

**DATE PRESENTING CLINICAL SIGNS**

4/26/22 Patient presented 4/19 with vomiting, unsteadiness, and eye twitching. Patient had vomited multiple times, but still had an appetite. No known foreign body ingested, bowel movements are normal.

**PATIENT**

Harley Longworth

Current Medications: Gave patient injectable 2.9 mL injectable Cerenia at visit, along with 500mL LRS subcutaneous fluids. We sent home 60mg Cerenia tablets - 1 tablet QD starting 4/20 AM. Also prescribed 25mg meclizine - 1 QD.

**SPECIES**

Canine

Lab Results: Elevated liver values, ALKP also elevated.  
Radiographs: Chest radiographs showed multinodular pattern in lungs and potential liver mass on abdominal radiographs.

**BREED**

Hound X

Date of Previous IntraPet Ultrasound: No previous.  
Sedation: Not required to complete full diagnostic ultrasound.  
Stat Report: Not requested.

**ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN****SEX**

Spayed Female

**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.

**AGE**

5/5/09

The left kidney has a normal shape and size (6.13 cm) with small cortical cysts. 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.

**WEIGHT**

65.1 Pounds

The right kidney has a normal shape and size (7.36 cm) with small cortical cysts. 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.

**INTERPRETED BY**

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

**Adrenal Glands**

The left adrenal gland is normal in size measuring 0.61 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.

**IMAGING PERFORMED BY**

Stephanie Pearce  
RDMS, RVT

The right adrenal gland is large in size measuring 6.16 cm x 3.96 cm. It is observed in its normal position between the cranial aspect of the right kidney and the caudal vena cava. It is somewhat irregular in shape in that it is ovoid and large. There is no direct vascular invasion, but there is impingement on the local vasculature.

**HOSPITAL NAME**

Festival Vet Clinic

**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.

**REFERRING VET**

Dr. Cianelli

**INVOICE**

37155

**Liver**

The liver is large in size, and normal in 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 is an iso- to slightly hypoechoic, rounded mass lesion visualized towards the left of the liver measuring 6.53 cm x 3.65 cm.

The gallbladder 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***

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.

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. Jejunum wall measured 0.37 cm. Visualized peristalsis appears appropriate. There were no focal lesions consistent with obstruction or a mass effect observed.

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***

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***

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.

## **ULTRASONOGRAPHIC FINDINGS**

- Large, heterogeneous liver with iso- to mildly hypoechoic mass lesion – 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 mass lesion could represent a benign or malignant lesion.
- Large, abnormal right adrenal gland – most consistent with a right adrenal mass – Right adrenomegaly could be consistent with neoplasia (e.g., adenoma, carcinoma, pheochromocytoma), hyperplasia, inflammation, other.
- Decreased corticomedullary distinction in both kidneys with small cortical cysts – The bilateral renal findings are consistent with age-related change.

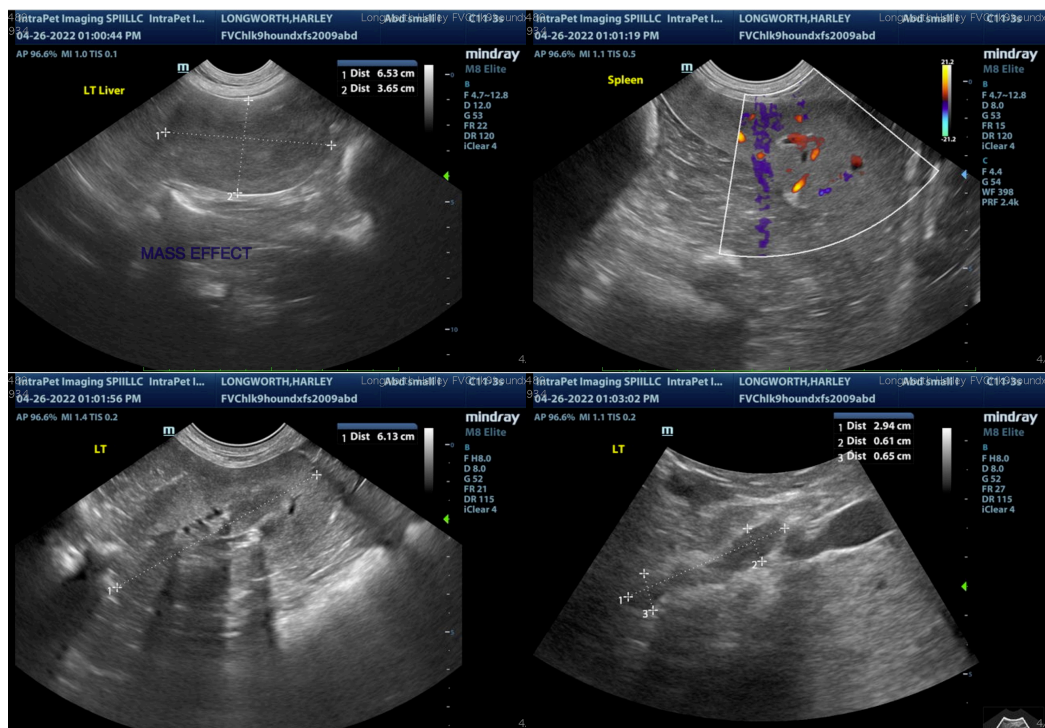
## **INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS**

