



**PATIENT PRESENTING CLINICAL SIGNS**

Dottie Bielenberg

History: Dottie needs a dental treatment and extractions. Echo 9/2021 = Stage B1 valvular disease. No follow up echo since. Clinically is doing fine. ALT and AST elevations on pre-anesthetic labs (mild but up 3X what she normally runs).

**SPECIES**

Canine

Abnormal PE/Chem/CBC/UA Results: PE: Stage III dental disease, II/VI systolic left base cardiac murmur, sclerosis normal for age (lenses), missing right hind limb at distal femur. SMALL CHEM ONLY: ALT 390 U/L (runs 40 to 90 U/L), AST 62 UL (runs 20 to 30 U/L)

**BREED**

Terrier Mix

**ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN**

**Urinary System**

**SEX**

Spayed female

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.

**AGE**

7 years

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.

**WEIGHT**

17 lbs

Medullary structure differed distinctly from the cortex and no evidence of pelvic dilation was present. The capsules were acceptably uniform without significant irregularities. The right kidney measured 5.43 cm. The left kidney measured 5.62 cm.

**INTERPRETED BY**

Eric Lindquist, DMV DABVP, Cert. IVUSS

**Adrenal Glands**

Both **adrenal glands** were visualized and recognized as having normal shape, size, position and echogenicity for this breed. The phrenic vasculature, glandular echogenicity and detail were unremarkable. Capsule, cortex, and medullary definition were normal for this age patient. The left adrenal gland measured 1.91 x 0.47 cm at the cranial pole and 0.56 cm at the caudal pole. The right adrenal gland measured 1.81 x 0.69 cm at the cranial pole and 0.58 cm at the caudal pole.

**IMAGING PERFORMED BY**

Dr. Anderson

**HOSPITAL NAME**

Elizabeth AH

**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.

**REFERRING VET**

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**Liver**

The **liver** images from right and left intercostal as well as subcostal views revealed subjectively normal liver size, contour, and structure. Some age-related parenchymal remodeling was noted but likely not clinically significant at this time. Vascular and biliary tracts were of normal volume and no evidence of congestion was noted. The gallbladder presented some dependent debris with essentially normal contour. The cystic and common bile ducts were normal. No overt evidence of active inflammatory,

**DATE**

11/30/22



<b>PATIENT</b>	infiltrative or regenerative pathology was noted but should be paired with current or past LE elevations regarding any clinical significance to this presentation. The hepatic lymph nodes were unremarkable.
Dottie Bielenberg	
<b>SPECIES</b>	<b><i>Gastrointestinal</i></b>
Canine	Examination of the <b>gastrointestinal tract</b> 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.
<b>BREED</b>	
Terrier Mix	
<b>SEX</b>	<b><i>Pancreas</i></b>
Spayed female	The base and limbs of the <b>pancreas</b> were observed to be largely isoechoic to surrounding omental fat. Pancreatic duct and capsular contour were acceptably normal and parenchyma respected normal curvilinear patterns. No overt evidence of active inflammatory or neoplastic disease was noted.
<b>AGE</b>	
7 years	<b>ULTRASONOGRAPHIC FINDINGS</b>
<b>WEIGHT</b>	Non-specific, age related hepatic changes.
17 lbs	<b><u>INTERPRETATION OF THE FINDINGS &amp; FURTHER RECOMMENDATIONS</u></b>
<b>INTERPRETED BY</b>	There was no evidence of pathology. Likely reactive hepatopathy or low-grade, non-specific inflammatory hepatopathy. This may be related to dental disease given the patient's history. There is no contraindication to anesthetic procedure. FNA of the liver can be considered at the time of the dental procedure for completeness and assess of inflammatory cell type.
Eric Lindquist, DMV DABVP, Cert. IVUSS	
<b>IMAGING PERFORMED BY</b>	The hepatic clinical sonographic presentation is most consistent with Reactive Hepatopathy which is the most common cause of liver enzyme elevation in dogs and cats. The presumption is that gut and other organ antigen stimuli may be causing a low-grade immune response through portal system with which the liver is reacting to causing low-grade enzyme elevations. US-guided FNA could be performed to assess if low grade lymphoplasmacytic inflammation is present that would support this theory. If FNA is performed, please ask the cytologist to emphasize the primary inflammatory cell type. Empirical treatment measures to address this issue can include diet change to hydrolyzed diet, probiotics, deworming, nutraceuticals (SAME, Actigall...), dental exam and cleaning, and potentially antibiotics such as Clavamox. Metronidazole and Tylosin have traditionally been utilized for this purpose but new studies show that both these antibiotics can disrupt the normal intestinal bacterial flora (intestinal dysbiosis) for weeks and up to 4-6 months. Therefore, Metronidazole and Tylosin should be utilized as a last resort if other efforts have not been effective and sonographic organ appearance remains benign.
Dr. Anderson	
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**PATIENT**

