



PATIENT

Rocky Lewis

SPECIES

Canine

BREED

Yorkie X

SEX

Male

AGE

10 Years

WEIGHT

7.26 kgs

INTERPRETED BY

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

IMAGING PERFORMED BY

Dr. Van Nieuwal

HOSPITAL NAME

Animal Emergency
Hospital Volusia

REFERRING VET

Dr. Van Nieuwal

INVOICE

37277

DATE

4/29/22

PRESENTING CLINICAL SIGNS

p presented on sunday for seizures and collapsing diagnosed with liver disease and inner ear infection calcium low on bloodwork, high phosphorus, and abnormal liver values presented to us again last night for more seizures liver values and calcium worse on repeat bloodwork worried about hypoparathyroid Abnormal PE/Chem/CBC/UA Results: bloodwork and radiograph report attached

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 2cm) appear normal with no evidence of wall thickening, mucosal irregularities, masses or cystic calculi.

The prostate is large and hyperechoic with smooth external margins, measuring 1.8 cm in height in the sagittal view. The parenchyma is heterogenous but no discrete focal lesions are present. The prostatic urethra appears normal with no evidence of irregularity, invasion, mass effect or calculi.

The left kidney has a normal shape and size (4.1 cm) with pinpoint non-obstructive nephroliths. 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 hydronephrosis. Renal vasculature is normal.

The right kidney has a normal shape and size (4.3 cm) with pinpoint non-obstructive nephroliths. 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 hydronephrosis. Renal vasculature is normal.

Adrenal Glands

The left adrenal gland is normal in size measuring 0.55 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 region of the right adrenal (between right cranial kidney and vena cava) is unremarkable, but the adrenal is not distinctly visualized. No evidence of a mass effect.

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. There is a very small, hypoechoic nodule visualized measuring 0.33 cm within the parenchyma.

Liver

The liver is large in size, and normal in echogenicity with smooth peripheral margins. The parenchyma is severely 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 primarily anechoic. The cystic and common bile ducts are normal/not visible.



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Gastrointestinal

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The stomach is moderately dilated with fluid and irregular shadowing material most consistent with normal ingesta and gas. 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 layering is adequate and there is no impression of reduced peristaltic activity. No masses or focal lesions were observed.

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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.)

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Visualized peristalsis appears appropriate. There were no focal lesions consistent with obstruction or a mass effect observed.

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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.

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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.

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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.

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PRIMARY FINDINGS

- Large, hyperechoic prostate – Prostatic changes are most consistent with benign prostatic hyperplasia. Other differentials include bacterial prostatitis and prostatic neoplasia. However, given the lack of lower urinary tract symptoms, these differentials are considered less likely in this patient.
- Small hypoechoic nodule within the spleen – 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.
- Large, 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.
- Moderate amount of ingesta within the gastric lumen – Correlate with feeding history. If the patient was adequately fasted, consider such differentials as delayed gastric emptying or less likely a partial outflow tract obstruction (none observed)

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SECONDARY FINDINGS

- Prominent area visualized in the bowel – most consistent with a normal ileocecal junction, although this cannot be definitively confirmed. Recommend monitoring.

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INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

Today's scan was relatively normal for a geriatric pet. The prostate is large and hyperechoic. This is to be expected in an intact male dog and is most consistent with benign prostatic hypertrophy +/- prostatitis. Consider urinalysis and culture.

There is a very small, hypoechoic lesion in the spleen, I suspect it is too small to aspirate. Recommend continued monitoring.

The liver is large and heterogeneous. This correlate with liver enzyme elevation noted. Consider a liver function test and fine needle aspirate of the liver. If signs of Cushing's are present (or were present prior to the hypocalcemia), then you could consider adrenal function testing at a later date.

There is a somewhat irregular appearing area of small intestine, which has the appearance of the ileocecal junction, but I could not definitively confirm this. If there is continued concern for a mass effect, consider reevaluation of this area at a later date.

