



**PATIENT**

Benny Smith

**SPECIES**

Canine

**BREED**

Shih Tzu

**SEX**

MN

**AGE**

9 years

**WEIGHT**

15 lbs.

**INTERPRETED BY**

R. McKenzie Daniel,  
DVM, DABVP  
(Canine and Feline)

**IMAGING  
PERFORMED BY**

Diane McFadden

**HOSPITAL NAME**

Whippany VH

**REFERRING VET**

Dr. Smith

**INVOICE**

15827

**DATE**

1/13/23

**PRESENTING CLINICAL SIGNS**

pu/pd; yeast dermatitis-otitis, on meds: claritin 10 mg x 1/2 bid, apoquel 5.4mg x 1/2 bid, ketoconazole 200mg x 1/4 sid, cephradine . abdomen survey today, R/O adrenal disease, cushings, parathyroid disease.

Abnormal PE/Chem/CBC/UA Results: Ca 13.5, ALKP 193, tbili 0.4, trig 732, PSL 202, pending LDDS test with malignancy profile at Michigan state. UA: wnl, USPG 1.016

**ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN**

**Urinary System**

The urinary bladder, trigone, cystourethral junction, and visible pelvic urethra to a depth of 2.0 cm exhibited normal thickness and tone. Anechoic urine was present in the lumen with no sediment or calculi. The ureteral papillae were normal. The ureters were not visible which is normal. No evidence of inflammatory or neoplastic changes was noted.

The residual prostate was free of pathology.

No evidence of medial Iliac or sublumbar lymphadenopathy/masses.

Normal size and margination were present in the kidneys. A normal 1:3 cortex / medulla ratio was maintained. The medulla and cortices were uniform in texture with some increased echogenicity and mild loss of corticomedullary symmetry and definition expected for the age of the patient. No evidence of pelvic dilation was present. Pinpoint to focal areas of minor medullary mineral were noted. No pyelectasia was noted. The left kidney measured 4.2 cm in length. The right kidney measured 4.4 cm in length.

**Adrenal Glands**

The left and right adrenal glands were uniform in size and contour with a uniformly hypoechoic parenchyma. The left adrenal gland measured 2.1 cm length x 0.43 cm width at the caudal pole. The right adrenal gland measured 2.0 cm length x 0.43 cm width at the caudal pole. No adrenal tumors or adrenomegaly was noted.

**Spleen**

The spleen exhibited a finely textured and homogenous parenchyma which was hyperechoic to the liver and renal cortical parenchyma. The capsule was smooth and regular without apparent expansion. The splenic vasculature at the hilus was normal in volume with no evidence of congestion or thrombosis. Acute to chronic inflammatory, neoplastic, or benign parenchyma changes were not noted.

**Liver/ Gallbladder**

The liver exhibited subjective mild enlargement yet maintained a symmetrical capsule contour with generalized nonhomogeneous intermittently nodular parenchyma. An example of a liver nodule measured 1.2 cm in diameter. The nodules did not distort the hepatic capsule. The gallbladder was non-distended in size exhibiting mild prominent to hyperechoic gallbladder walls containing anechoic content with no evidence of gallbladder sludge or calculi. The cystic and common bile ducts were normal.



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***Gastrointestinal***

The stomach presented intact wall layering with a normal wall layer ratio. Mild non-shadowing gastric ingesta / chyme was noted.

The small intestine presented intact wall layering with 1:3 muscularis/mucosa ratio. The lumen of the small intestine was empty with no signs of ileus, obstruction, or foreign material.

Normal visible colon wall layers were present with apparent formed feces in lumen.

***Pancreas***

The pancreas was normal in size and contour with isoechoic to heterogeneous parenchyma compared to adjacent omentum. No signs of active inflammation or neoplasia.

***Free Abdomen***

No omental masses, lymphadenopathy, or evidence of peritoneal effusion were noted.

