



PATIENT

Pheobe Esmurdoc

SPECIES

Canine

BREED

Chihuahua

SEX

Spayed Female

AGE

9 Years

WEIGHT

12 Pounds

INTERPRETED BY

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

**IMAGING
PERFORMED BY**

Kelly Vazquez

HOSPITAL NAME

Animal Paradise
Hospital

REFERRING VET

Dr. Elshafie

INVOICE

14650

DATE

4/8/22

PRESENTING CLINICAL SIGNS

History: Patient presents for high ALP and ALB.

Abnormal PE/Chem/CBC/UA Results: ALP 427, alb 4.7, cPL - abnormal.

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 2 cm) appear normal with no evidence of wall thickening, mucosal irregularities, masses or cystic calculi.

The left kidney has a normal shape and size (3.79 cm). Overall echogenicity is normal with adequate 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 (3.74 cm). Overall echogenicity is normal with adequate 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 0.48 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 0.41 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 in size, and echogenicity with smooth peripheral margins. The parenchyma is heterogenous in echotexture with subtle, indistinct focal mottling. The visible portions of the vasculature and biliary tract appear normal. There are numerous ill-defined hyper- and hypoechoic nodules throughout the hepatic parenchyma. There is a more distinct hyperechoic nodule visualized, measuring 0.42 cm x 0.56 cm. On the left side, there is an ill-defined region of isoechoic tissue, measuring 1.91 cm x 2.22 cm, that could be consistent with a larger ill-defined nodule.

The gall bladder lumen is moderately distended. The wall of the gall bladder is not thickened and has a smooth mucosal surface. Luminal contents are primarily anechoic. The cystic and common bile ducts are normal/not visible.

Gastrointestinal



PATIENT

Pheobe Esmurdoc

The stomach contains minimal luminal contents. It measures at a normal thickness of <0.65 cm (normal is < 0.7 cm) but appears somewhat subjectively thickened with a mild reduction in the detailed layering. There is variability due to the presence of rugal folds. No masses or focal lesions were observed. This could be consistent with image artifact or an early subtle lesion (gastritis, etc.).

SPECIES

Canine

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 (between 0.3-0.5cm in wall thickness) and the jejunum measured as normal (between 0.2-0.47cm.)

BREED

Chihuahua

Visualized peristalsis appears appropriate. There were no focal lesions consistent with obstruction or a mass effect observed.

SEX

Spayed Female

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.

Pancreas

AGE

9 Years

The (pancreas/region of 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.

Free Abdomen

WEIGHT

12 Pounds

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.

INTERPRETED BY

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

ULTRASONOGRAPHIC FINDINGS

- Large heterogenous liver with ill-defined nodules. The diffuse hepatic changes are non-specific and could be consistent with vacuolar hepatopathy, nodular hyperplasia, inflammatory/immune-mediated disease, fibrosis, extramedullary hematopoiesis, toxic hepatopathy (e.g., copper), infiltrative neoplasia (less likely) or other hepatopathy. The nodules do not appear particularly distinct or expansile and trend toward a benign appearance, although underlying neoplastic change cannot be excluded.
- Questionably thickened gastric wall. This is most likely consistent with imaging artifact, but continued monitoring is warranted for the development of GI signs.

IMAGING PERFORMED BY

Kelly Vazquez

HOSPITAL NAME

Animal Paradise
Hospital

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

The liver appears somewhat irregular and nodular, but no large focal mass effects are observed, and the gallbladder appears normal. These are my recommendations for a pet with an ALP elevation.

REFERRING VET

Dr. Elshafie

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

INVOICE

Induction phenomena, biliary diseases, and primary liver disorders.

14650

DATE

4/8/22

- Induction phenomena are the most common cause for an elevation in 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



PATIENT

Pheobe Esmurdoc

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.

SPECIES

Canine

- If signs of cushings disease are present recommend endocrine function testing to evaluate for cushings disease.

