



**PATIENT PRESENTING CLINICAL SIGNS**

**PATIENT** Max Nowicki  
**SPECIES** Canine  
**BREED** Maltese  
**SEX** Male, neutered  
**AGE** 16 Yrs.  
**WEIGHT** 8.8 lbs.

**PRESENTING CLINICAL SIGNS**  
 History: Max was recently adopted from a shelter, he was relinquished in January. Max has a history of soft stools with neg fecal tests, enlarged cranial abdomen, thinning of hair and rat tail appearance. He also has a few subcutaneous masses that are bleeding. Thyroid panel showed a low T4 but normal Free T4. New owner wants to make sure that Max is taken care off and elected to start with ultrasound. He is currently not taking any medications.  
 Abnormal PE/Chem/CBC/UA Results: 04/04/22. TP: 3.5 UA: 1.005 Alb: 2.2 Glob: 1.3 ALT: 163 ALKP: 848 GGT: 34 Calcium: 8.8, low Potassium: 6.1, high NA/K ratio: 24, low Amylase: 1,135 PSL: 1,704 PLT: 845 GI panel: Texas A&M Cobalamin: 193 Folate: NSF PLI: 1084 TLI fasting: 50

**ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN**

**Urinary System**

The urinary bladder is mildly distended. The wall, particularly in the region of the apex is thickened (up to 1.10 cm) and irregular with areas of mineralization within the wall itself. Within the lumen, a small to moderate amount of suspended echogenic to mineralized debris +/- tiny calculi are observed. The region of the trigone and the visible portion of the proximal urethra are normal.

The prostate is not visualized in its entirety due to its pelvic location. In the visualized portion, no obvious pathology is observed.

The left kidney is normal size (4.08 cm in length) with a slightly irregular shape. There is a normal 1:3 cortex to medulla ratio with mild loss of corticomedullary distinction. The cortex itself is mildly hyperechoic with at least one small cortical cyst at the lateral aspect. Pinpoint hyperechoic to mineralized foci are observed within the cortical tissue. Several non-obstructive nephroliths are visualized. Trace pyelectasia is present. There is no evidence of hydroureter.

The right kidney is normal size (4.13 cm in length) with a slightly irregular shape. There is a normal 1:3 cortex to medulla ratio with mild loss of corticomedullary distinction. The cortex itself is mildly hyperechoic with several cortical cysts at the lateral aspect. Pinpoint hyperechoic to mineralized foci are observed within the cortical tissue. Several non-obstructive nephroliths are visualized. Trace pyelectasia is present. There is no evidence of hydroureter.

**Adrenal Glands**

The left adrenal gland is moderately enlarged (1.74 cm at cranial pole) (0.87 cm at caudal pole) (3.10 cm in length) with an irregular shape. A 1.33 x 1.69 cm heterogeneous nodule is observed at the cranial pole. At the caudal pole, the parenchyma is mildly heterogeneous without a distinct nodule. There is loss of glandular detail. Surrounding vasculature appears normal.

The right adrenal gland is enlarged (1.05 cm at cranial pole) (0.95 cm at caudal pole) (2.42 cm in length) with a slightly irregular shape. The parenchyma is heterogeneous with loss of glandular detail. The phrenicoabdominal vein and surrounding vasculature are normal.

**Spleen**

The spleen is normal in size (0.81 cm in width at the level of the hilus) with a normal capsular contour. There is appropriate echogenicity and echotexture. Pinpoint hyperechoic foci are observed throughout the organ. Splenic vasculature is normal.

**Liver**

**INTERPRETED BY**

Andrea Nicastro, DVM,  
Diplomate ACVIM  
(Small Animal Internal  
Medicine)

**IMAGING PERFORMED BY**

Dr. Reyes

**HOSPITAL NAME**

Mobile Vet Ultrasound

**REFERRING VET**

Dr. D'Ambrose

**INVOICE**

13238

**DATE**

4/19/22



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The liver is subjectively prominent in size with swollen curvilinear peripheral contours. The parenchyma is isoechoic relative to the spleen and exhibits mild heterogeneity. No distinct focal lesions are observed. Hepatic vasculature and biliary tracts are of normal volume with no evidence of congestion. The portal vein: caudal vena cava ratio is approximately 1:1. The gall bladder lumen is moderately distended. The wall is thin and smooth. A small to moderate amount of mostly gravity-dependent echogenic debris is observed within the lumen. The cystic and common bile ducts are normal/not seen.

