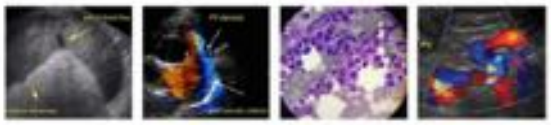
SonoPath
Clinical Sonography & Telecytology
EDUCATIONAL TELECONSULTATION SERVICES™
1-800-838-4268 info@sonopath.com SonoPath.com



IMAGING PERFORMED BY
pawsonography@gmail.com 530-786-8340

**PATIENT**

Luna Brown

**SPECIES**

Canine

**BREED**

Labrador Retr

**SEX**

Spayed Female

**AGE**

7.4.2011

**WEIGHT**

28 kg

**INTERPRETED BY**

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

**IMAGING PERFORMED BY**

Loetitia Saint-Jacques, LVT

**HOSPITAL NAME**

FourPaws AC

**REFERRING VET**

Dr Susan Murphy

**INVOICE**

13670

**DATE**

7.12.23

## PRESENTING CLINICAL SIGNS

History: Patient collapsed on 06/15/2023 - BW showed increased ALP (2,400) unstable stifle. Then on 06/23/2023 came in w/ dyspnea. Rads showed fulminating potentially fatal pulmonary infiltrates, bronchopneumonia likely. Stated antibiotics and patient improved over several days, then got worse with ascites - chest films showed continued improvement. Ascites, cytology no neoplastic cells noted - Inflammatory cells present. Working diagnosis Migrating FB, neoplasia MEDS Amoxicillin Clavulanate 625mgs BID, Enrofloxacin 136 mgs BID

Abnormal PE/Chem/CBC/UA Results: Alk Phos 2,460

## ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN

### *Urinary System*

The urinary bladder is mildly distended with anechoic urine. The bladder wall is diffusely mildly thickened, and the mucosa is mildly irregular. The trigone, ureteral papillae, and visible urethra (to a depth of 1.00 cm) appear normal with no evidence of severe mucosal irregularities, masses or cystic calculi. Findings are most consistent with bacterial cystitis or lack of urine distension. Recommend urinalysis and culture

The left kidney has a normal shape and size (6.49 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 (6.34 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 (0.87 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 (1.04 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.

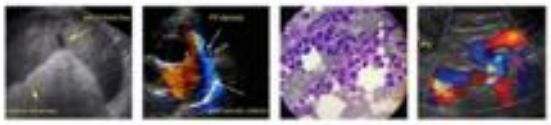
### *Spleen*

The spleen is subjectively normal in size and irregular in shape. The blood flow through the hilus and splenic parenchyma appears normal. There is a mixed echogenicity nodule arising from the spleen (measuring 1.09 x 1.27 cm) which disrupts the splenic capsule.

### *Liver*

The liver is subjectively large in size, and echogenicity with rounded margins. The parenchyma is heterogenous in echotexture with subtle, indistinct focal mottling. The vasculature appears prominent and congested. The contours of the liver are rounded and very irregular. In some areas small mass effects/nodules are disrupting these margins. Examples of hypoechoic nodules measure 0.76 and 0.73 cm. Additionally, there are ill-defined hyperechoic mass effects visualized (one measuring 4.03 cm in diameter / the other measuring 3.20 cm in diameter).

SonoPath
Clinical Sonography & Telecytology
EDUCATIONAL TELECONSULTATION SERVICES™
1-800-838-4268 info@sonopath.com SonoPath.com



IMAGING PERFORMED BY
pawsonography@gmail.com 530-786-8340

**PATIENT**

Luna Brown

**SPECIES**

Canine

**BREED**

Labrador Retr

**SEX**

Spayed Female

**AGE**

7.4.2011

**WEIGHT**

28 kg

**INTERPRETED BY**

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

**IMAGING PERFORMED BY**

Loetitia Saint-Jacques, LVT

**HOSPITAL NAME**

FourPaws AC

**REFERRING VET**

Dr Susan Murphy

**INVOICE**

13670

**DATE**

7.12.23

***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. The duodenum measured as normal (0.50 cm) and the jejunum measured as normal (0.30 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 area 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***

There is a large amount of anechoic free fluid visualized. There are occasional prominent mesenteric lymph nodes. The sublumbar lymph node is hypoechoic and large (1.50 cm). The omentum is diffusely hyperechoic.

***Other***

A brief view of the heart was evaluated revealing pleural effusion. A significant amount of pericardial effusion was not readily visualized, and no mass effects visualized associated with right auricle. Given the appearance of the heart and the findings on the abdominal ultrasound, recommended a cardiac ultrasound.