BREED

Chihuahua

- Consider fine needle aspirate to rule out round cell neoplasia if this is a concern.

SEX

Spayed Female

- 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.

AGE

9 Years

- Consider long term use of denamarin, and monitoring for the signs of cushings developing.

WEIGHT

12 Pounds

- A primary vacuolar hepatopathy can be breed related and is seen in Scottish Terriers, Schnauzers, Cocker spaniels etc.

As the liver does appear significantly nodular, I recommend a fine needle aspirate, ideally of the left side of the liver where the ill-defined nodule is visualized.

INTERPRETED BY

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

IMAGING PERFORMED BY

Kelly Vazquez

HOSPITAL NAME

Animal Paradise
Hospital

REFERRING VET

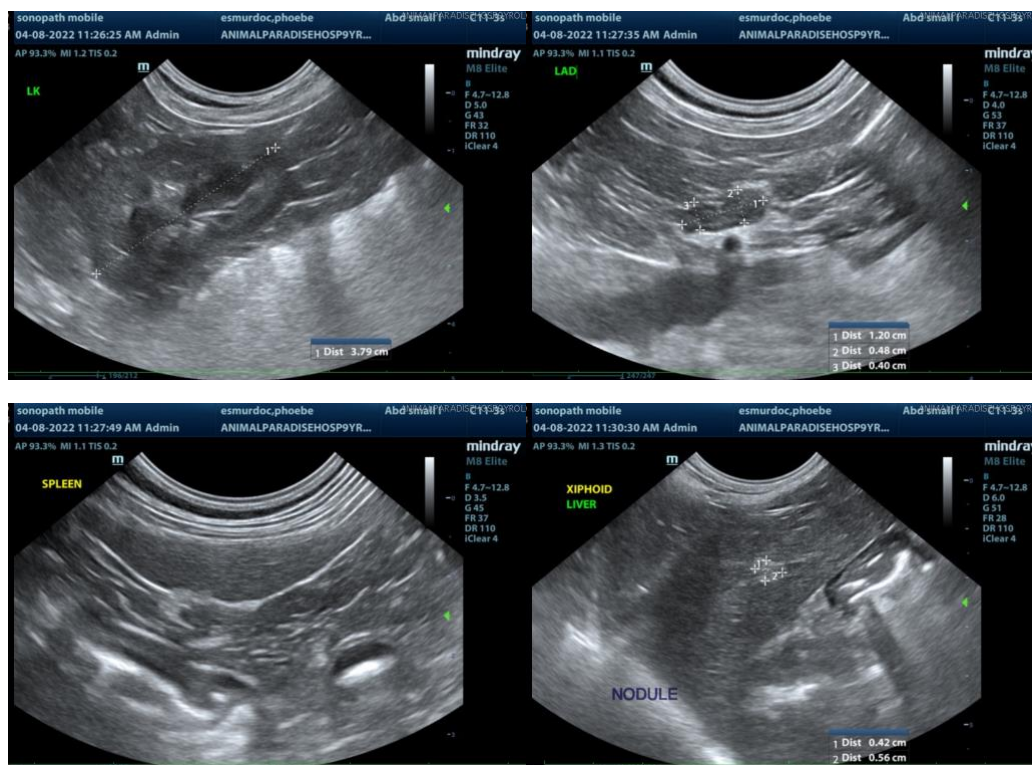
Dr. Elshafie

INVOICE

14650

DATE

4/8/22





PATIENT

Pheobe Esmurdoc

SPECIES

Canine

BREED

Chihuahua

SEX

Spayed Female

AGE

9 Years

WEIGHT

12 Pounds

INTERPRETED BY

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

**IMAGING
PERFORMED BY**

Kelly Vazquez

HOSPITAL NAME

Animal Paradise
Hospital

REFERRING VET

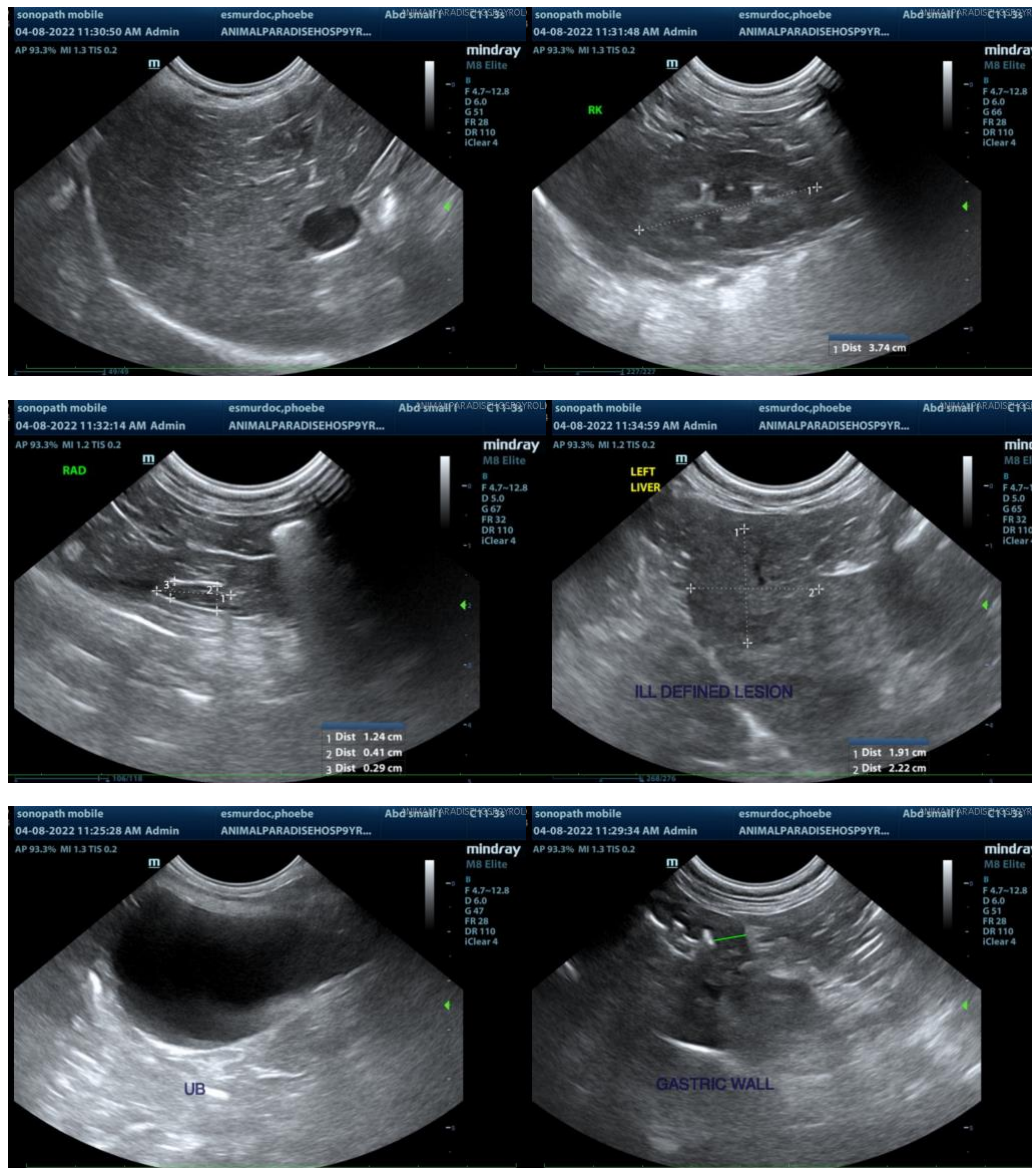
Dr. Elshafie

INVOICE

14650

DATE

4/8/22



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.

Kathleen Sennello DVM,MS, Diplomate ACVIM (Small animal Internal Medicine)
kathleen.sennello@sonopath.com