**Gastrointestinal**

The stomach and intestine are free of stasis and exhibit normal peristaltic activity. The gastric lumen is not distended. The gastric wall and pylorus are normal in thickness with a normal layering pattern. The pyloric outflow tract is patent. The small intestinal lumen is not dilated. The small intestinal wall is mildly thickened (up to 0.43 cm) with a normal layering pattern and appropriate mural detail. Discreet masses are not identified. The colonic wall is normal. The lumen of the descending colon contains a large amount of granular appearing fecal material. No obstructive disease is noted.

**Pancreas**

The pancreas is diffusely prominent in size, particularly the right limb with slightly irregular peripheral contours. The parenchyma is hypoechoic relative to surrounding omental fat and subtly mottled in appearance. No distinct focal lesions are observed. The pancreatic duct is not overtly dilated. Surrounding mesentery is hyperechoic.

**Free Abdomen**

Trace free fluid is observed. The mesentery in the mid-abdominal region is slightly hyperechoic. The abdominal lymph nodes are normal/not visible.

**ULTRASONOGRAPHIC FINDINGS**

**Primary Findings:**

- Based on the patient's clinical history and sonographic changes, a protein-losing enteropathy (i.e., inflammatory bowel disease, infectious/parasitic, lymphangiectasia, other) is considered likely.
- The pancreatic changes are consistent with chronic active pancreatitis.
- The bilateral adrenomegaly is most consistent with hyperplastic change/nodular hyperplasia. However, an emerging tumor in the left adrenal gland cannot be excluded.
- The trace ascites/mild peritonitis is likely secondary to bowel and/or pancreatic pathology.

**Secondary Findings:**

- The diffuse hepatic changes are non-specific and could be consistent with vacuolar hepatopathy, regenerative nodular hyperplasia, and/or age-related remodeling. Inflammatory and infiltrative disease are considered less likely.
- Gallbladder debris, non-mucocele.
- Bilateral, age-related renal changes with dystrophic mineralization and non-obstructive nephrolithiasis.



**PATIENT**

Max Nowicki

- The urinary bladder wall changes could be consistent with cystitis or emerging neoplasia (i.e., transitional cell carcinoma), mineralized sand +/- tiny calculi) are present.
- Dystrophic mineralization in the spleen, likely secondary to endocrinopathy.

**SPECIES**

Canine

**INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS**

**BREED**

Maltese

- Further workup for the GI disease could include the following:
  1. Prophylactic deworming with Fenbendazole at 50 mg/kg once a day for 5 days is recommended. Repeat above protocol in 3 weeks.
  2. Empirical treatment for small intestinal bacterial overgrowth with a 4 week course of Tylosin.
  3. Initiation of a probiotic with a high colony count (i.e., Visbiome with Provable Forte).
  4. 6 week hypoallergenic diet trial. A low fat version is recommended given the pancreatic changes.
  5. Initiation of cobalamin supplementation.
  6. Ultimately, endoscopic or surgical gastrointestinal biopsies would be necessary to get a definitive diagnosis.

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- To evaluate for concurrent causes of hypoalbuminemia, a UPC and pre- and post-prandial serum bile acids can be considered.
- Regarding the urinary bladder changes, consider a urine culture and sensitivity and urine BRAF test to further evaluate for underlying causes of the wall thickening. A free catch or catheterized sample should be obtained in lieu of performing a cystocentesis.
- Consider testing for hyperadrenocorticism with a low-dose dexamethasone suppression test or ACTH stimulation test if clinical signs (i.e., PU/PD) develop.
- Given the patient's age, thoracic radiographs (three-view) are recommended to assess cardiopulmonary status.

