



**PATIENT**

Bella Mitchell

**SPECIES**

Canine

**BREED**

Silky Terrier

**SEX**

Spayed female

**AGE**

9 years

**WEIGHT**

11.6 lbs

**INTERPRETED BY**

Eric Lindquist, DMV  
DABVP, Cert. IVUSS

**IMAGING PERFORMED BY**

Dr. Whitesell

**HOSPITAL NAME**

Dickson Animal Clinic

**REFERRING VET**

Dr. Whitesell

**INVOICE**

42815

**DATE**

12/1/22

**PRESENTING CLINICAL SIGNS**

History: PU/PD, large potbellied abdomen, thin skin, prominent vessels under the skin on abdomen  
Abnormal PE/Chem/CBC/UA Results: Elevated liver values ALT 483 IU/L, Alk phos 1,358 IU/L, GGT 340 IU/L, USG 1.011, T4 low 0.6 ug/dL

**ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN**

**Urinary System**

The **urinary bladder**, trigone, and pelvic urethra presented normal thicknesses and normal tone. The ureters were not visible which is normal. No uroliths or sediment were visualized and anechoic urine was present. No evidence of inflammatory or neoplastic changes was noted. Ureteral papillae were normal.

The **kidneys** revealed normal size and structure, corticomedullary definition and ratio for this age. The cortices presented largely uniform texture with normal echogenic relationship to liver and spleen. Medullary structure differed distinctly from the cortex and no evidence of pelvic dilation was present. The capsules were acceptably uniform without significant irregularities. Slight mineralization was noted. The left kidney measured 3.9 cm.

**Adrenal Glands**

Both **adrenal glands** were swollen and slightly irregular. The adrenal glands were at the upper limits of normal for this size patient. The right adrenal gland measured 0.57 cm. The left adrenal gland measured 0.7 cm.

**Spleen**

The **spleen** presented a smooth homogeneous parenchyma hyperechoic to liver and renal cortical parenchyma. The capsule was smooth without noticeable expansion or deviation from within the spleen or adjacent pathology. The splenic vasculature demonstrated normal volume without signs of congestion or thrombosis. No sonographic evidence of acute or chronic inflammatory, neoplastic, or infarctual changes was noted.

**Liver**

The **liver** was uniformly swollen with minor, excessive gallbladder debris and over distension with dependent and suspended bile without evidence of overt mucocele formation. However, excessive sludge was present. The liver presented coarse architecture with mildly increased portal markings and subtle, mixed echogenic changes. This is consistent with vacuolar hepatopathy and some level of remodeling and history of inflammatory component. There was no overt suspicion of neoplasia.



**PATIENT**

**Gastrointestinal**

Bella Mitchell

Examination of the **gastrointestinal tract** revealed a stomach and intestine free of stasis, of normal wall thickness, acceptable curvilinear mural detail, and peristaltic activity. Small and large intestine demonstrated normal luminal chyme and stool consistency respectively. No obstructive or overt infiltrative disease was noted. No associated abnormal lymphatic activity was noted.

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**Pancreas**

Diffuse hyperechoic changes were present in the area of the **pancreas**. The pancreatic remodeling was evident with multifocal to diffuse hyperechoic changes. These changes are consistent with fibrosis, amyloid, saponification of fat and may contain areas of low-grade chronic active inflammation especially if pain on imaging (+ Murphy sign) was present +/- focal subxiphoid palpation reveals pain response. No overt masses were noted.

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**ULTRASONOGRAPHIC FINDINGS**

Benign hepatopathy with inflammatory component.

Age related renal changes.

**WEIGHT**

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Pancreatic remodeling.

Swollen, irregular adrenal glands.

**INTERPRETED BY**

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**INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS**

Given the global presentation there is a strong concern for pituitary dependent hyperadrenocorticism. FNA of the liver is indicated. Work-up for Cushing's/PDH is indicated. FNA of the liver is indicated for further definition.

**IMAGING PERFORMED BY**

Dr. Whitesell

**Efficient & Accurate Cushing's Work up-Lindquist**

**Notes regarding Cushing's Clinical Presentations:**

*Nearly all Cushing's dogs have SAP elevations and true PU/PD (USG < 1.025) and most are polyphagic.*

*Cushing's dogs are > 6 years and usually > 9 years old, usually have poor skin coats, body scores > 3/5, and are usually sedentary animals.*

*Its important to remember that Cushing's dogs usually look and play the part and other diseases cause false + stress related cortisol spikes. On rare occasion a Cushing's dog will not follow the rules but this is truly an exception.*

*Potential Cushing's patient workups can be costly and frustrating if not definitive and, in my experience, the non-definitive patient usually has something else going on that may be contributing to some of the clinical signs a Cushing's dog will have, especially SAP elevations or PU/PD. Based on this prelude of information I came up with the following algorithm in the spirit of diagnostic efficiency. The following suggested protocol is based on current available literature on Cushing's disease and extensive clinical-sonographic experience evaluation + Cushing's and False + LDDST & ACTH stim. cases in order to maximize the efficiency of a Cushing's workup in practice.*

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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.

Eric Lindquist, DMV, DABVP, Cert. IVUSS, CEO of SonoPath.com  
info@SonoPath.com