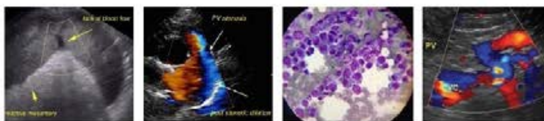




**PATIENT**

Cooper Voogt

**SPECIES**

Canine

**BREED**

Boston Terrier

**SEX**

Neutered Male

**AGE**

4.5 Years

**WEIGHT**

10.8 kg

**INTERPRETED BY**

R. McKenzie Daniel, DVM, DABVP (Canine and Feline)

**IMAGING PERFORMED BY**

Crystal Hill

**HOSPITAL NAME**

Hartzel AH

**REFERRING VET**

Dr. Hobbs

**INVOICE**

46888

**DATE**

4/24/23

## PRESENTING CLINICAL SIGNS

Reduced appetite, not himself past couple of months, liver enzyme elevations and now April 24 - new Bilirubin elevation, jaundiced, painful abdomen. No meds currently.

Abnormal PE/Chem/CBC/UA Results: 4/18/23 bloodwork CBC WNL other than M1 low Retic/hemoglobin, high ALT 312, AST high 210, ALP high 826, Lipase high 599, Creatine kinase high 350, Cortisol normal. April 23, 23 HCT low, HBG low, MCH low, Retics high, Retic/Hgb low, WBCs high 40.9(5.05-16.76), neuts high, PLT low, PCT low.

## ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN

### *Urinary System*

The urinary bladder, trigone, cystourethral junction, and visible pelvic urethra to a depth of – cm exhibited normal thickness and tone. Anechoic urine was present in the lumen with no uroliths or sediment. The ureteral papillae were normal. The ureters were not visible which is normal. No evidence of inflammatory or neoplastic changes were noted.

No overt pathology in the area of the residual prostate.

Normal size and margination were present in the kidneys. A normal 1:3 cortex / medulla ratio and normal corticomedullary definition were maintained. The echogenicity of the cortex was similar to or slightly less than normal liver parenchyma while the medulla echogenicity was hypoechoic to the cortex with no evidence of pelvic dilation. The right kidney measured 5.3 cm. The left kidney measured 5.8 cm.

### *Adrenal Glands*

The adrenal glands were uniform in size and contour with a uniformly hypoechoic parenchyma. The left adrenal gland measured 2.1 cm long x 0.56 cm at the caudal pole. The right adrenal gland was indistinctly visualized, given hepatomegaly and increased periadrenal artifact. No overt pathology. The right adrenal gland subjectively measured 1.8 cm long x 0.71 cm at the caudal pole.

### *Spleen*

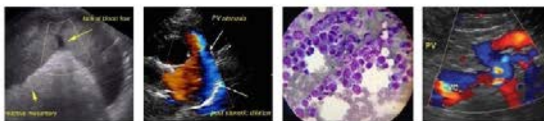
The spleen exhibited a finely textured and homogenous parenchyma which was hyperechoic to the liver and renal cortical parenchyma. The capsule was smooth and regular without apparent expansion. The splenic vasculature at the hilus was normal in volume with no evidence of congestion or thrombosis. Acute to chronic inflammatory, neoplastic, or benign parenchyma changes were not noted.

### *Liver*

The liver was markedly enlarged with the caudal to caudoventral liver extending past the level of the gastric axis into the mid to cranial abdomen. Generalized asymmetrical hepatic capsule contour noted with variable lobar swelling. Generalized non-homogeneous hepatic parenchyma noted with diffuse variably sized to expansive non-homogeneous to mixed echogenic intraparenchymal hepatic nodules to mass. Example of nodule measured 3.0 cm in diameter. Example of mass measured 6.0-6.5 cm in diameter. Some of the nodules and masses distorted the hepatic capsule. The hepatic and portal vasculature were normal in appearance without signs of congestion. The gallbladder was non-distended in size with thin walls and primarily anechoic luminal content. The cystic and common bile ducts were normal.

### *Gastrointestinal*

The stomach exhibited mildly thickened wall layering with potential for decreased gastric mural echogenicity and indiscernible wall layer detail. Stomach wall measured 0.77 cm in diameter. The stomach was primarily empty with mild luminal gas.





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The small intestine presented intact wall layering with 1:3 muscularis/mucosa ratio. The lumen of the small intestine was empty with no signs of ileus, obstruction or foreign material.

Normal visible colon wall layers were present with apparent formed feces in lumen.

### *Pancreas*

The pancreas was not definitively visualized owing to hepatomegaly and increased peripancreatic omental artifact.

### *Free Abdomen*

Moderate volume echogenic peritoneal effusion noted.

Multiple mild to variably enlarged, hypoechoic perihepatic to mesenteric lymph nodes were present. The lymph nodes exhibited symmetrical to rounded margination with abnormal width: length ratio (>0.5). The enlarged lymph nodes were bordered by echogenic to reactive mesentery. Example of lymph node measured 2.5 cm x 1.8 cm.