**ULTRASONOGRAPHIC FINDINGS**

- Nonhomogeneous to nodular liver - nonspecific, vacuolar hepatopathy, chronic inflammatory / immune-mediated disease, hyperplasia, hematopoiesis, fibrosis, and infiltrative neoplasia are all potentials
- Possible mild chronic cholecystitis
- Sonographically unremarkable gastrointestinal tract with mild gastric ingesta / chyme
- Mild heterogeneous pancreas - if no previous history of pancreatitis, suspect patient / early age-related variant and benign remodeling
- Bilateral focal to mild medullary mineral
- Normal bilateral adrenal glands

**INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS**

Assuming normal clotting status, screening hepatic FNA cytology is recommended for further assessment.

Potential for chronic pancreatitis may be suspected if evidence of cranial abdominal or subxiphoid discomfort on palpation. Although normal bilateral adrenal presentation, correlation with pending LDDST test is suggested.

Empirical hepatosupportive medications including Denamarin and Ursodiol may prove beneficial if increasing hepatic enzyme elevations or cholestasis. If not done, rectal palpation and three-view chest radiographs are suggested to rule out occult disease as a contributing factor to the hypercalcemia.



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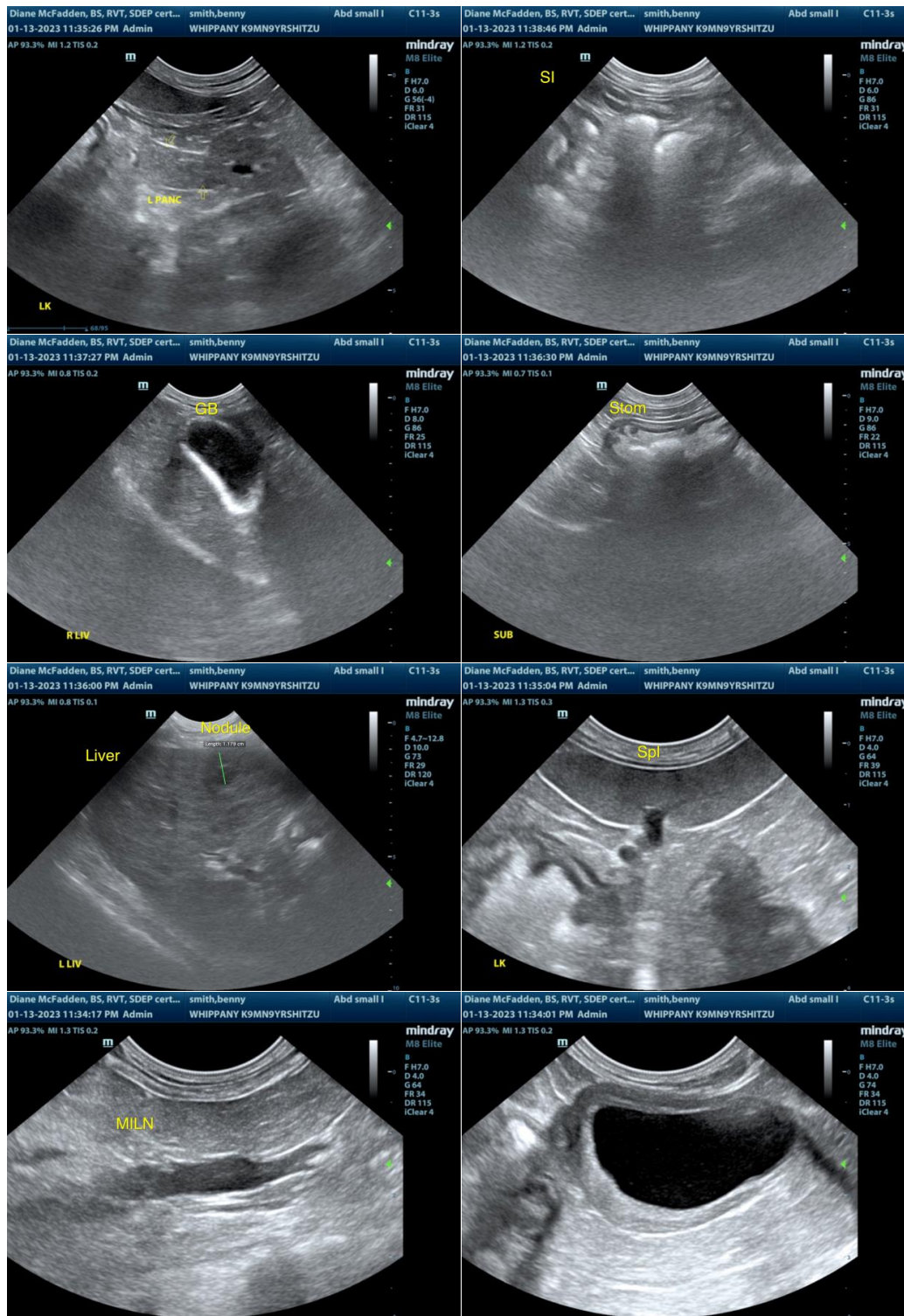
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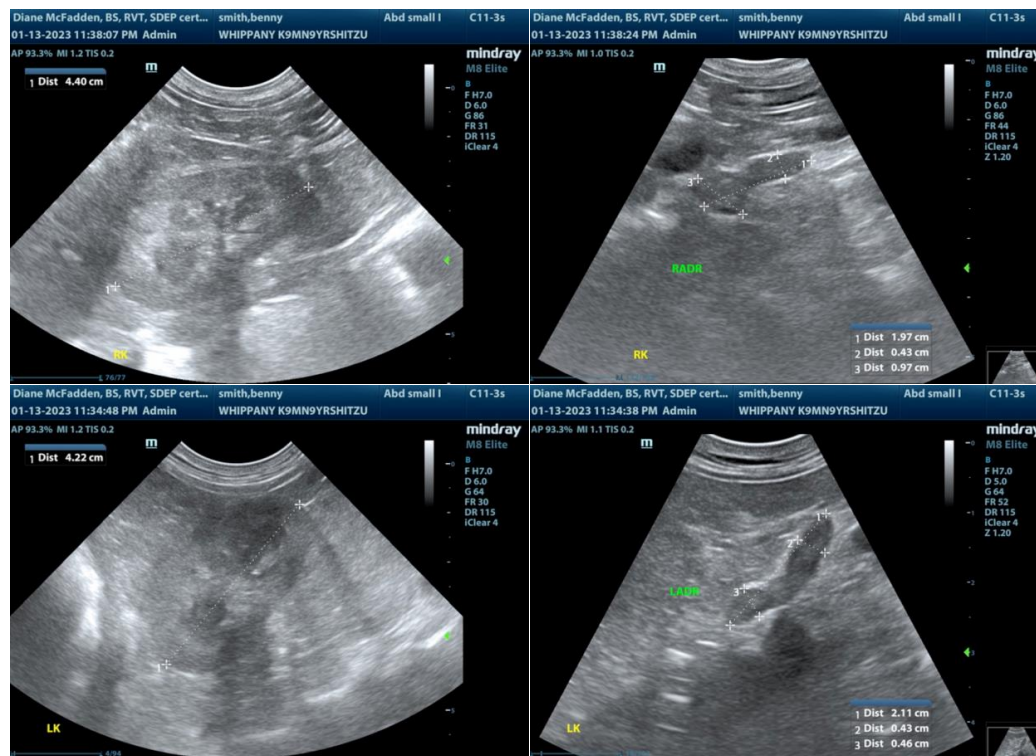
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**The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.**

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.

**R. McKenzie Daniel, DVM, DABVP (Canine / Feline Practice)**  
info@SonoPath.com