

IMAGING PERFORMED BY

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Clinical Sonography & Telecytology

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**DATE PRESENTING CLINICAL SIGNS**

2/17/23 Unresolved hepatopathy.

**PATIENT**

Nino Montgomery

Current Medications: Denamarin.  
Lab Results: ALT 257 (10-125).  
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.

**SPECIES**

Canine

**ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN**

**BREED**

Pit Bull

**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.

**SEX**

Intact Male

The prostate is large, hyperechoic, and heterogeneous. The solid portion of the prostate measures approximately 2.56 cm x 5.15 cm. There are at least two very large cystic structures arising from the prostatic parenchyma, one on the right measures 4.43 cm in diameter, one on the left measures 2.3 cm x 1.44 cm. The prostate in its entirety with the cystic lesions measures approximately 8.0 cm x 3.04 cm. The region of the prostatic urethra appears relatively normal with no mass effects or calculi visualized.

**AGE**

7/17/15

**WEIGHT**

33.84 kg

The left kidney has a normal shape and size (7.25 cm). Overall echogenicity is normal with adequate corticomedullary distinction and a typical 1:3 cortex:medulla ratio. There is no evidence of focal 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)

The right kidney has a normal shape and size (7.7 cm). Overall echogenicity is normal with adequate corticomedullary distinction and a typical 1:3 cortex:medulla ratio. There is no evidence of focal perinephric inflammation or effusion. There is no evidence of pyelectasia, nephroliths, infarcts or hydroureter. Renal vasculature is normal.

**HOSPITAL NAME**

Banfield Towson

**Adrenal Glands**

The left adrenal gland is normal in size measuring 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.

**REFERRING VET**

Dr. Washington

The right adrenal gland is normal in size measuring 0.89 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.

**INVOICE**

45363

**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.

**Liver**

The liver is subjectively normal in size, and echogenicity with smooth peripheral margins. The parenchyma is mildly 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 gall bladder is not thickened and has a smooth mucosal surface. Luminal contents are mild and primarily anechoic. The cystic and common bile ducts are normal/not visible.

### ***Gastrointestinal***

The stomach contains a large amount of shadowing ingesta. 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. Evaluation of the cranial abdomen and portions of the liver aren't possible due to interference from the ingesta in the stomach.

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.

### ***Other***

Both the left and right testicles are visualized and appear within normal limits.

## **ULTRASONOGRAPHIC FINDINGS**

- Large, hyperechoic, heterogeneous prostate with very large parenchymal cystic structures – Findings are most consistent with BPH +/- prostatitis and large prostatic cysts, although abscesses cannot be ruled out.
- Heterogeneous 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.
- Large shadowing material within the gastric lumen – Correlate with the feeding history and abdominal radiographs. If the patient was adequately fasted consider such differentials as delayed gastric emptying, a partial outflow tract obstruction (none seen) or ingested foreign material. The shadowing material hinders full evaluation of the cranial abdomen.

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

No focal lesions are visualized in the liver to explain the liver elevations present. Consider the following for

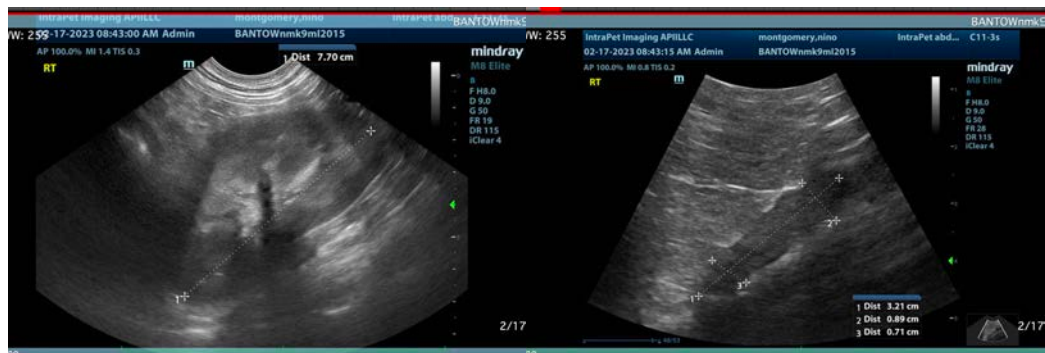
further evaluation.

The ultrasonographic changes in the liver were relatively mild. Unfortunately, the sonographic changes do not always reflect the severity or cause of the hepatopathy. The scan today supports a primary hepatopathy as no severe biliary changes were observed.

- Consider close evaluation of history for possible toxic changes examine medications, diet, dietary indiscretion etc...
- Consider PCR on urine/serum for leptospirosis (if not on antibiotics)/serology if recent antibiotic history
- If not already done, consider pre and post prandial bile acids to evaluate liver function
- Consider Fine needle aspirate if round cell neoplasia is on your differential list (25 g needle, normal coags)
- If no response to supportive care (Denamarin, fluids, antibiotics, +/- ursodiol etc.) Consider liver biopsy with samples obtained for histopathology, culture, and copper levels.

Additionally, the prostate is large and hyperechoic with two very large cystic structures. These could represent cysts, abscess, etc., and although an underlying neoplastic process is less likely, this is possible as well. Ideally, consider percutaneous cyst drainage with evaluation of the fluid for infection. If infection is present, you could consider instilling Baytril into these lesions. This combined with neutering would have a good chance at resolution of this issue, although continued monitoring post-neutering would be warranted for complete resolution. Without treatment, these lesions will likely progress, and infection is possible. Additionally, recommend urinalysis and culture and treatment for prostatitis if infection is present.

It is possible that some of the liver enzyme elevations are reactive secondary to the prostatic pathology, but a primary hepatopathy must be considered.







**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.

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