

**DATE**

1/20/22

**PRESENTING CLINICAL SIGNS**

History: Dog had history of recurrent urinary incontinence and positive culture for UTI. Recently urine culture was negative still has urinary incontinence. Blood work indicates TP and Globulin elevated. Abdominal scan needs to r/o and abdominal mass. No other clinical presentation. Survey radiographs were unremarkable.

**PATIENT**

Raleigh Llewellyn

Lab Results: Attached separately.

Date of Previous IntraPet Ultrasound: No previous IntraPet scans.

Sedation: Telazol IV.

Stat Report: Not requested.

Imaging Performed By: Stephanie Pearce RDCS, RVT.

**SPECIES**

Canine

**BREED**

German Shepherd Mix

**ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN****Urinary System**

The urinary bladder is not adequately distended, which impairs visualization somewhat. The bladder wall appears diffusely thickened and irregular with an average width of 0.57 cm. Additionally there is a focal mass effect visualized in the dependent portion of the urinary bladder, which is somewhat polypoid and hyperechoic in appearance measuring 0.93 x 1.44 cm. The area of the trigone, ureteral papilla and proximal urethra appear less affected. The findings are concerning for a bladder mass +/- cystitis.

**AGE**

8/28/12

The left kidney has a normal shape and size (6.29 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. An old infarct was visualized. There is no evidence of pyelectasia, nephroliths or hydroureter. Renal vasculature is normal.

**WEIGHT**

87.5 lbs

The right kidney has a normal shape and size (6.73 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. An old infarct was visualized. There is no evidence of pyelectasia, nephroliths 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 0.46 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.

**HOSPITAL NAME**

Glen Burnie AH

The right adrenal gland is normal in size measuring 0.45 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.

**REFERRING VET**

Dr. Shah

**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.

**INVOICE**

95438

**Liver**

The liver is subjectively normal 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. No focal nodules or cystic lesions are observed. 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.

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

### **PRIMARY FINDINGS:**

- Thickened irregular urinary bladder wall with a focal mass effect. The appearance of this mass effect is concerning for a neoplastic process. Lack of adequate urinary bladder distension impairs visualization somewhat.
- Heterogenous liver. 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. If the liver enzymes are normal this could be an age related change.

### **SECONDARY FINDINGS:**

- Mildly reduced corticomedullary distinction in both kidneys. The bilateral renal findings are consistent with age-related change.

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

The focal mass in the bladder has the characteristics most consistent with a neoplastic lesion, but polyps and inflammatory lesions can sometimes have a similar appearance. A definitive diagnosis cannot be determined by ultrasound alone.

