



**PATIENT**

Kesi Meltebeke

**SPECIES**

Canine

**BREED**

Parti Morkie

**SEX**

Spayed Female

**AGE**

10 years

**WEIGHT**

15.4 lbs

**INTERPRETED BY**

Kathleen Sennello  
DVM, MS, Diplomate  
ACVIM (Small Animal  
Internal Medicine)

**IMAGING PERFORMED BY**

Jenna Walsh, CVT

**HOSPITAL NAME**

Willakenzie AC

**REFERRING VET**

Dr. Whalen

**DATE**

10/27/21

**Invoice**

**PRESENTING CLINICAL SIGNS**

History: History of mild weight loss - about 1 pound in the last 3 months. Possible enlarged liver palpated in the cranial abdomen. Otherwise WNL PE. O reports p is clinically normal at home ALP elevated in 06/21 at 790 Repeat labwork showed 809 ALP 10/19 Otherwise WNL

**ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN**

**Urinary System**

The urinary bladder is moderately distended with anechoic urine. The Bladder wall, trigone, ureteral papillae and visible urethra (to a depth of 2cm) appear normal with no evidence of wall thickening, mucosal irregularities, masses or cystic calculi.

The left kidney has a normal shape and size (4.45 cm). Overall echogenicity is slightly hyperechoic with poor corticomedullary distinction and a typical 1:3 cortex:medulla ratio. There is no evidence of perinephric inflammation or effusion. There is no evidence of pyelectasia, nephroliths, infarcts or hydroureter. Renal vasculature is normal.

The right kidney has a normal shape and size (3.55 cm). Overall echogenicity is slightly hyperechoic with poor corticomedullary distinction and a typical 1:3 cortex:medulla ratio. There is no evidence of perinephric inflammation or effusion. There is no evidence of pyelectasia, nephroliths, infarcts or hydroureter. Renal vasculature is normal.

**Adrenal Glands**

The left adrenal gland is normal in size measuring 0.63 cm at the caudal pole It is observed in its normal position cranial to the left renal artery. It is normal in appearance (uniformly hypoechoic) and shape with no evidence of a mass effect.

The right adrenal gland is normal in size measuring 0.73 cm at the caudal pole It is observed in its normal position between the cranial aspect of the right kidney and the caudal vena cava. It is normal in appearance (uniformly hypoechoic) and shape with no evidence of a mass effect.

**Spleen**

The spleen is subjectively normal in size, echotexture is homogenous, and the splenic capsule is smooth with no irregularities. The blood flow through the hilus and splenic parenchyma appears normal. No focal parenchymal abnormalities are visualized.

**Liver**

The liver is subjectively large/normal in size with smooth peripheral margins. The parenchyma is hyperechoic and homogenous in echotexture. The visible portions of the vasculature and biliary tract



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appear normal. No focal nodules or cystic lesions are observed. There is a hyperechoic, cystic lesion visualized adjacent to the gallbladder and measured 3.44 x 3.1 cm. The gallbladder lumen is moderately distended. The wall of the gallbladder is not thickened and has a smooth mucosal surface. Luminal contents are primarily anechoic. The cystic and common bile ducts are normal/not visible.

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**Gastrointestinal**

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The stomach contains minimal luminal contents. It measures at a normal thickness of <0.7cm with some variability due to the presence of rugal folds. The distinction of the gastric wall layers is adequate and there is no impression of reduced peristaltic activity. No masses or focal lesions were observed.

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The visualized areas of duodenum, jejunum and ileum have a relatively uniform diameter with minimal fluid distension. Wall thickness is normal. Bowel loops follow a curvilinear path with distinct wall layering maintaining the typical 1:3 muscularis:mucosa layer ratio. The duodenum measured as normal (0.42 cm) and the jejunum measured as normal (0.28 cm). Visualized peristalsis appears appropriate. There were no focal lesions consistent with obstruction or a mass effect observed.

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The ileocecal junction was visualized and exhibited normal intact wall layering and is subjectively of normal thickness. Sections of colon are visualized with formed fecal material and gas shadowing distally. There is no observed focal or generalized colon wall thickening or loss of layering.

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**Pancreas**

The pancreas is normal and isoechoic to surrounding mesentery. There is no evidence of nodules or cystic lesions. There is no evidence of regional mesenteric inflammation or fluid.

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**Free Abdomen**

Evaluation of the peritoneal cavity did not reveal any evidence of effusion, or subjective lymphadenomegaly. The Medial iliac nodes appear normal and there was no evidence of a caudal aortic thrombus at the bifurcation. The omentum is of normal uniform echogenicity.

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**ULTRASONOGRAPHIC FINDINGS**

**PRIMARY FINDINGS:**

- Hyperechoic, large liver with cystic mass effect. The diffuse hepatic changes are non-specific and can be seen with vacuolar hepatopathy, reactive change, nodular hyperplasia or, less likely, inflammatory/immune-mediated disease, infiltrative neoplasia, or other hepatopathy. The cystic mass lesion is somewhat amorphous and would be difficult to sample due to its cystic/multi-loculated appearance. This could be consistent with a benign cystic mass or something more concerning like a carcinoma.