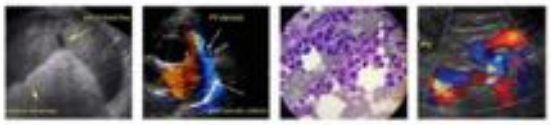
## ULTRASONOGRAPHIC FINDINGS

### Primary Findings

- Mixed echogenicity hypoechoic splenic nodule – There is a non-cavitated, hypoechoic splenic nodule visualized. Differentials include lymphoid hyperplasia, extramedullary hematopoiesis, infiltrative neoplasia, inflammation, other. Cytology or histopathology would be necessary to get a definitive diagnosis. This nodule deviates the splenic capsule, increasing the concern for an underlying neoplastic process.

- Large, heterogenous, rounded and irregular liver with dilated vasculature – 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 liver is large with dilated vasculature, which is concerning for possible congestion. But additionally, there are significant parenchymal changes, including hyper- and hypoechoic nodules (some of which deviate the hepatic margins) and could be concerning for a benign or neoplastic process.

- Free fluid visualized in the thorax and abdomen – Recommend a cardiac evaluation.





**PATIENT**

Luna Brown

**SPECIES**

Canine

**BREED**

Labrador Retr

**SEX**

Spayed Female

**AGE**

7.4.2011

**WEIGHT**

28 kg

**INTERPRETED BY**

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

**IMAGING PERFORMED BY**

Loetitia Saint-Jacques, LVT

**HOSPITAL NAME**

FourPaws AC

**REFERRING VET**

Dr Susan Murphy

**INVOICE**

13670

**DATE**

7.12.23

- Prominent sublumbar lymph node – Recommend a digital rectal exam to evaluate the anal glands.

**Secondary Findings**

- Subjectively thickened urinary bladder wall – The bladder mucosal changes could be consistent with cystitis or artifactual due to lack of adequate luminal distension. Bladder neoplasia cannot be ruled out but is considered unlikely in this patient.

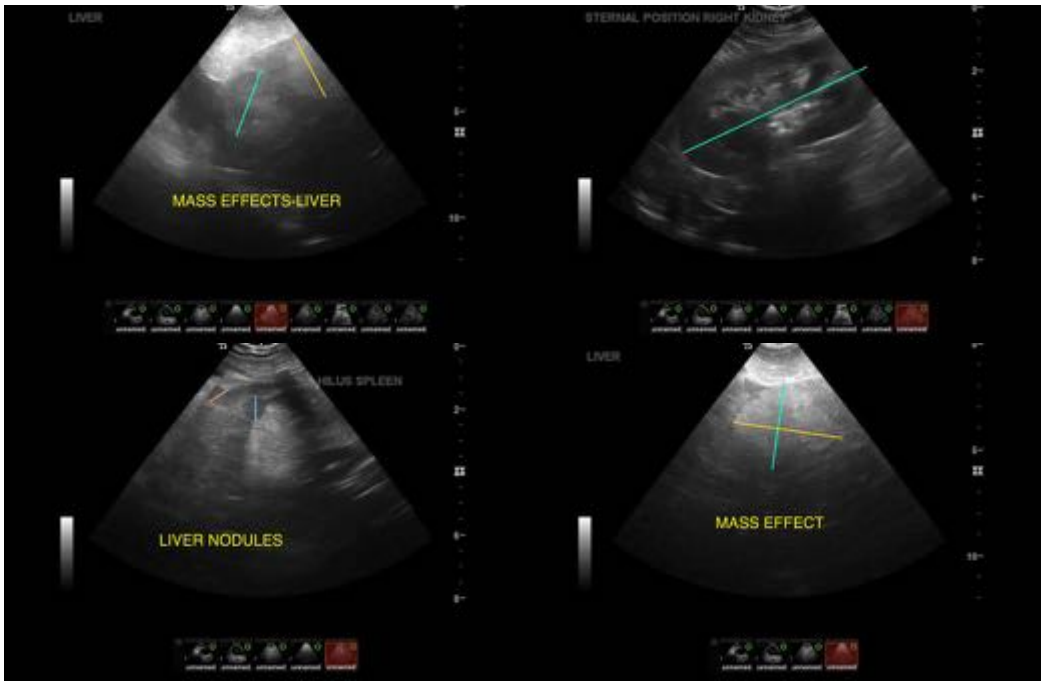
## INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

There is free fluid visualized in both the abdomen and the thorax, as well as a large liver with dilated vasculature. These changes could be concerning for underlying cardiac disease. Given the history, recommend a cardiac ultrasound.

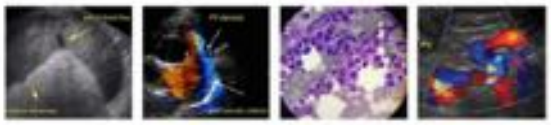
In addition to being large, the liver parenchyma is abnormal. There are numerous small nodules and larger mass lesions. These could represent a benign or neoplastic process. Recommend re-evaluation of the liver, both with bloodwork and possibly ultrasound, once the congestion has improved.

