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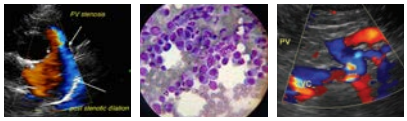

SonoPath

Clinical Sonography & Telecytology

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DATE

1/20/22

PATIENT

Paul Kim

SPECIES

Canine

BREED

Chihuahua

SEX

Intact Male

AGE

2/15/05

WEIGHT

7.6 Pounds

INTERPRETED BY

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

IMAGING PERFORMED BY

Rachel Brilhart RDMS

HOSPITAL NAME

Bayside Animal Medical Center

REFERRING VET

Dr. Buchanan

INVOICE

34961

PRESENTING CLINICAL SIGNS

History: Hx of azotemia, elevated Liver enzymes, anorexia, heart murmur. Pt losing weight. Hypoalbuminemia.

Current Medications: Enrofloxacin.
Lab Results: Attached separately within request.
Date of Previous IntraPet Ultrasound: No previous IntraPet scans.
Sedation: Declined, not required to complete full diagnostic ultrasound.
Stat Report: Not requested.

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 in size (1.83 cm) but has a regular shape with smooth external margins. 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 (3.95 cm) with pyelectasia at 0.3 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. There is no evidence of nephroliths, infarcts or hydroureter. Renal vasculature is normal.

The right kidney has a normal shape and size (3.24 cm) with pyelectasia at 0.18 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. There is no evidence of nephroliths, infarcts or hydroureter. Renal vasculature is normal.

Adrenal Glands

The left adrenal gland is normal in size measuring 0.58 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 0.57 cm at the caudal pole. It is observed in its normal position between the cranial aspect of the right 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 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 large in size, and normal in 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 solitary well-defined nodules or masses are visualized, but there is the impression of diffuse subtle hypoechoic nodules throughout the parenchyma.

The gall bladder lumen is moderately distended. The wall of the gall bladder is not thickened and has a smooth mucosal surface. There is a mild amount of non-organized echogenic debris. The cystic and common bile ducts are normal/not visible.

Gastrointestinal

The stomach is dilated with a large amount of 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.

The visualized areas of duodenum, jejunum and ileum have a uniform diameter with minimal fluid distension. Wall appears subjectively, mildly increased. Bowel loops follow a typical curvilinear path with distinct wall layering. Duodenum wall measured 0.34 cm. Jejunum wall measured 0.23 cm. Mucosal speckling is visualized. 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 testicles are visualized and appear within normal limits.

PRIMARY FINDINGS

- Subjectively thickened small intestine with mucosal speckling – The mild small intestinal wall changes may be a normal variant in this patient or could be consistent with an inflammatory process (e.g., inflammatory bowel disease). Bright mucosal speckling has been proposed to represent dilated lacteals or focal accumulation of mucus, cellular debris etc.. in the mucosal crypts of the small intestine.

- 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.

- Large, heterogeneous 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.

SECONDARY FINDINGS

- Decreased corticomedullary distinction in both kidneys with mild pyelectasia – The bilateral renal findings are consistent with age-related change. Pyelectasia of the left/right kidney could be consistent with pyelonephritis, chronic renal disease, secondary to PU/PD or fluid therapy (if applicable), other.

- Large gastric distention with ingesta – correlate with feeding history. If the patient was adequately fasted, consider such differentials as delayed gastric emptying or a partial outflow tract obstruction (none observed).

- Moderate gallbladder sludge – The significance of the aggregated gallbladder sludge is unclear. This could represent an early mucocele, cholestasis, or may be secondary to fasting.

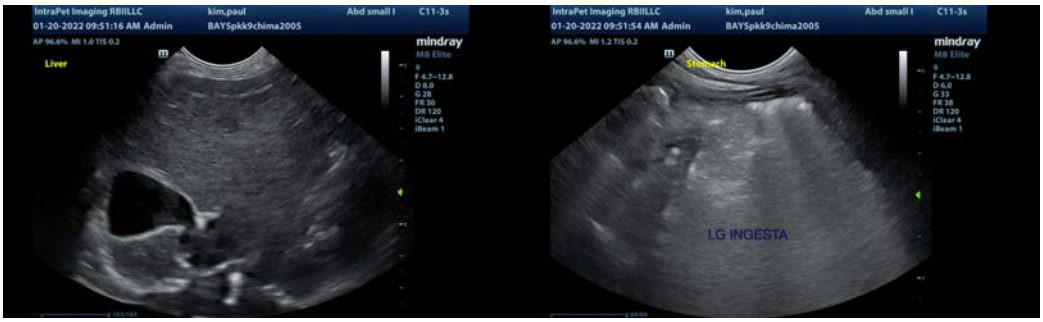
INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

The changes in the small intestine are suggestive of intestinal disease. This combined with the low albumin levels reported are suspicious for protein losing enteropathy. The most common causes for this would be severe IBD, lymphangiectasia, or intestinal neoplasia. A biopsy is necessary to differentiate. Additionally, the liver appears abnormal, and there is a history of elevated liver values. Consider a liver function test and a urine protein/creatinine ratio with urinalysis and culture to further evaluate for protein loss from the kidneys or liver. Consider these options for evaluation of the GI changes:

- Consider a GI panel to Texas A&M for a qualitative PLI, TLI, cobalamin and folate to further evaluate for pancreatic and small intestinal disease.
- Consider a low-fat bland diet. Alternately, you could consider a novel protein or hydrolyzed protein diet (low-fat as well).
- If possible, endoscopic GI biopsies would be ideal.
- Recommend 3-view thoracic radiographs to evaluate for pleural effusion.

No focal lesions were visualized in the liver. Liver function test should be helpful in trying to determine how significant this is. If there is concern for a more involved liver disease, consider fine needle aspirate, testing for Leptospirosis, adrenal function testing if appropriate, etc.

Ad discussed above, recommend urinalysis, urine culture, and blood pressure evaluation to further evaluate the renal changes described.




IntraPet Imaging RBIILLC
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Abd small I
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Spleen


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Bladder


IntraPet Imaging RBIILLC
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Abd small I
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Bladder
P
1 Dist 1.83 cm
PROSTATE


IntraPet Imaging RBIILLC
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Abd small I
C11-3s
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Lt Kidney
1 Dist 3.95 cm
2 Dist 0.35 cm


IntraPet Imaging RBIILLC
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Abd small I
C11-3s
01-20-2022 09:53:50 AM Admin
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mindray
Lt ADR
1 Dist 1.45 cm
2 Dist 0.58 cm
3 Dist 0.48 cm


IntraPet Imaging RBIILLC
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Abd small I
C11-3s
01-20-2022 09:57:04 AM Admin
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mindray
RT
1 Dist 3.24 cm


IntraPet Imaging RBIILLC
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Abd small I
C11-3s
01-20-2022 09:56:58 AM Admin
BAYSpkk9chima2005
mindray
RTADR
1 Dist 1.73 cm
2 Dist 0.57 cm
3 Dist 0.50 cm


IntraPet Imaging RBIILLC
kim.paul
linear ab
L14-6Ns
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SI- PROMINENT WITH SPECKLED MUCOSA


IntraPet Imaging RBIILLC
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Abd small I
C11-3s
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mindray
RT
LIVER/GB

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.

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