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**SECONDARY FINDINGS:**

- Mildly decreased corticomedullary distinction in both kidneys. The bilateral renal findings are

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consistent with age-related change.

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**INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS**

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The liver is large and hyperechoic and both adrenal glands are in the high end of normal size for this type of dog so Cushing's is a possible differential for the elevated ALP, but this would be less likely to explain the weight loss, etc. There is a cystic mass lesion observed in the liver. This could be a benign slow growing mass or something more sinister. Options moving forward would be either to CT the abdomen to determine if it is surgically resectable and if more information can be determined regarding the proximity to the gallbladder, etc. or you can consider to continue monitoring with ultrasound. I recommend three view thoracic radiographs. These are the recommendations that I give for a dog with an elevated ALP and relatively normal looking adrenal glands.

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An elevation in ALP is a common finding. In general, however, causes of ALP elevation fall into three primary categories:

Induction phenomena, biliary diseases, and primary liver disorders.

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- Induction phenomena are the most common cause for an elevated ALP. These are systemic illnesses that 'turn on' the liver enzyme. Causes of this include Cushing's disease, dental disease, arthritis, and numerous others. In many cases the exact cause is unclear but as long as ultrasound and bile acids tests are normal most patients do not have progressive changes in their liver. While liver biopsy is not routinely performed, vacuolar hepatopathy, is noted on most biopsies. This is often non-progressive but in rare cases can be more severe and lead to liver failure.

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- If signs of Cushing's disease are present recommend endocrine function testing to evaluate for Cushing's disease.
- Consider fine needle aspirate to rule out round cell neoplasia -if this is a concern.
- If a cause for the ALP elevation is not identified: I recommend recheck general blood work every 6 months, ultrasound once per year, and bile acids test every 1-2 years based on other results. If the ALP continues to climb a biopsy could be considered.
- Consider long term use of Denamarin, and monitoring for the signs of Cushing's developing.
- A primary vacuolar hepatopathy can be breed related and is seen in Scottish Terriers, Schnauzers, Cocker spaniels etc..

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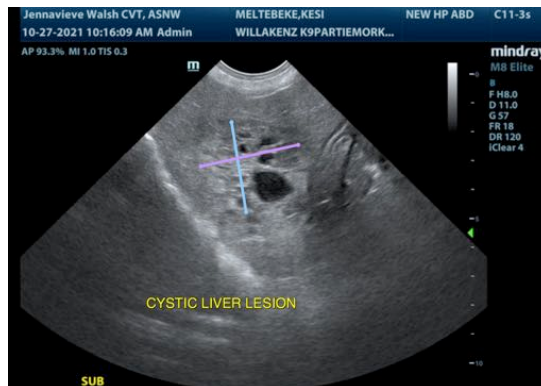
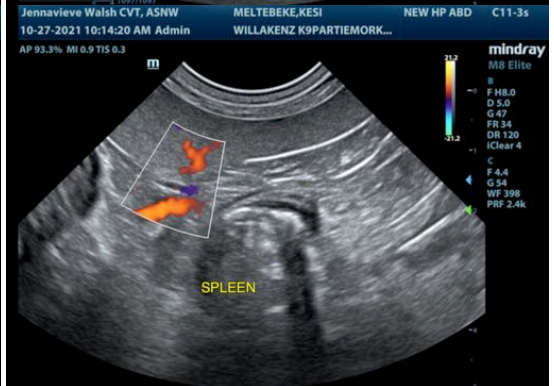
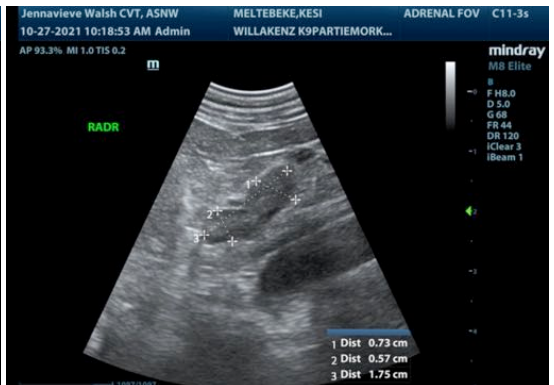
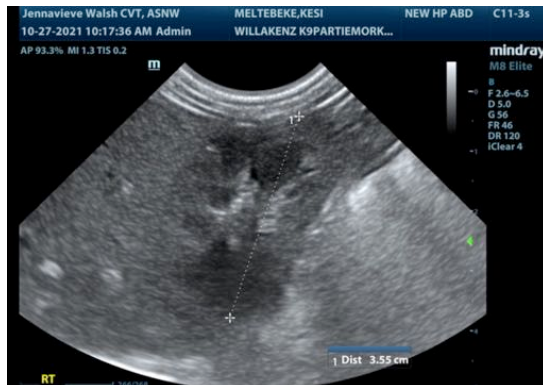
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The information and recommendations provided are based on the images presented by the referring veterinarian. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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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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kathleen.sennello@sonopath.com

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