There is a hypoechoic, somewhat pedunculated nodule visualized on the spleen. This could represent a benign or a neoplasia process. Options moving forward would include continued monitoring with ultrasound or splenectomy (likely not recommended at this time).

If cardiac disease is not found to be the root of the issue in this situation, recommend a fluid analysis and cytology and a fine-needle aspirate of the liver.



SonoPath
Clinical Sonography & Telecytology
EDUCATIONAL TELECONSULTATION SERVICES™
1-800-838-4268 info@sonopath.com SonoPath.com



IMAGING PERFORMED BY
pawsonography@gmail.com 530-786-8340

**PATIENT**

Luna Brown

**SPECIES**

Canine

**BREED**

Labrador Retr

**SEX**

Spayed Female

**AGE**

7.4.2011

**WEIGHT**

28 kg

**INTERPRETED BY**

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

**IMAGING PERFORMED BY**

Loetitia Saint-Jacques, LVT

**HOSPITAL NAME**

FourPaws AC

**REFERRING VET**

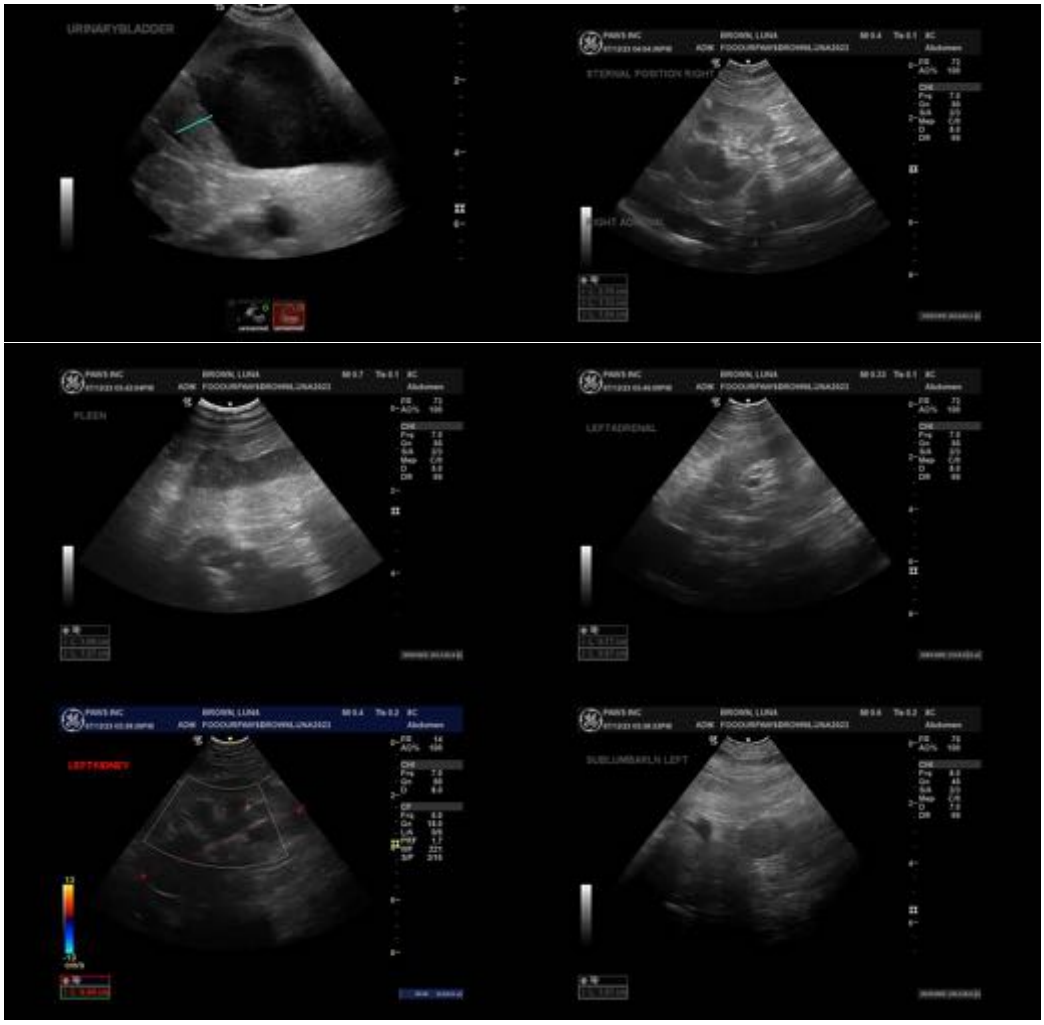
Dr Susan Murphy

**INVOICE**

13670

**DATE**

7.12.23




**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)
info@SonoPath.com