

**DATE PRESENTING CLINICAL SIGNS**

3/9/2022

History: Has been lame in left forelimb and mildly in left hind limb but has also had episodes of wailing from pain when he is just laying down and not moving. His liver values were normal at time of his last TPLO last year but when checked yesterday his ALKP is >1100. Acutely stopped eating this morning. Owner is very concerned because he never loses his appetite, and this resembles what Dusty's brother exhibited last year prior to passing away from liver disease.

**PATIENT**

Dusty Shoff

**SPECIES**

Canine

Current Medications: Buprenorphine, Acepromazine.

Lab Results: ALT 138, ALKP 1399.

Date of Previous IntraPet Ultrasound: No previous.

Sedation: IV Ace and Buprenex.

Stat Report: Not requested.

**BREED**

Beagle

Imaging Performed By: Rachel Brillhart, RDMS.

**SEX**

Neutered Male

**ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN****AGE**

3/22/2009

**Urinary System**

The urinary bladder, trigone, and pelvic urethra are normal in thickness and the mucosal surface is smooth. The bladder lumen is moderately distended with anechoic urine. No masses, inflammatory changes or calculi are observed. Ureteral papillae and visualized portion of the proximal urethra, visible to a depth of 2 cm, are normal.

**WEIGHT**

36.4 lbs

The prostate is normal in size (0.89 cm in width) and shape. Parenchyma is homogenous. The prostatic urethra appears normal without evidence of dilation or obstruction.

**INTERPRETED BY**

Andrea Nicastro, DMV,  
Diplomate DACVIM  
(Small Animal  
Internal Medicine)

The left kidney presented normal size (5.00 cm in length); normal shape and architecture with smooth peripheral margins. There is a normal 1:3 cortex to medulla ratio with normal corticomedullary distinction. There is no evidence of pyelectasia, nephroliths, infarcts or hydroureter. Renal vasculature is normal.

The right kidney presented normal size (5.22 cm in length); normal shape and architecture with smooth peripheral margins. There is a normal 1:3 cortex to medulla ratio with normal corticomedullary distinction. There is no evidence of pyelectasia, nephroliths, infarcts or hydroureter. Renal vasculature is normal.

**HOSPITAL NAME**

Animal Emergency  
Hospital

**Adrenal Glands**

The left adrenal gland is normal size (0.84 cm at cranial pole) (0.63 cm at caudal pole) (2.80 cm in length); normal shape. A few pinpoint hyperechoic to mineralized foci are observed. The glandular echogenicity and detail are unremarkable. Capsule, cortex, and medullary definition are normal. The phrenicoabdominal vein and surrounding vasculature are normal.

**REFERRING VET**

Dr. Martinoli

The right adrenal gland is normal size (0.99 cm at cranial pole) (0.61 cm at caudal pole) (2.67 cm in length); normal shape. A few pinpoint hyperechoic to mineralized foci are observed. The glandular echogenicity and detail are unremarkable. Capsule, cortex, and medullary definition are normal. The phrenicoabdominal vein and surrounding vasculature are normal.

**INVOICE**

10524

**Spleen**

The spleen is subjectively normal in size (1.95 cm in width at the level of the hilus) with normal curvilinear peripheral contours. The parenchyma is subtly heterogenous in appearance with several vague, ill-defined, hyperechoic nodules/areas throughout the organ. Splenic vasculature appears normal with no evidence of thrombosis.

### ***Liver***

The liver is subjectively prominent in size with normal curvilinear peripheral contours. An approximately 8 cm irregular, ill-defined, hyperechoic to heterogenous mass/area is observed on the right side, adjacent to the diaphragm. A few other smaller ill-defined, hyperechoic nodules/areas were also seen on the right side. The remaining parenchyma is hypoechoic relative to the spleen and mottled in appearance. Hepatic vasculature and intrahepatic biliary tracts are of normal volume with no evidence of congestion.

The gall bladder lumen is moderately distended. The wall is thin and smooth. A moderate amount of echogenic debris is observed within the lumen some of which is partially dependent and some of which is suspended. The cystic and common bile ducts are normal.

### ***Gastrointestinal***

The gastric lumen is gas distended. The gastric wall is normal in thickness with a normal layering pattern. The small intestinal lumen is not dilated. The small intestinal wall thickness is normal with a normal layering pattern and appropriate mural detail. Discreet masses are not identified. The colonic wall is normal. No obstructive or overt infiltrative disease is noted.

### ***Pancreas***

The region of the pancreas is isoechoic relative to surrounding omental fat. No obvious parenchymal abnormalities are observed. There is no evidence of regional inflammation or effusion.

### ***Free Abdomen***

The peritoneal cavity is normal. There is no evidence of inflammation or effusion. The abdominal lymph nodes are normal/not visible.

## **ULTRASONOGRAPHIC FINDINGS**

### **Primary Findings**

- The heterogenous hepatic area/mass may represent a neoplasia process (i.e., adenocarcinoma). Alternatively, excessive regenerative nodular hyperplasia may be present. The smaller hyperechoic nodules trend more towards a benign process (i.e., regenerative nodules), with a lower possibility of neoplasia.