Dottie Bielenberg

**SPECIES**

Canine

**BREED**

Terrier Mix

**SEX**

Spayed female

**AGE**

7 years

**WEIGHT**

17 lbs

**INTERPRETED BY**

Eric Lindquist, DMV  
DABVP, Cert. IVUSS

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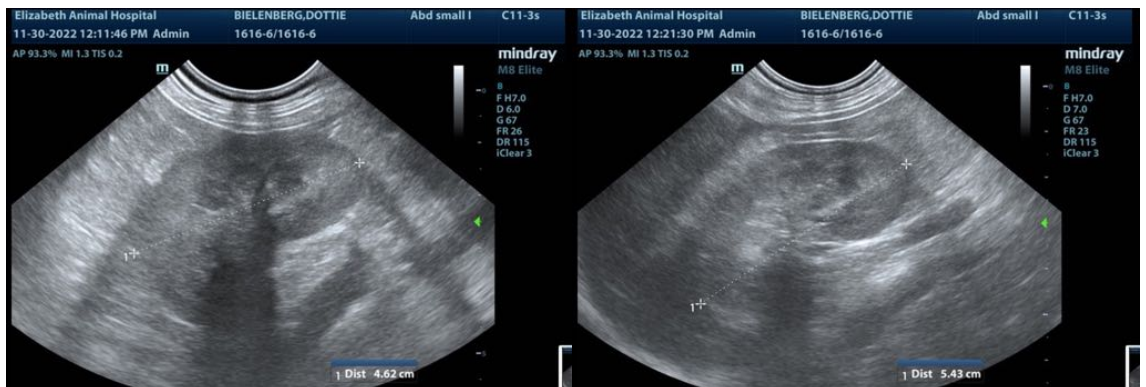
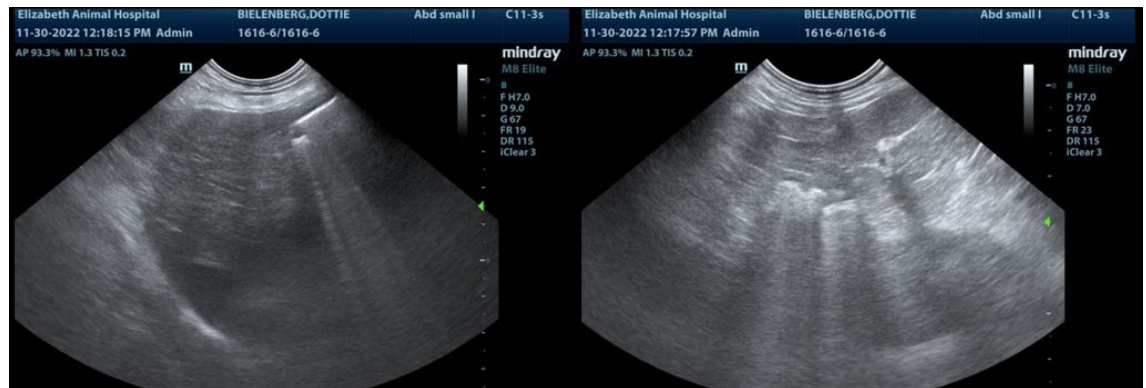
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**PATIENT**

Dottie Bielenberg

**SPECIES**

Canine

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.

**BREED**

Terrier Mix

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.

**SEX**

Spayed female

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

**AGE**

7 years

**WEIGHT**

17 lbs

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PERFORMED BY**

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