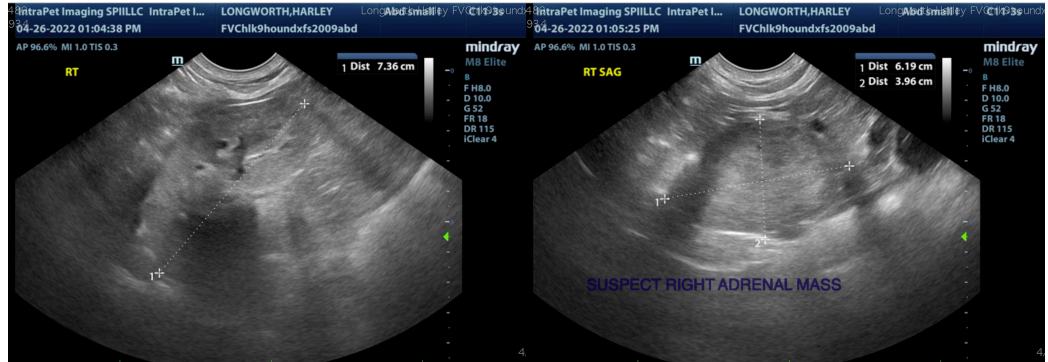
There is a small to moderate sized, solid, iso- to slightly hypoechoic mass effect on the left side of the liver. This lesion could represent a benign or cancerous lesion. A fine needle aspirate could be considered.

Additionally, there is a mass effect in the region of the right adrenal, most consistent with a right adrenal mass. These lesions can be benign or malignant and can secrete hormones or be non-secretory. These lesions could be related, or could be concurrent separate issues (this is my suspicion). Further recommendations for the right adrenal mass effect include:

- If signs of cushings are present, consider adrenal function testing. I prefer an ACTH stimulation test combined with an adrenal panel to the University of Tennessee's endocrine lab to look for atypical adrenal hormones as well as cortisol. (other testing can suffice)
- If adrenal dependent cushings is suspected and supported by adrenal function testing consider medical therapy with lysodren or trilostane and/or consider surgical removal (recommend referral to a board certified veterinary surgeon and possible pre op CT)-This can be a challenging surgery with significant risk for complication.
- Recommend blood pressure evaluation-if hypertensive consider testing catecholamine levels for a possible pheochromocytoma
- Due to the invasive nature of these masses a CT scan is recommended to evaluate for metastasis and vascular invasion.
- If no symptoms of cushings are present, consider either referral for surgery or if surgery is not an option consultation with a veterinary oncologist regarding chemotherapeutic options and continued monitoring with ultrasound (in 4-6 weeks) can be considered.
- Some aggressive adrenal tumors can grow quickly and there is risk for acute hemorrhage from vascular invasion.

An abdominal CT scan would be helpful to evaluate both the liver and the adrenal mass, and consultation with a veterinary surgeon regarding surgical options for possible removal of both of these lesions. Recommend a radiologist review of thoracic radiographs, as I suspect the nodules represent benign changes.





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.

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