

**PATIENT**

Nina Marcal

**SPECIES**

Canine

**BREED**

Terrier Mix

**SEX**

Spayed Female

**AGE**

7 years

**WEIGHT**

21.9 lbs

**INTERPRETED BY**

Beth Johnson, DVM  
DACVIM

**IMAGING PERFORMED BY**

Pamela Harrigan, RDCS,  
Certified Veterinary  
Sonographer

**HOSPITAL NAME**

Falmouth Animal  
Hospital

**REFERRING VET**

Dr. Alyssa Sakmar

**INVOICE**

11062

**DATE**

1/7/2026

**PRESENTING CLINICAL SIGNS**

Urinary accidents, PU/PD, licking vulva. Grade III/VI heart murmur. Radiographs: small heart suggesting hypovolemia, pleural space normal. \*Sedated with torb/alfaxalone.

Abnormal PE/Chem/CBC/UA Results: HCT 40.8, RBC 5.68, HGB 13.9, WBC 22.6, SDMA 19, Cr 1.7, BUN 36, Chol 109, Resting cortisol 0.91.

**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.

Kidneys are overall normal in size 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 cortical echogenicity and mild loss of corticomedullary distinction, expected in this age patient. There is no evidence of pyelectasia, mineral or infarcts observed. Left kidney measures 4.42 cm, and the right kidney measures 4.45 cm.

**Adrenal Glands**

The right adrenal gland is small (flattened contour) (0.25 cm at the cranial pole and 0.29 cm at the caudal pole.) Corticomedullary structure is unremarkable. Visible surrounding vasculature appears normal.

The left adrenal gland is unable to be visualized in these images.

**Spleen**

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.

**Liver**

The liver is subjectively normal in size with normal smooth curvilinear peripheral contour. Parenchyma is appropriately hypoechoic to the spleen in echogenicity and appropriately mildly coarse and homogenous in echotexture. No focal lesions are observed. Visible vasculature and biliary tree appear normal without distension or congestion.

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.

**Gastrointestinal**

The visible stomach wall is normal in thickness and layering. The lumen of the stomach is mildly distended with very echogenic reverberation artifact from intraluminal gas. There is no evidence of obstruction, foreign material, or infiltrative disease; however, visualization is partially inhibited by gas. Pyloric outflow tract appears patent.



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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.

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

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**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.

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**Free Abdomen**

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

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There is no apparent pathologic lymphadenopathy noted in these images.

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**ULTRASONOGRAPHIC FINDINGS**

- Flat right adrenal gland – This can be a normal patient variant and/or a sign of exogenous cortisol administration. If exogenous steroids are not being administered, hypoadrenocorticism (either relative or absolute) should be considered.
- Age related kidney changes are noted. However, early or emerging chronic kidney disease can't be ruled out and this finding should be interpreted in combination with lab work results, urinalysis, etc.

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DACVIM

**INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS**

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**Polyuria/polydipsia differentials:**

Differentials for PU/PD are vast and include, but are not limited to:

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Primary polyuria caused by chronic kidney disease, pyelonephritis, liver disease, diabetes mellitus, hyperthyroidism, hypercalcemia, hyperadrenocorticism, hypoadrenocorticism, E.coli infections ie) pyometra in females, polycythemia, central diabetes insipidus or primary nephrogenic diabetes insipidus.

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Primary polydipsia caused by psychogenic polydipsia, fever, pain, or central nervous system disease.

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Most causes of PU/PD can be diagnosed with a comprehensive history and physical exam, a first AM urine specific gravity to see if urine concentration is possible (as most animals naturally consume less water overnight) followed by a comprehensive CBC, serum chemistry panel, electrolytes, and urinalysis.

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If not, next step(s) may include a urine culture, low dose dexamethasone suppression test, T4, bile acids, Leptospirosis testing and/or an empirical course of antibiotics.



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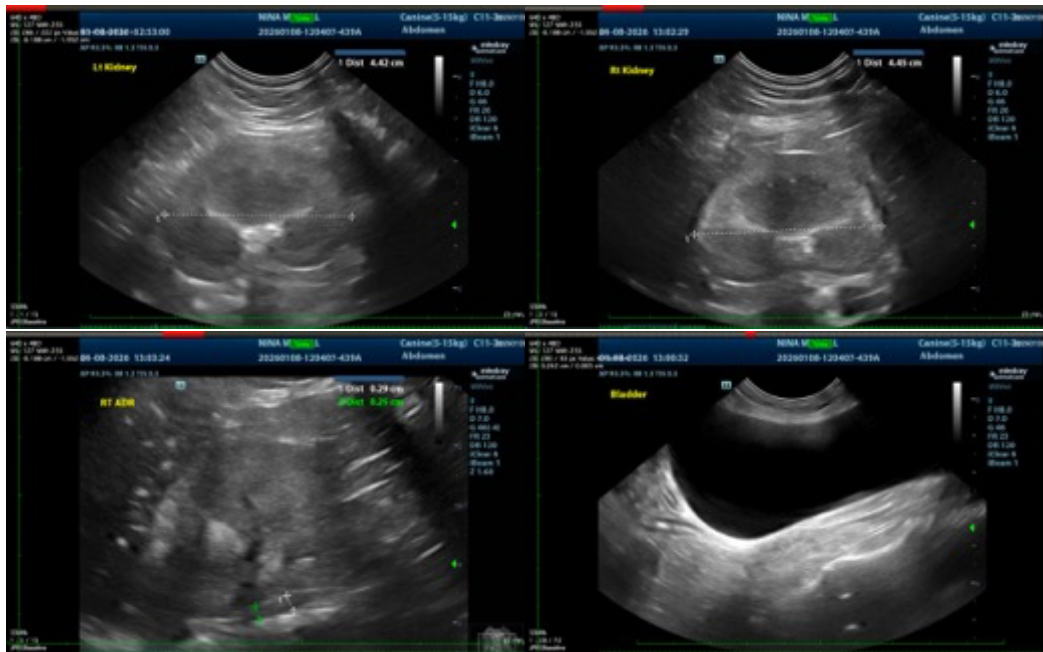
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If a diagnosis is still not obtained, a more advanced work-up is indicated and consultation with an internist may be warranted.

Based on patient's provided history, if not recently evaluated urinalysis and, if indicated based on urinalysis results, urine culture is recommended. If protein is present in an otherwise quiet sediment, protein quantification with a urine protein to creatinine ration is recommended.

Without units or reference ranges, it's difficult to definitively interpret lab work. Having said that, assuming to as a resting cortisol cutoff, if patient's cortisol is low a confirmatory full ACTH stimulation test may be warranted.



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