



**PATIENT PRESENTING CLINICAL SIGNS**

**Dixie Marks** History: Several month history decreased appetite and WT loss more pronounced recently, straining to defecate.  
**SPECIES** Abnormal PE/Chem/CBC/UA Results: SDMa-20 creat-1.9 bun-35 alp-1155 alt-36.5 USG-1.011

**Canine ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN**

**BREED** *Urinary System*

**Tibetan Terrier** The urinary bladder is moderately distended. The wall in the region of the apex is mildly thickened (up to 0.64 cm) with a slightly irregular mucosal surface. The wall tapers to a normal thickness as it extends towards the cystourethral junction. A small amount of suspended echogenic debris is observed within the lumen. No cystic calculi are observed. The region of the trigone is normal.

**SEX**

**Female Spayed** The left kidney is normal in size (4.55 cm in length) with a slightly irregular shape. The cortex is isoechoic relative to the spleen and mildly thickened, with moderate loss of corticomedullary distinction. At least one, small, cortical cyst is seen. There is a questionable 1.5 x 1.0 cm irregular, hypoechoic nodule at the lateral aspect. There is no evidence of pyelectasia, nephroliths, or hydroureter. Renal vasculature is normal.

**AGE**

12

**WEIGHT**

21.4 lbs

The right kidney is normal in size (5.38 cm in length) with a normal shape and smooth peripheral contours. The cortex is isoechoic-to-hyperechoic relative to the spleen. There is a normal 1:3 cortex to medulla ratio with moderate loss of corticomedullary distinction. At least one, small, cortical cyst is seen. Hyperechoic shadowing diverticular foci are visualized. There is no evidence of pyelectasia, infarcts or hydroureter. Renal vasculature is normal. (See also right adrenal gland).

**INTERPRETED BY**

Andrea Nicastro DVM  
 Diplomate ACVIM  
 (Sm Animal Internal Med)

**Adrenal Glands**

The left adrenal gland is mildly enlarged (0.56 cm at cranial pole) (0.61 cm at caudal pole) with a normal shape and homogenous parenchyma. The glandular echogenicity and detail are unremarkable. Capsule, cortex, and medullary definition are normal. The phrenicoabdominal vein and surrounding vasculature are normal.

**IMAGING PERFORMED BY**

Kerri Becker

In the region of the right adrenal gland, a 3.1 x 2.0 cm hypoechoic mass is visualized. Just caudal to this lesion, a 1.9 x 1.5 cm hypoechoic nodule is seen.

**HOSPITAL NAME**

Millburn VH

**Spleen**

The spleen is normal in size (1.63 cm in width at the level of the hilus) with a normal capsular contour. There is appropriate echogenicity and echotexture. No focal lesions are observed. Splenic vasculature is normal.

**REFERRING VET**

Dr. Turowsky

**Liver**

A 6.1 x 3.9 cm hyperechoic-to-heterogenous, vascular, microcavitated, expansile mass is observed in the left lateral lobe. In addition, a 3.4 x 3.1 cm hyperechoic-to-heterogenous cavitated mass is observed near the diaphragm on the right side. A smaller adjacent hyperechoic nodule is seen. At least one, small, parenchyma cyst is also seen on the right side. The remaining parenchyma is isoechoic relative to the spleen and mildly heterogenous in appearance. Hepatic vasculature and intrahepatic biliary tracts are of normal volume with no evidence of congestion.

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The gallbladder is of normal contours and contains some dependent echogenic debris. The wall is normal in thickness. No choleliths are observed. The cystic and common bile ducts are normal/not seen.

**Gastrointestinal**

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



**PATIENT**

intestinal wall is normal in thickness with a normal layering pattern and appropriate mural detail. Discreet masses are not identified. The colonic wall is normal. There is no evidence of an obstructive pattern.

Dixie Marks

**Pancreas**

**SPECIES**

The right limb of the pancreas is visible with normal curvilinear peripheral contours. The parenchyma is largely isoechoic relative to surrounding omental fat and slightly mottled in appearance. The pancreatic duct is visible but not overtly dilated. There is no evidence of peripancreatic inflammation or effusion.

Canine

**BREED**

**Lymph Nodes**

The abdominal lymph nodes are normal/not visible.

Tibetan Terrier

**Free Abdomen**

**SEX**

There is no obvious evidence of free fluid.

Female Spayed

**ULTRASONOGRAPHIC FINDINGS**

**AGE**

**Primary Findings**

12

- Large left hepatic mass, with a smaller hepatic mass adjacent to the diaphragm. Neoplasia (i.e., adenocarcinoma, sarcoma, round cell tumor) is suspected, with a lower possibility of a benign pathology (i.e., large, regenerative nodules, inflammatory foci, other). The diffuse hepatic parenchymal changes are nonspecific and could be secondary to regenerative nodular hyperplasia, age-related parenchymal remodeling, vacuolar hepatopathy, inflammatory disease, hepatotoxicosis (i.e., copper), infiltrative neoplasia, and/or other hepatopathy.

