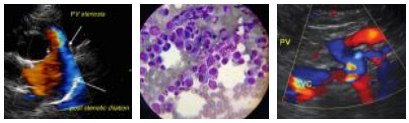
IMAGING PERFORMED BY

IntraPet.com



SonoPath
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**DATE**

1/20/23

**PATIENT**

Mowgli Comotto

**SPECIES**

Canine

**BREED**

Pug

**SEX**

Neutered Male

**AGE**

1/1/17

**WEIGHT**

21.8 Pounds

**INTERPRETED BY**

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

**HOSPITAL NAME**

Chadwell AH

**REFERRING VET**

Dr. Gold

**INVOICE**

20674

## PRESENTING CLINICAL SIGNS

History: Rectal polyp, mass on tail, dental disease, anorexia started 1/18/23.

Current Medications: Tagament 200mg 1/2 PO BID, Benadryl 25mg 1 PO BID, Clavamox 125mg 1 PO BID, Entyce 1cc QD, Cerenia 16mg QD
all meds dispensed 1/18/23.
Lab Results: SAP, ALT and TB all very elevated.
Radiographs: enlarged liver.
Date of Previous IntraPet Ultrasound: No previous.
Sedation: Not required to complete full diagnostic ultrasound.
Stat Report: Not requested.
Imaging Performed By: Andi Parkinson, BS, RDMS.

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

The visualized areas of prostate and surrounding tissue appear normal. Unfortunately, the prostate is not fully visualized likely due to its intrapelvic location. Correlate with rectal exam findings.

The left kidney has a normal shape and size (4.8 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 (4.91 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 0.53 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 0.59 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 large in size and irregular. The spleen echotexture is heterogenous and mottled. The blood flow through the hilus and splenic parenchyma appears normal. There are too numerous to count, large expansile hypoechoic nodules which deform the splenic margins. Examples of nodules measure 0.68 cm, 0.49 cm, 0.32 cm and 0.61 cm.

### *Liver*

The liver is subjectively large in size and irregular. The parenchyma is heterogenous in echotexture with subtle, indistinct focal mottling. The visible portions of the vasculature and biliary tract appear normal. There is a large irregular mixed echogenicity mass effect visualized associated with the liver, measuring 6.39 cm x 4.69 cm. Additionally, there are too numerous to count, small expansile hypoechoic to target lesion appearing nodules, throughout the liver, which deviate the hepatic margins. Examples of these measure 1.26 cm x 1.24 cm, 1.35 cm in diameter and 2.3 cm.

The gall bladder lumen is moderately distended. The wall of the gall bladder is hyperechoic and thickened, measuring 0.31 cm. There is a moderate amount of non-organized echogenic debris. 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 - 0.5 cm in wall thickness) and the jejunum measured as normal (0.34 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 prominent/large and hypoechoic as compared to the surrounding isoechoic mesentery. There is no evidence of nodules or cystic lesions. There is no evidence of regional mesenteric inflammation or fluid.

### *Free Abdomen*

There is no free fluid. There is mesenteric lymphadenopathy visualized with a large hypoechoic mesenteric lymph node measuring 0.61 cm in the cranial abdomen. The omentum is generally hyperechoic, particularly around the liver.

## ULTRASONOGRAPHIC FINDINGS

- Irregular nodular spleen with too numerous to count hypoechoic expansile nodules. There are several, non-cavitated, hypoechoic splenic nodules visualized. Differentials include lymphoid hyperplasia, extramedullary hematopoiesis, infiltrative neoplasia, inflammation, other. Cytology or histopathology would be necessary to get a definitive diagnosis.

- Large irregular heterogenous liver with too numerous to count hypoechoic and target lesion nodules, as well as a large mixed echogenicity mass effect. 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 appearance of the smaller hypoechoic and target lesions are concerning for possible metastatic disease, although other differentials are possible.

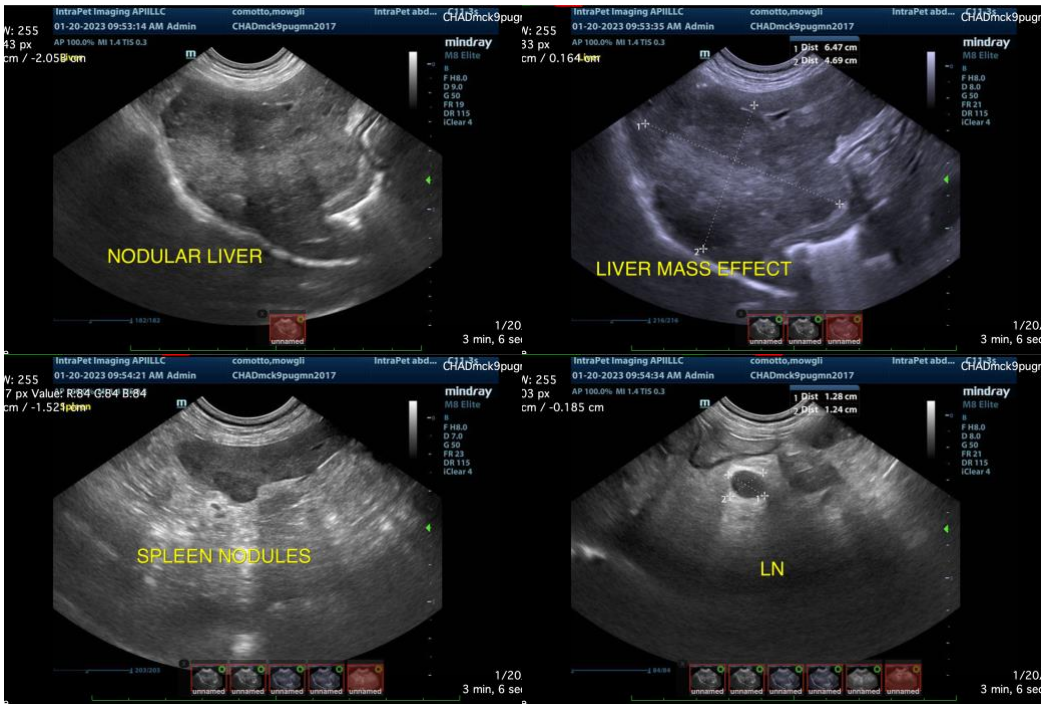
- Mildly thickened gallbladder wall. The gallbladder is not overly distended. This could be secondary to edema, cholecystitis, etc.

