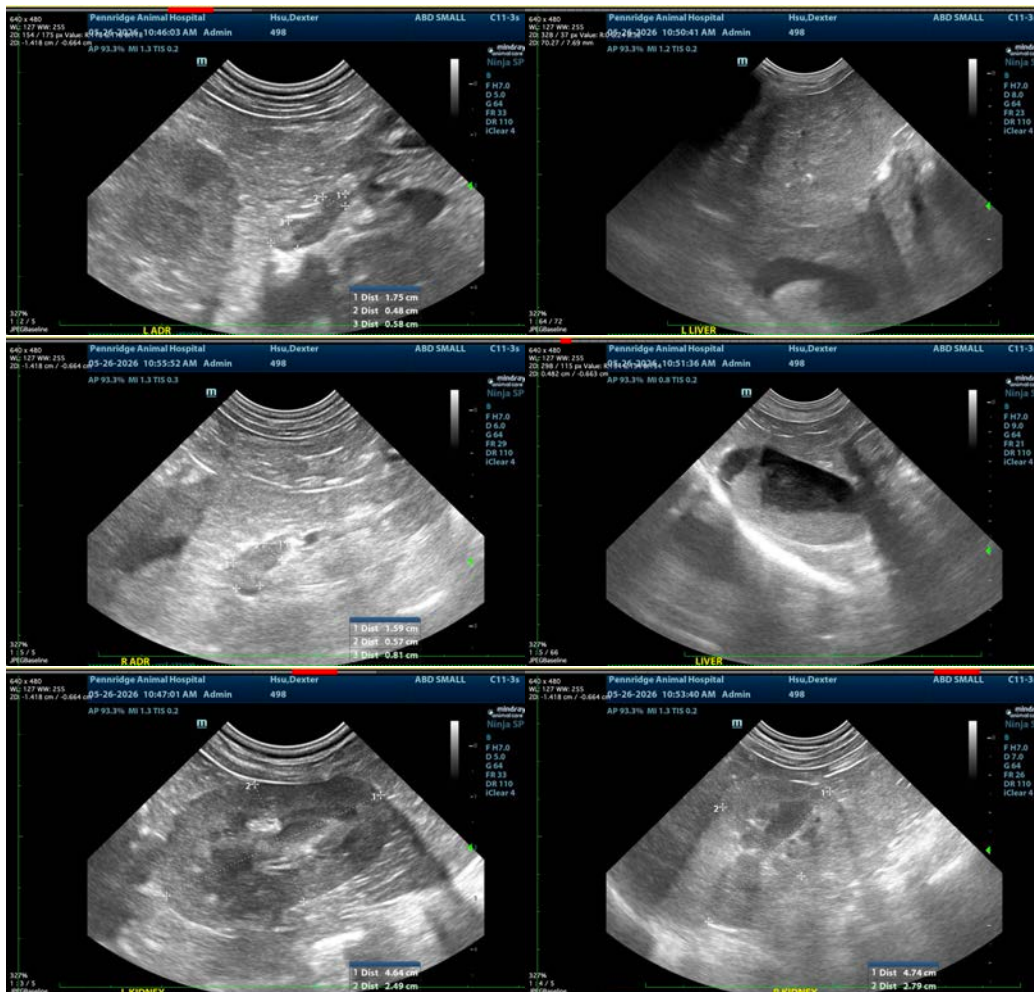
## DATE

5/26/26

## INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

Given the mild bilateral adrenomegaly combined with the hepatobiliary changes described above, emerging adrenal disease/hyperadrenocorticism can't be ruled out as a potential cause of the reported liver enzyme changes and could be suspected in the face of appropriate clinical signs. Having said that, the reported liver enzyme pattern is more of a hepatocellular injury pattern, which is not typically how hyperadrenocorticism presents. Therefore, initial recommendations include:

- Investigating for a primary hepatopathy, beginning with bile acids if patient's total bilirubin is not increased.
- Testing for Leptospirosis could be considered.
- Sampling of the liver via fine needle aspirate could be considered if patient's coagulation status is appropriate.





## PATIENT

Dexter Hsu

## SPECIES

Canine

## BREED

Yorkie x

## SEX

Neutered Male

## AGE

12.9 Years

## WEIGHT

21.5

## INTERPRETED BY

Beth Johnson, DVM  
DACVIM

## IMAGING PERFORMED BY

Dr. Kristen Carpenter

## HOSPITAL NAME

Pennridge Animal  
Hospital

## REFERRING VET

Dr. Jen Makem

## INVOICE

75445

## DATE

5/26/26



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.

**Beth Johnson, DVM, DACVIM**  
info@sonopath.com