



**PATIENT PRESENTING CLINICAL SIGNS**

Bella Solano History: Elevated liver values  
 Medication: Denamarin

**SPECIES** ALP 337, ALT 289, CK 216, Lipase 422

Canine

**ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN**

**BREED** *Urinary System*

Maltese 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 uroliths or sediment. The ureteral papillae were normal. The ureters were not visible which is normal. No evidence of inflammatory or neoplastic changes were noted.

**SEX**

FS

Normal size and margination were present in the kidneys. A normal 1:3 cortex / medulla ratio and normal corticomedullary definition were maintained. Increased parenchyma echogenicity was noted in the area of the corticomedullary border of both kidneys. The left kidney measured 2.8 cm. The right kidney measured 3.0 cm.

**AGE**

8 years

The area of the aortic trifurcation was free of pathology.

*Adrenal Glands*

**WEIGHT**

6 Pounds

The adrenal glands were uniform in size and contour with a uniformly hypoechoic parenchyma. The left adrenal gland measured 0.33 cm at the cranial pole and 0.55 cm at the caudal pole. The right adrenal gland measured 0.48 cm at the cranial pole and 0.49 cm at the caudal pole.

**INTERPRETED BY** *Spleen*

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

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.

**IMAGING PERFORMED BY** *Liver*

Rebekah Jakum, CVT  
 ARDMS/RVT

The liver was mildly enlarged. The liver parenchyma was mildly nonuniform and hypoechoic to the spleen with a moderate coarse echotexture and subjective mild to benign parenchymal remodeling. Intermittent, non-expansive, subtle hypoechoic parenchymal nodules were present. Example of nodule measured 0.90 cm in diameter. The hepatic and portal vasculature were normal in appearance without signs of congestion. gallbladder was non-distended in size with thin walls and primarily anechoic luminal content. The cystic and common bile ducts were normal.

**HOSPITAL NAME**

Stanglein VC

**REFERRING VET** *Gastrointestinal*

Dr. Rothrock

The stomach presented intact wall layering with a normal wall layer ratio. The lumen of the stomach was empty with no signs of ileus, obstruction or foreign material. Stomach wall measured 0.27 cm.

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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. Duodenum wall measured 0.39 cm. Jejunum wall measured 0.30 cm.

**DATE**

10.15.2021

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



**PATIENT** *Pancreas*

Bella Solano The parenchyma of the left limb, body and right limb of the pancreas presented isoechoic to the adjacent omental fat. A normal curvilinear capsule contour of the pancreas was present. The visible pancreatic duct was normal. No signs of active inflammation or neoplastic disease was evident.

**SPECIES** *Free Abdomen*

Canine No overt lymphadenopathy or peritoneal effusion was present.

**BREED** **ULTRASONOGRAPHIC FINDINGS**

- Maltese
- Hepatopathy with mild parenchymal remodeling and intermittent subtly hypoechoic to non-expansive parenchymal nodules
  - Non-specific increased renal parenchyma echogenicity in the area of corticomedullary border – likely patient variant.

**SEX**

FS

**INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS**

The appearance of the liver was nonspecific but likely consistent with benign hepatopathy with parenchymal remodeling and non-specific yet benign subtle nodular changes as with areas of hematopoiesis or nodular to regenerative hyperplasia. Considerations for the liver may include vacuolar hepatopathy in light of the elevated ALP with potential for cholestasis or non-specific hepatitis (inflammatory, infectious) in light of the elevated ALT. No overt evidence of hepatic neoplasia which is considered unlikely. Ultrasound guided FNA of the liver using a 25-gauge needle and assuming normal coagulation parameters would be warranted for screening cytology, primarily to assess for evidence of inflammatory cells and to rule out unlikely neoplasia. Hepatosupportive medications such as Denamarin or Vitamin E as well as Ursodiol due to its antioxidant and immunomodulatory effects within the liver would be warranted, although these medications may not result in decreased hepatic enzyme levels.

**AGE**

8 years

**WEIGHT**

6 Pounds

**INTERPRETED BY**

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

An empirical antibiotic trial such as Amoxicillin/Metronidazole combination (initially for two weeks) in addition to hepatosupportive medications may be considered. Potential for 4-6 weeks of antibiotic therapy may be indicated if positive response. However, discontinuation of antibiotics recommended if no improvement. Hepatic core biopsy may be required for definitive diagnosis.