No overt medial iliac or sublumbar lymphadenopathy.

Generalized non-homogeneous hyperechoic omentum noted.

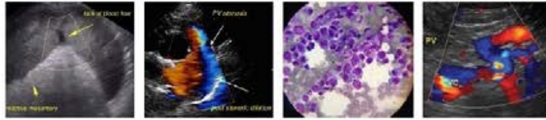
## ULTRASONOGRAPHIC FINDINGS

- Marked variable hepatomegaly with diffuse intraparenchymal variably sized nodules/masses.
- Sonographically unremarkable non-distended gall bladder and common bile duct – no evidence of post-hepatic obstruction.
- Hypoechoic swollen to non-homogeneous perihepatic/mesenteric lymphadenopathy.
- Moderate volume echogenic peritoneal effusion with generalized non-homogeneous hyperechoic omentum.
- Thickened empty stomach, sonographically unremarkable small bowel.

## INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

Although sampling is required for further clarification, significant hepatic pathology is present, which is sonographically suggestive of infiltrative neoplastic criteria. Concurrent perihepatic to mesenteric lymphatic involvement is suspected with potential for carcinomatosis, lymphomatosis, or similar. Non-specific peritonitis or peritoneal effusion secondary to portal hypertension, given degree of hepatic parenchymal pathology. Although primary or concurrent gastritis is possible, the potential for early gastric mural involvement cannot be definitively excluded.

If normal clotting status, which would be considered essential, screening hepatic FNA cytology as well as effusion analysis, cytology +/- culture and sensitivity (if clinically indicated) is recommended with potential for oncology consult. However, a suspected unfavorable prognosis is likely indicated.





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1 Dist 2.09 cm
2 Dist 0.56 cm
3 Dist 0.40 cm
LADR

1 Dist 5.79 cm
LKID

Effusion
SI
MID

Thickened stom
LLIV

Caudate liver
RK
R

Area of CBD
R

Liver mass
R

GB
Liver nodules
MID

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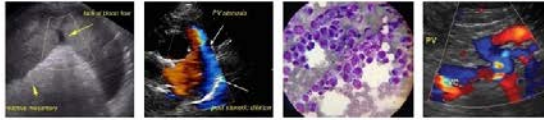

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289-808-2608 info@thefocalzone.com

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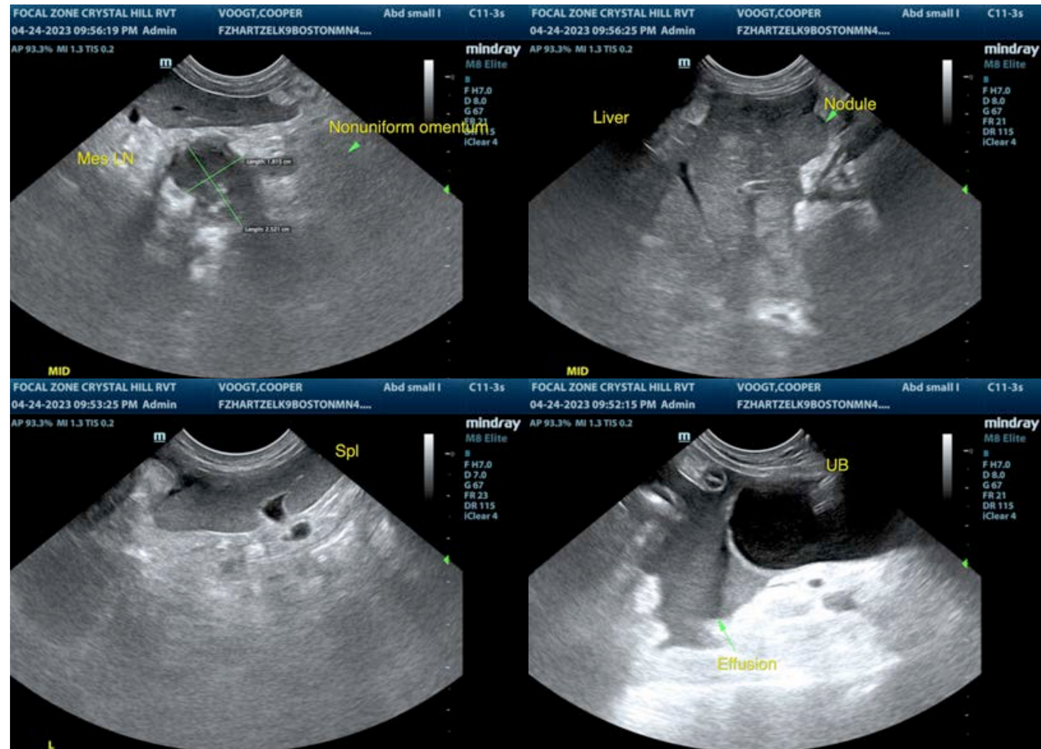


**The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.**

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.

**R. McKenzie Daniel, DVM, DABVP (Canine / Feline Practice)**

**info@SonoPath.com**