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- Mass(es) in the region of the right adrenal gland. A right adrenal mass is suspected. The origin of the more caudal-appearing nodule is unclear. It may be an extension of the right adrenal mass, or may be within the right renal parenchyma. Again, neoplasia (i.e., adenocarcinoma, pheochromocytoma, other) is of top concern, with a lower possibility of a benign process (i.e., hyperplasia, inflammatory lesion, other). Mild left adrenomegaly

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- Bilateral non-specific chronic renal changes with cortical cysts and a possible left renal nodule, which may represent a metastatic lesion, inflammatory focus/granuloma, cortical cyst, other.

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**Secondary Findings**

- Gallbladder debris, non-mucocele
- The urinary bladder wall changes in the region of the apex are suggestive of cystitis. Correlation with the patient's clinical history and urinalysis findings is recommended.
- Minor pancreatic parenchymal remodeling in the right limb

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**INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS**

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- Three-view thoracic radiographs are recommended to assess for pulmonary metastases.
- If an aggressive approach is desired, consider an abdominal CT scan to further evaluate abdominal pathology.
- Fine-needle aspirate of the left hepatic mass can also be considered (assuming normal clotting status). A 25-gauge needle should be used. There is some risk of iatrogenic hemorrhage with

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**INVOICE**

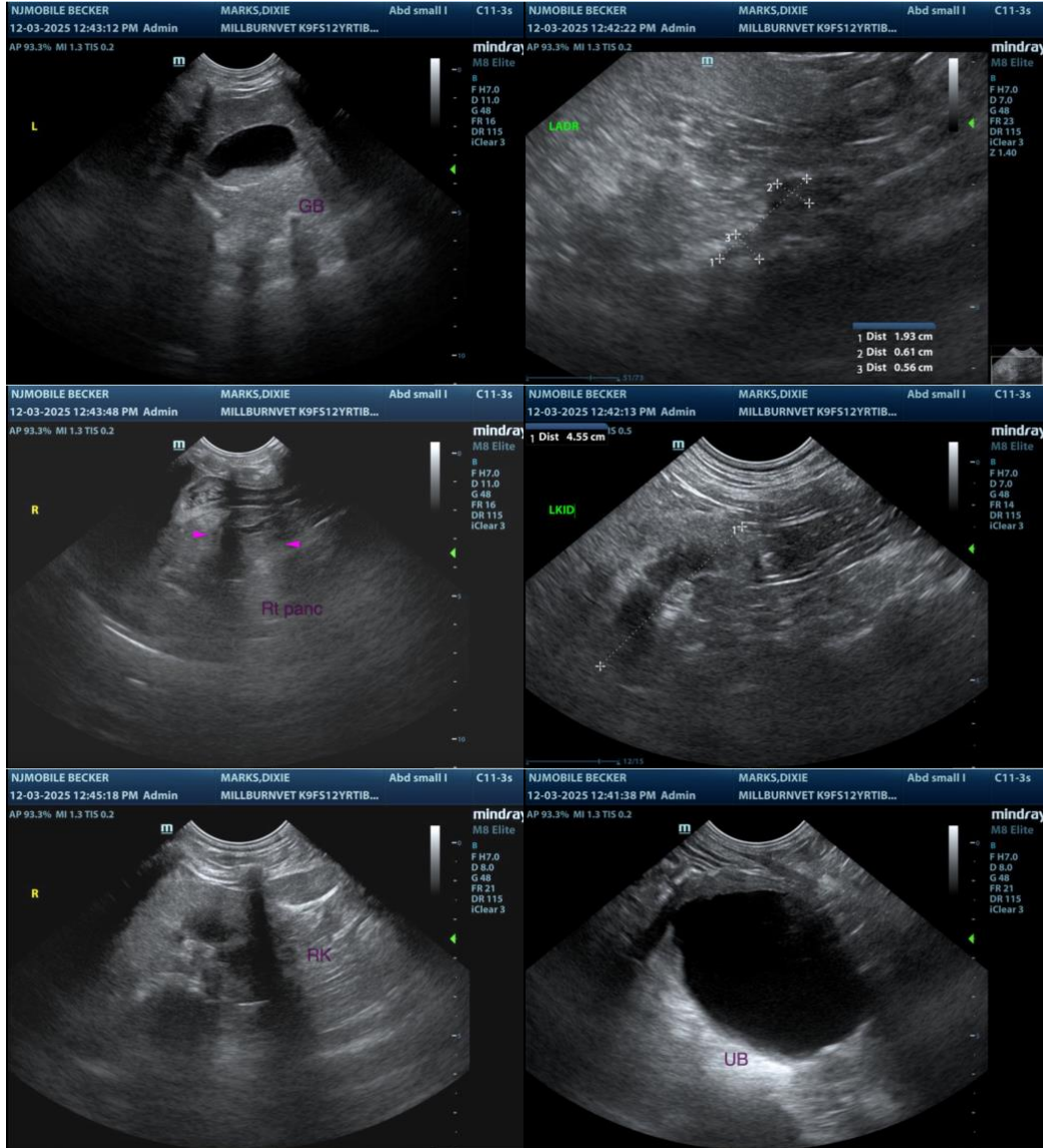
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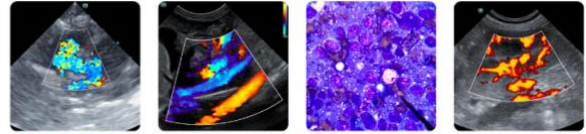
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aspiration. Therefore, if pursued, sonograph monitoring for hemorrhage post-procedure is recommended.