**IMAGING PERFORMED BY**

Rebekah Jakum, CVT  
ARDMS/RVT

**HOSPITAL NAME**

Stanglein VC

**REFERRING VET**

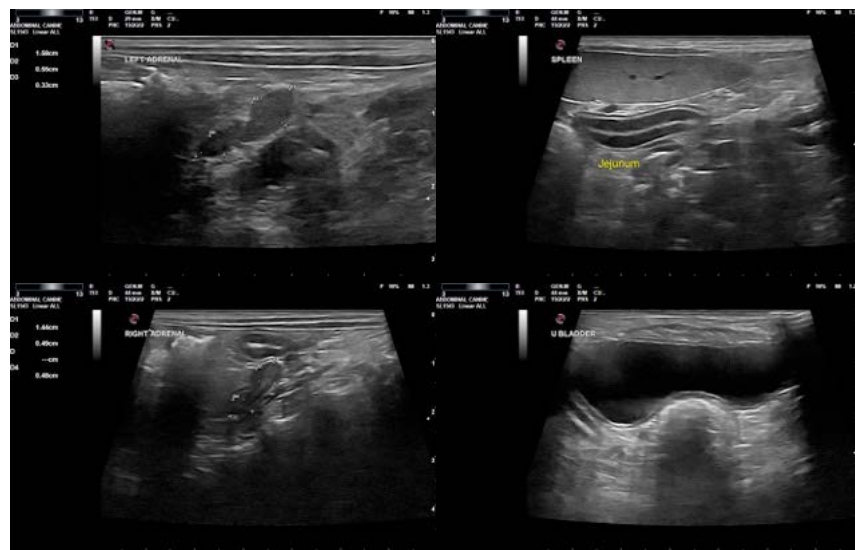
Dr. Rothrock

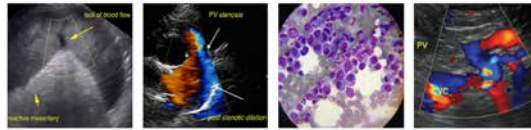
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**PATIENT**

Bella Solano

**SPECIES**

Canine

**BREED**

Maltese

**SEX**

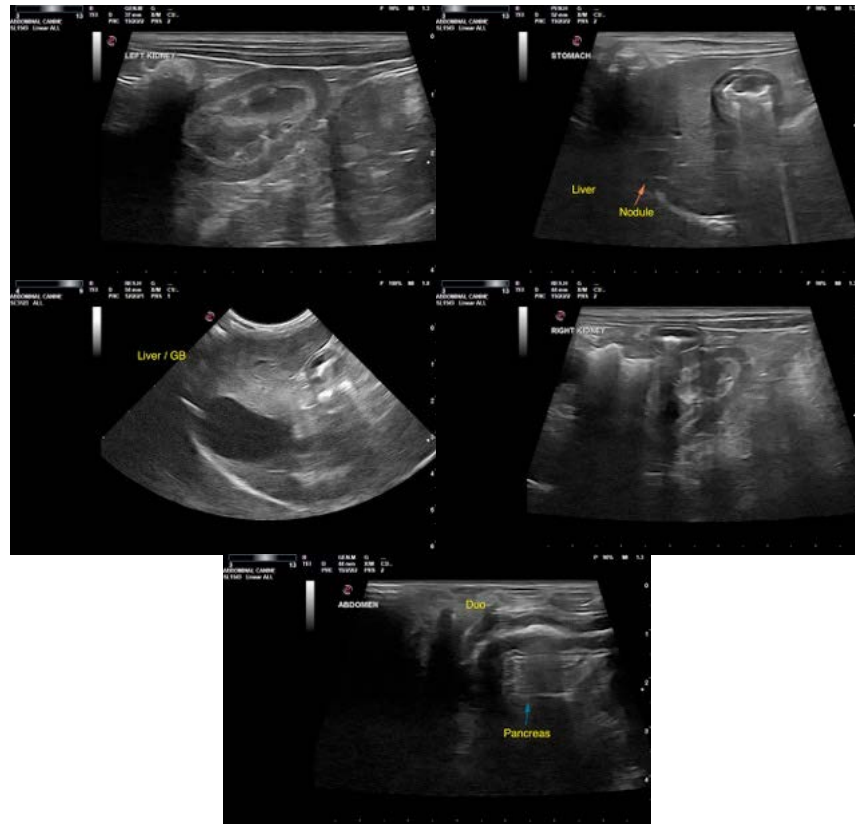
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**AGE**

8 years

**WEIGHT**

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**INTERPRETED BY**

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The information and recommendations provided are based on the images presented by the referring veterinarian. 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.

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