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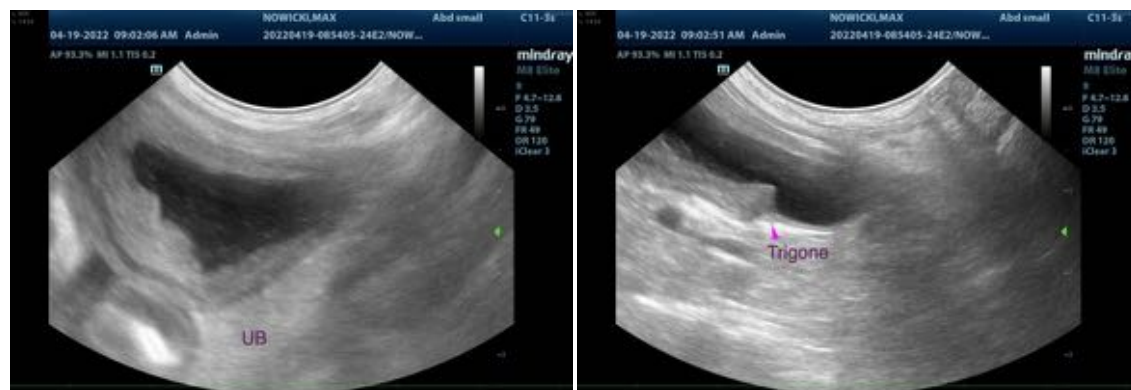
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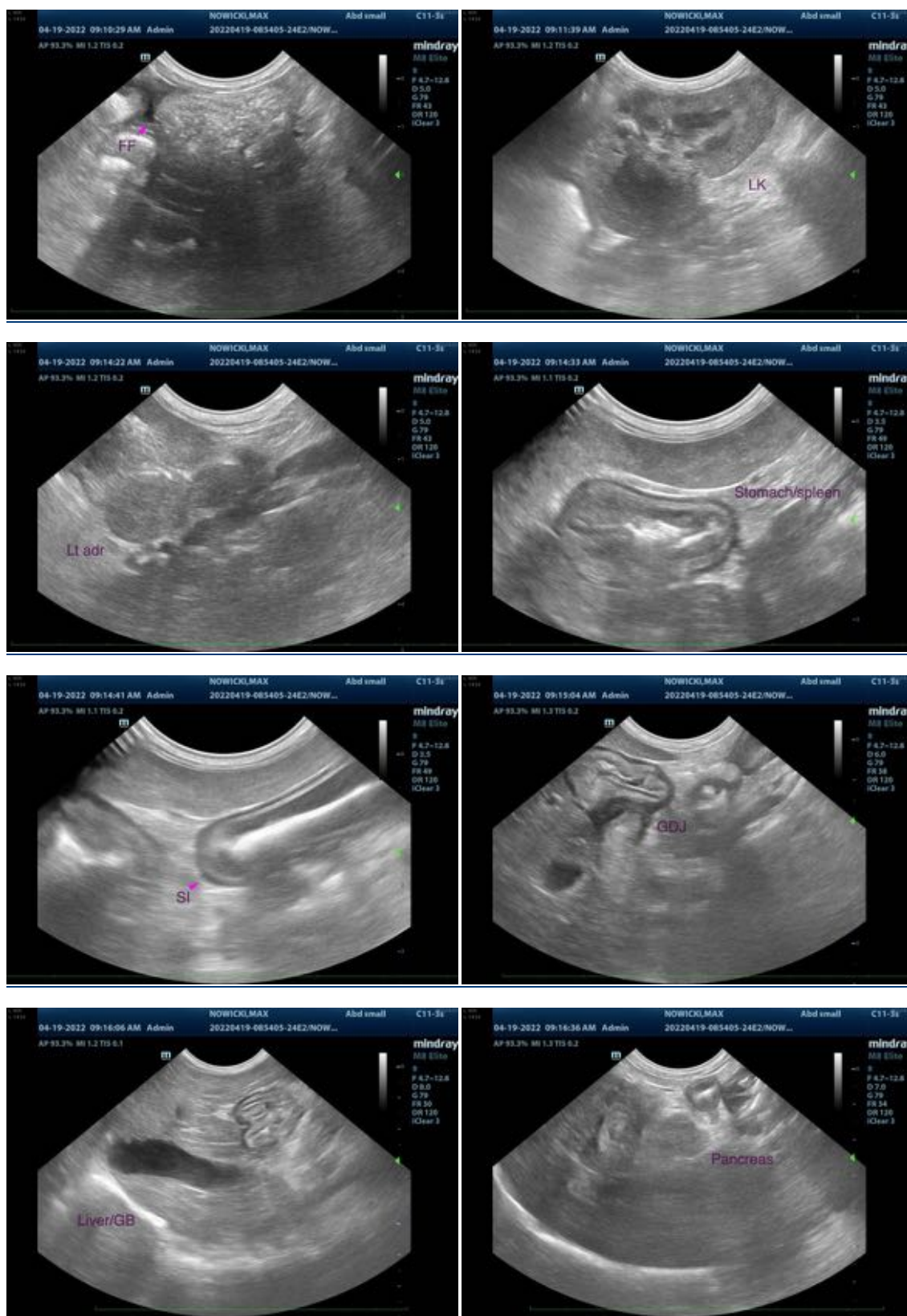
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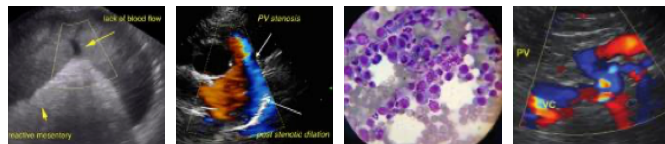
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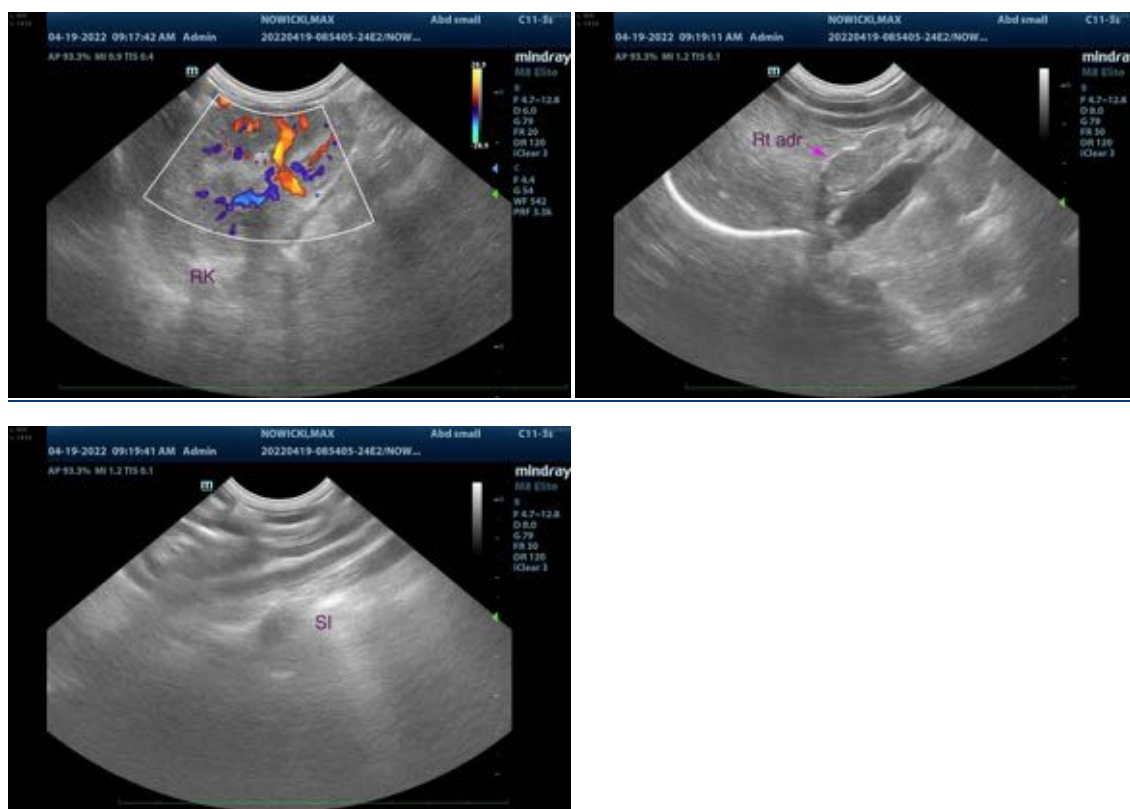
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The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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.

Andrea Nicastro, DVM, Diplomate ACVIM (*Small Animal Internal Medicine*)

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