- If further diagnostics are not pursued, palliative care is recommended.





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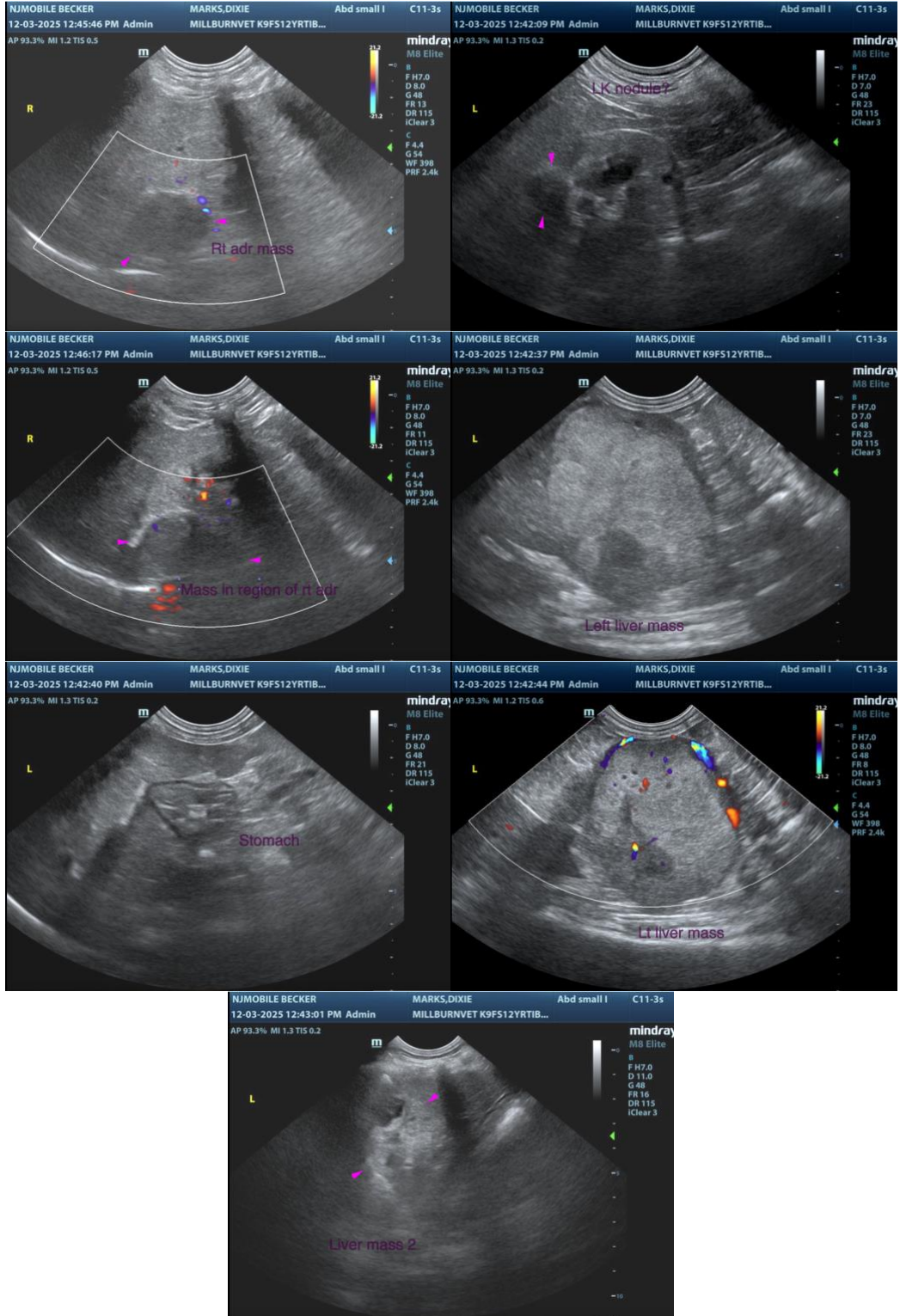
Dr. Turowsky

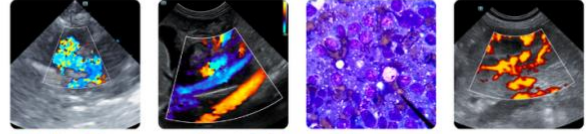
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**PATIENT**

Dixie Marks

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.

**SPECIES**

Canine

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.

**BREED**

Tibetan Terrier

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