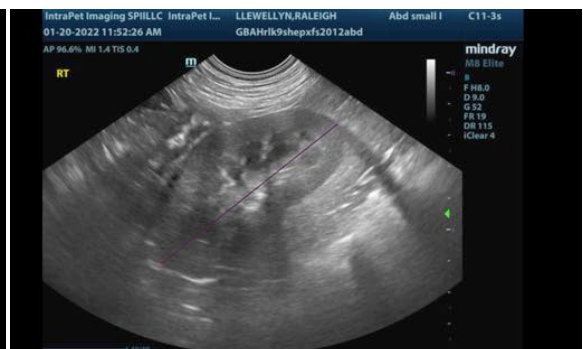
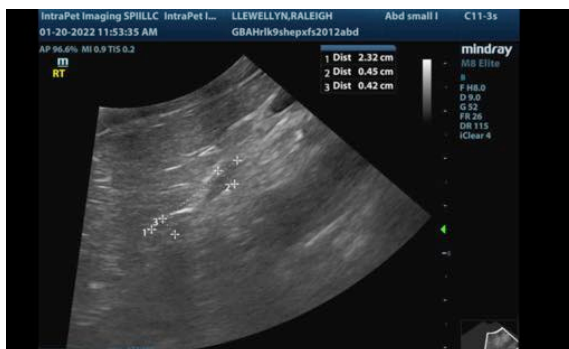
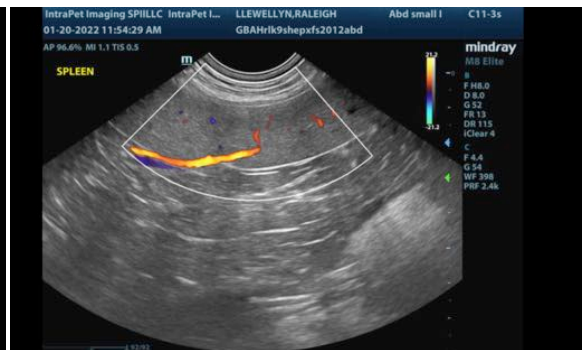
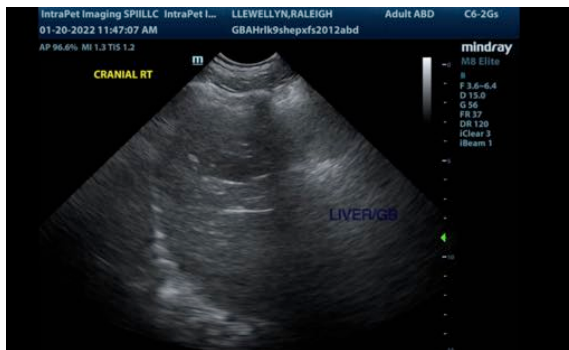
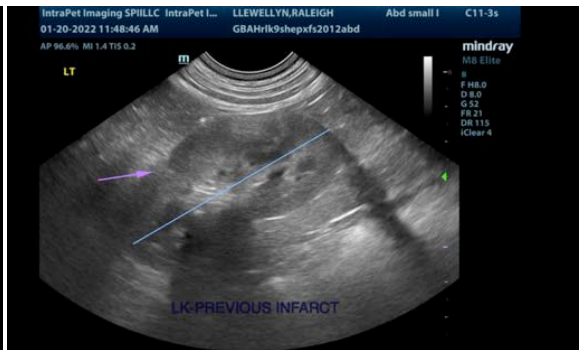
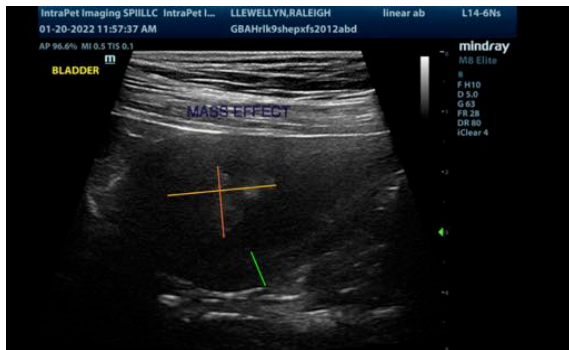
-Recommend urine evaluation for BRAF mutation seen in patients with transitional cell carcinomas. A positive test is diagnostic, a negative test is inconclusive and will need further diagnostics.

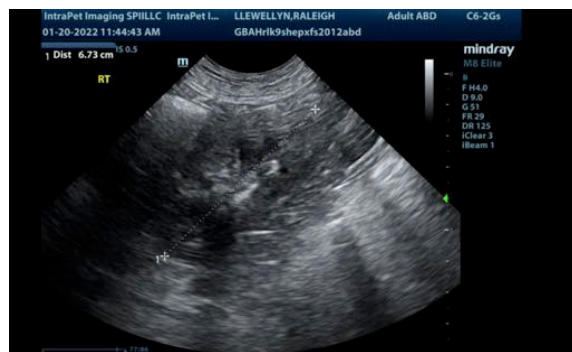
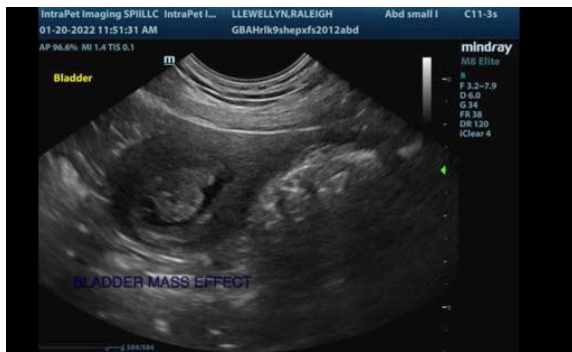
-If negative or non-diagnostic BRAF consider traumatic catheterization to obtain representative cells for cytology, or biopsy sampling via either cystoscopy (if a female) or surgery.

-Patients with bladder pathology should always have urinalysis and culture performed. Ideally cystocentesis should be avoided in patients with suspected bladder masses to try and prevent tracking of tumor cells along the needle path.

-If TCC is confirmed consider referral to/consultation with a board certified. Veterinary oncologist for recommendations regarding treatment options and prognosis.

Some pets with bladder pathology are notoriously difficult to image because they never allow their bladder to completely fill. Another excellent diagnostic tool would be to consider cystoscopy to visually evaluate the mass effect and obtain biopsies for histopathology and culture. I recommend three view thoracic radiographs.





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.

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