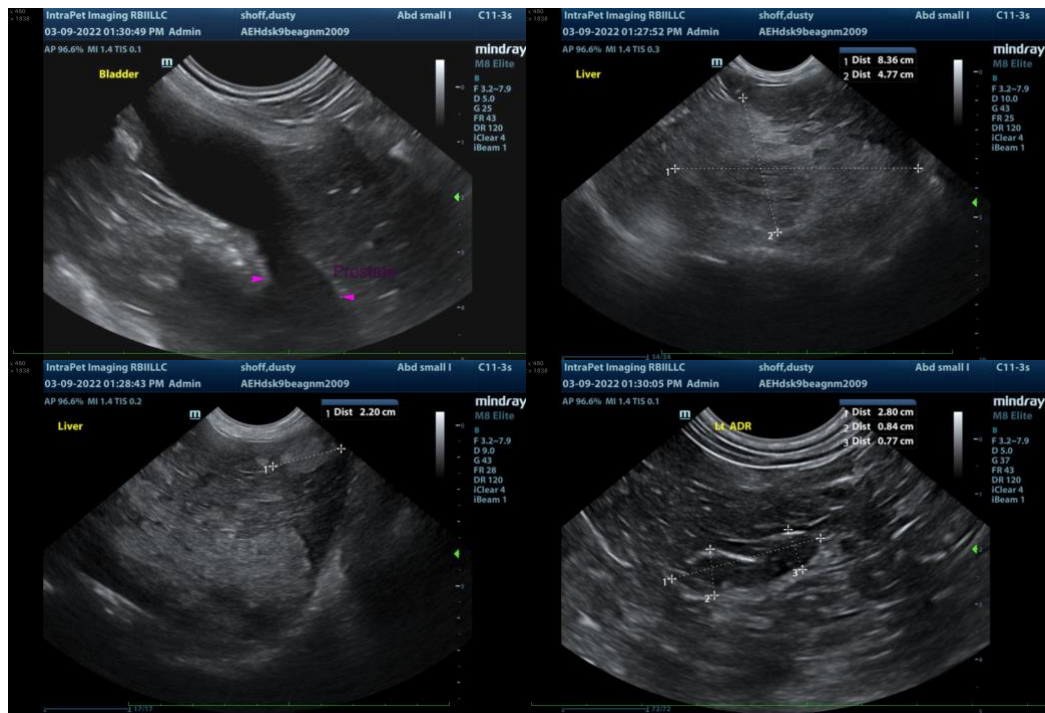
### **Secondary Findings**

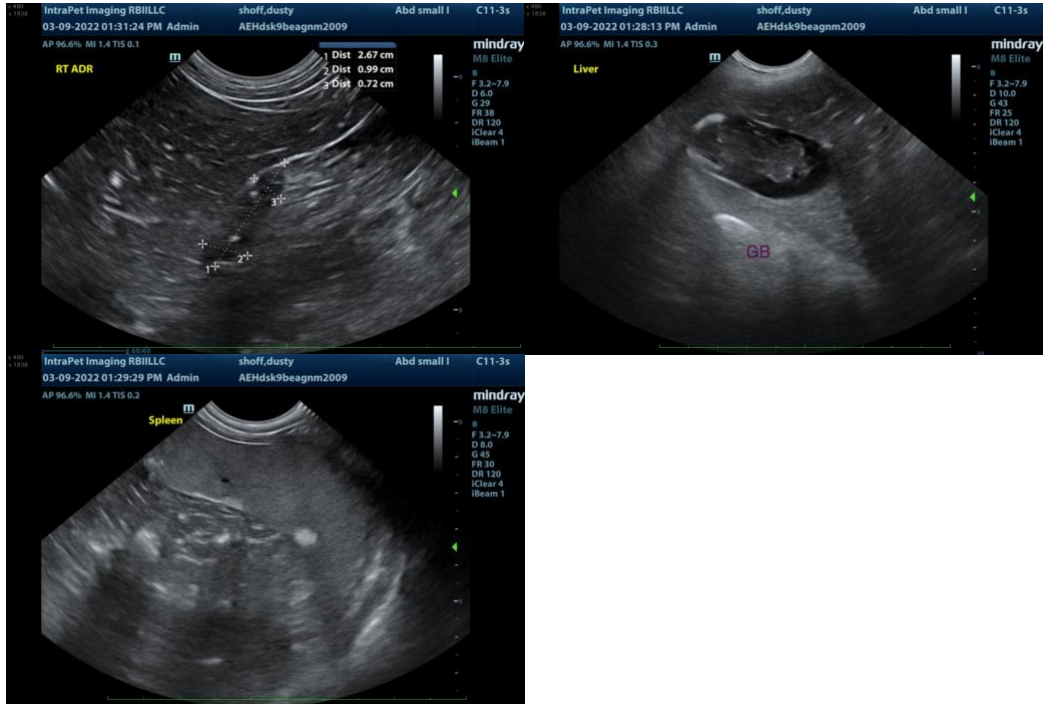
- The ill-defined hyperechoic splenic nodules/areas are most likely benign (i.e., myelolipomas or areas of lymphoid hyperplasia). Emerging neoplasia is possible but considered less likely.
- The gall bladder debris could be consistent with cholestasis, fasting, or less likely, early mucocele formation.
- The bilateral foci of mineralization in the adrenal glands likely represents an incidental finding. Adrenal mineralization has been associated with neoplasia. Neoplasia, however, is considered less likely given that this finding is seen bilaterally and that the adrenals are otherwise normal in appearance.

## **INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS**

- Three-view thoracic radiographs are recommended to assess for pulmonary metastases.

- A fine-needle aspirate of the heterogenous hepatic area/mass can be considered. However, cytology results may be inconclusive. Therefore, a surgical biopsy of the abnormal hepatic area +/- removal of the mass effect may be necessary to get a definitive diagnosis. The hepatic lesion, however, does not explain the episodes of pain. Therefore, other causes (i.e., orthopedic or neurologic) should be sought and addressed.





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.

**Andrea Nicastro, DVM, Diplomate DACVIM (Small Animal Internal Medicine)**  
info@SonoPath.com