A severe hypocalcemia is reported in the history. An obvious cause for this is not observed on today's scan. Consider measuring PTH levels, as I agree that hypoparathyroidism would be the most likely differential. Below is a list of additional differentials to consider:

Hypocalcemia differentials:

Common:

Hypoparathyroidism

Pancreatitis

Renal failure

Renal insufficiency, chronic kidney disease

Laboratory error, EDTA (Artifactual)

Malabsorption-particularly protein losing enteropathies

Toxicities: Blood products, Citrate toxicity, Ethylene glycol, Phosphate enema usage

Nutritional: Dietary calcium low, Malnutrition

Eclampsia

Hypomagnesemia

Muscle trauma, massive

Sepsis

Tumor lysis syndrome

Vitamin D deficiency



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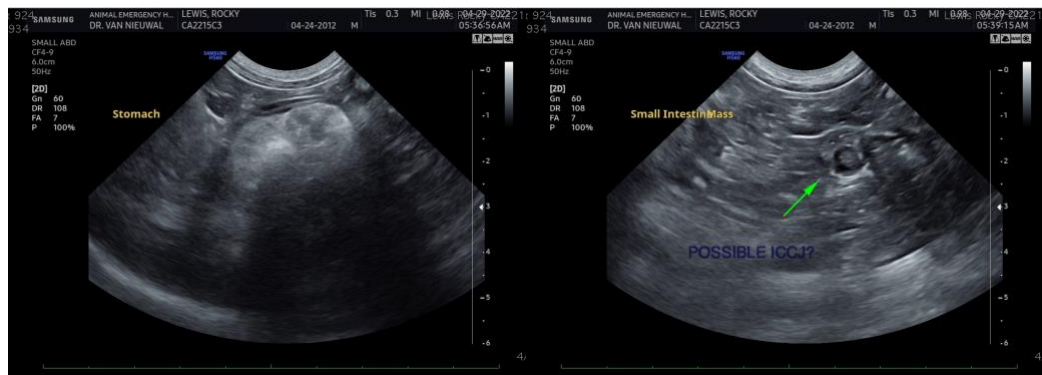
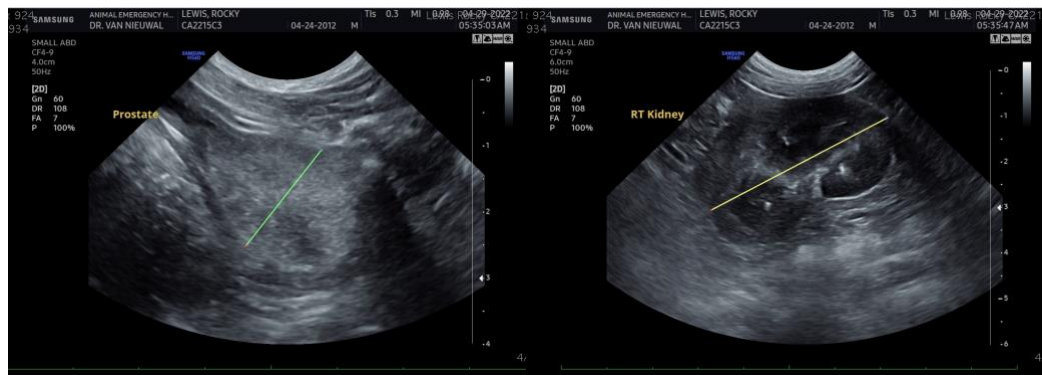
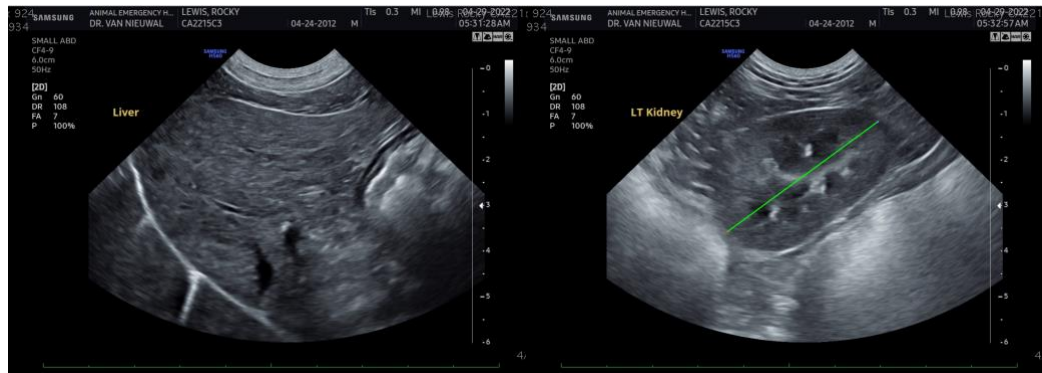
Dr. Van Nieuwal

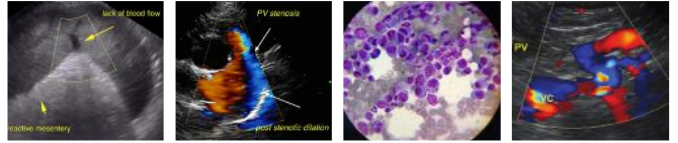
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The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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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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