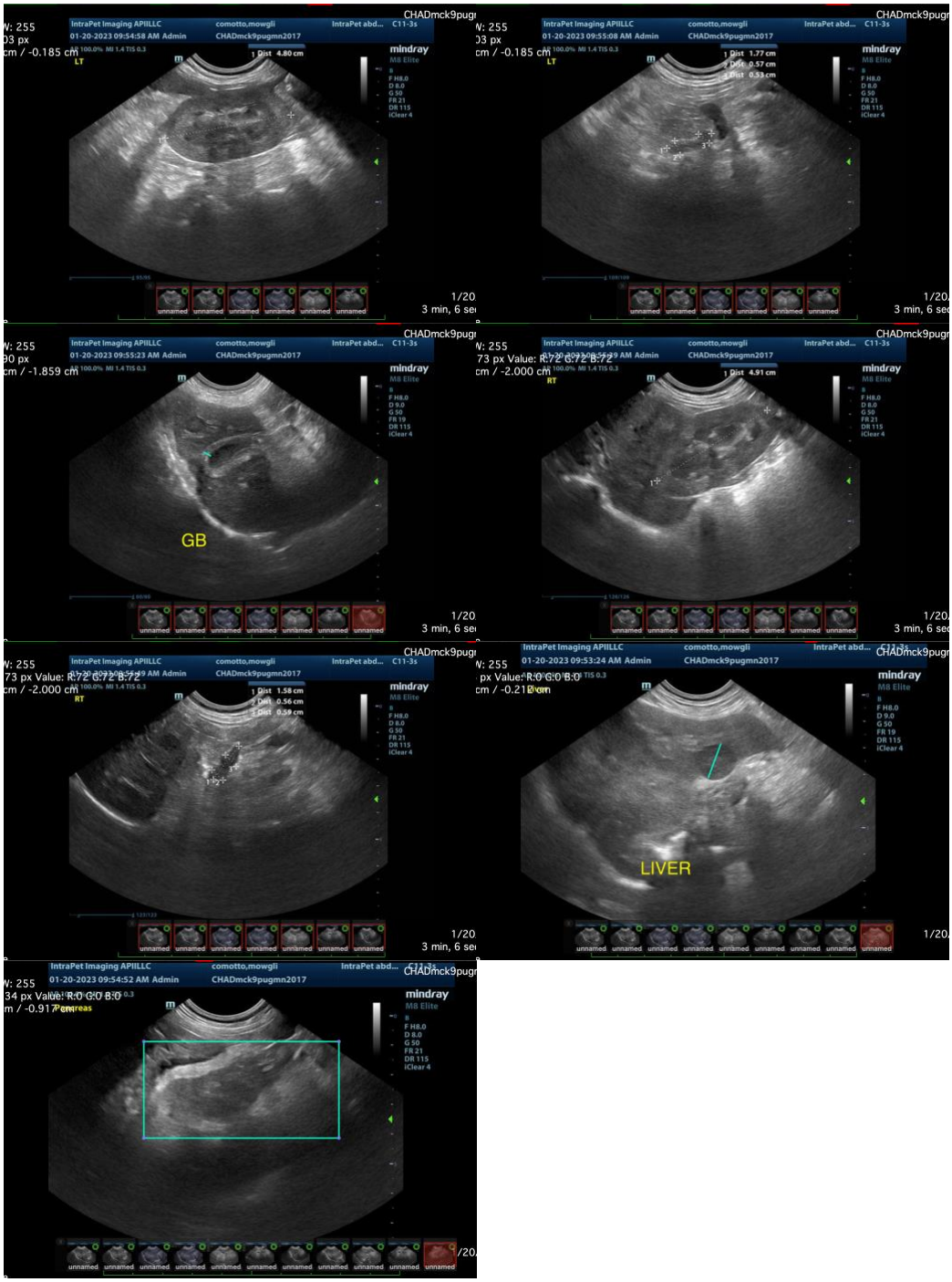
- Large hypoechoic lymph nodes in the cranial abdomen. The moderate mesenteric lymphadenopathy could be concerning for a neoplastic process, although you can see significant lymphadenopathy in some cases of autoimmune/inflammatory disease, infectious disease(tick born disease-such as bartonella, fungal infections, FIP (cats)) etc.  A fine needle aspirate with cytology is recommended for further evaluation.

## INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

The liver and spleen are both diffusely nodular with large expansile hypo- and target like lesion nodules. Additionally, there is a large mixed echogenicity, hepatic mass lesion. The appearance of these lesions are highly concerning for a metastatic process (carcinoma, round cell neoplasia, etc.), but this is not definitive and fine needle aspirate of both a splenic and hepatic lesion is recommended.  If metastatic disease seems unlikely based on these results, you could consider evaluation for surgical removal of the large hepatic mass lesion. A contrast CT scan would be recommended prior to considering this.

Consider three view thoracic radiographs to rule out concurrent thoracic disease/involvement.






**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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