



<b>PATIENT</b>	<b>PRESENTING CLINICAL SIGNS</b>
Chip Birkland	asymptomatic Abnormal PE/Chem/CBC/UA Results: TP 4.9, Alb 2, ALT 288, ALKP 577
<b>SPECIES</b>	<b>ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN</b>
Canine	<b>Urinary System</b>
<b>BREED</b>	Urinary bladder is mildly to mildly distended with anechoic contents. Apical urinary bladder wall is diffusely thick. Mucosa is hyperechoic and irregular. No masses or cystoliths are observed. The trigone and visible pelvic urethra are normal thickness with a smooth mucosal surface. The apical portion measures 0.33 cm thick.
Shih Tzu	
<b>SEX</b>	The right kidney is normal in size (2.77 cm) and shape with smooth peripheral margination. A normal 1:3 cortex to medulla ratio is maintained. The medulla and cortices are uniform in texture with some mild increased echogenicity and mild loss of corticomedullary distinction. There is no evidence of pyelectasia, mineral or infarcts observed. A hyperechoic band parallel to the corticomedullary border is present.
Spayed Female	
<b>AGE</b>	The left kidney is normal in size (2.69 cm) and shape with smooth peripheral margination. A normal 1:3 cortex to medulla ratio is maintained. The medulla and cortices are uniform in texture with some mild increased echogenicity and mild loss of corticomedullary distinction. There is no evidence of pyelectasia, mineral or infarcts observed. A hyperechoic band parallel to the corticomedullary border is present.
7 Years	
<b>WEIGHT</b>	<b>Adrenal Glands</b>
N/A	
<b>INTERPRETED BY</b>	The right adrenal gland is normal in size (1.54 cm long x 0.42 cm at the cranial pole and 0.36 cm at the caudal pole), shape and contour. Corticomedullary structure is unremarkable. Visible surrounding vasculature appears normal.
Beth Johnson, DVM DACVIM	The left adrenal gland is normal in size (1.33 cm long x 0.27 cm at the cranial pole and 0.35 cm at the caudal pole), shape and contour. Corticomedullary structure is unremarkable. Visible surrounding vasculature appears normal.
<b>IMAGING PERFORMED BY</b>	<b>Spleen</b>
Diane McFadden	The 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). No focal nodules or masses are observed. Splenic vasculature appears normal.
<b>HOSPITAL NAME</b>	<b>Liver</b>
Newton Vet Hospital	The liver is subjectively normal in size with normal smooth curvilinear peripheral contour. However, the parenchyma is heterogeneous/mottled, characterized by multiple poorly defined hypoechoic nodules within an otherwise hyperechoic liver parenchyma. Visible vasculature appears normal.
<b>REFERRING VET</b>	The gallbladder is non-distended in size. The wall is smooth without visible thickening. Luminal contents are primarily anechoic. There is no evidence of cystic or common bile duct dilation.
Dr. Wyman	<b>Gastrointestinal</b>
<b>INVOICE</b>	
35107	The stomach wall is normal in thickness (canine < 0.5 cm and feline < 0.4 cm) and layering. The lumen of the stomach is mildly distended with echogenic non-shadowing luminal contents and gas consistent with normal ingesta. There is no evidence of obstruction, foreign material or infiltrative disease. Pyloric outflow tract appears patent.
<b>DATE</b>	
1/26/22	



**PATIENT**

Chip Birkland

The visible small intestines are normal in wall thickness and layering (canine duodenum < 0.5 cm and feline duodenum < 0.4 cm; other < 0.3 cm). 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.

**SPECIES**

Canine

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

**Pancreas**

**BREED**

Shih Tzu

The pancreatic parenchyma is appropriately isoechoic to surrounding tissue. Visible capsule is smooth and normal in contour. There is no visible pancreatic duct dilation. There is no evidence of active peripancreatic inflammation.

**SEX**

Spayed Female

**Free Abdomen**

There is no evidence of peritoneal effusion. There is no apparent lymphadenopathy.

**ULTRASONOGRAPHIC FINDINGS**

**AGE**

7 Years

- Chronic Cystitis – Urinary bladder wall changes are most consistent with chronic cystitis. Infiltrative neoplasia cannot be ruled out but is considered less likely give the location and diffuse nature of the changes. Note: the wall thickening may simply be due to the bladder being non-distended, and reassessment could be made with a fully distended urinary bladder.

**WEIGHT**

N/A

- Age related kidney change – This finding is expected/consistent with age-related mild degenerative disease and should be interpreted clinically in combination with laboratory changes.

**INTERPRETED BY**

Beth Johnson, DVM  
DACVIM

- Medullary Rim Sign - of unknown clinical significance and can be a normal variant. Medullary rim sign(s) should be interpreted in combination with other more specific indications of kidney disease such as isosthenuria, proteinuria, azotemia, etc.

**IMAGING PERFORMED BY**

Diane McFadden

- Differentials for the hepatic changes are vast, and include both benign conditions such as steroid or vacuolar hepatopathy or extramedullary hematopoiesis as well chronic hepatitis or even infiltrative round cell or metastatic neoplasia.

**INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS**

**HOSPITAL NAME**

Newton Vet Hospital

Given the increased liver enzymes and the liver changes on ultrasound, recommendations for this patient include a fine needle aspirate of the liver if patient's coagulation status is appropriate, as well as bile acids to further investigate liver function, especially given the mildly low albumin. A urinalysis is also recommended if not already performed, and if there is protein in the urine with an otherwise quiet sediment, a urine protein to creatinine ratio is recommended, as is a blood pressure if not already performed.

**REFERRING VET**

Dr. Wyman

Testing for Leptospirosis could be considered given the liver and kidney changes. If bile acids are normal, and there is no protein in the urine, then a gastrointestinal malabsorption panel including TLI, PLI, folate and cobalamin to Texas A&M Gi laboratory to further assess gastrointestinal health is recommended, given the low albumin. In the meantime, an empirical course of antibiotics +/- Denamarin could be offered with monitoring of liver enzymes for improvement during treatment.

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**SPECIES**

Canine

**BREED**

Shih Tzu

**SEX**

Spayed Female

**AGE**

7 Years

**WEIGHT**

N/A

**INTERPRETED BY**

Beth Johnson, DVM  
DACVIM

**IMAGING PERFORMED BY**

Diane McFadden

**HOSPITAL NAME**

Newton Vet Hospital

**REFERRING VET**

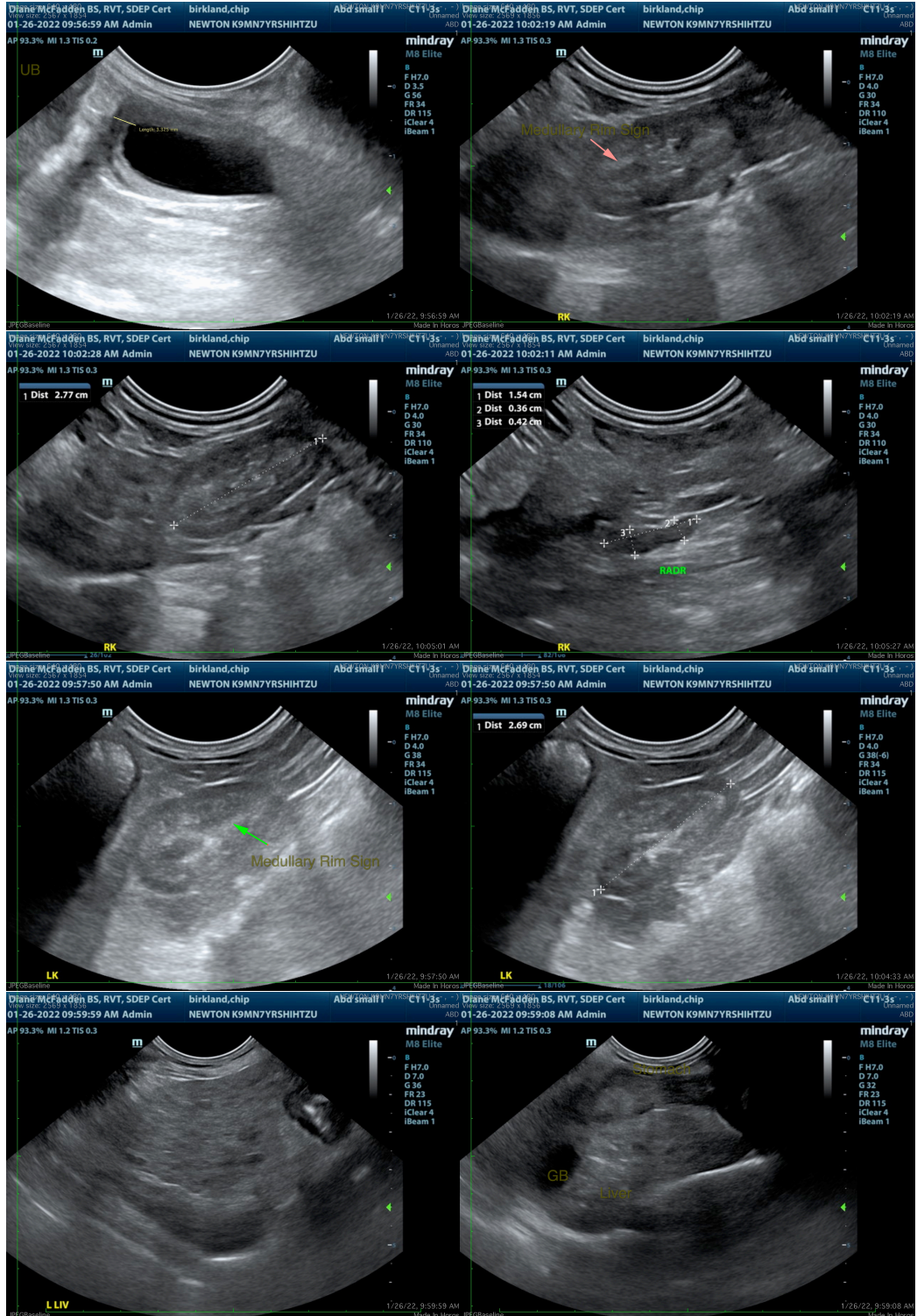
Dr. Wyman

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**PATIENT**

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**SPECIES**

Canine

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Spayed Female

**AGE**

7 Years

**WEIGHT**

N/A

**INTERPRETED BY**

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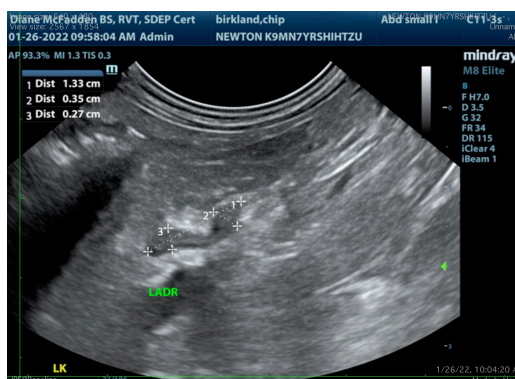
Dr. Wyman

**INVOICE**

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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.

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