



PATIENT

Bella Kariotis

SPECIES

Canine

BREED

Morkie

SEX

Spayed Female

AGE

12 Years

WEIGHT

2.9 Pounds

INTERPRETED BY

Beth Johnson, DVM
DACVIM

IMAGING PERFORMED BY

Dr. Lynette Reyes

HOSPITAL NAME

Chain of Lakes Vet

REFERRING VET

Dr. Lynette Reyes

INVOICE

39708

DATE

7/21/22

PRESENTING CLINICAL SIGNS

History of hypoalbuminemia and diarrhea. Pet is also losing weight and liver enzymes are elevated. Owner is very concern because after starting Denamarin, Bella is not eating. They tried Entyce yesterday and no success. She is lip smacking during PE. No heart murmurs. Losing weight Currently taking Cerenia 1/4 po SID Amoxi/clav 0.6 ml po BID Metronidazole 20 mg BID Prednisone to BID (1 mg) Abnormal PE/Chem/CBC/UA Results: WBC: 22.2 RBC: 4.5 HCT: 35 Neut: 15984 Mono: 2886 T4: < 0.5 UA: SG: 1.030 UPC: 2.5

ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN

Urinary System

Urinary bladder is only mildly distended (empty). Visible contents are anechoic. Urinary bladder wall is unable to be fully assessed for pathology without further distension. No visible masses or cystoliths are observed. The trigone and visible pelvic urethra are normal thickness with a smooth mucosal surface. If there are urinary signs and/or concern for urinary bladder pathology, reassessment after complete filling is recommended.

Kidneys are overall normal in size and shape with smooth peripheral margination. A normal 1:3 cortex to medulla ratio is maintained. The medulla and cortices are uniform in texture with some mild increased cortical echogenicity and mild loss of corticomedullary distinction, expected in this age patient. There is no evidence of pyelectasia, mineral or infarcts observed. The left kidney measured 2.5 cm. The right kidney measured 3.5 cm.

Adrenal Glands

The right adrenal gland is enlarged (1.2 cm thick) with mild heterogenous parenchymal changes. Swollen capsular expansion is noted without evident capsular escape or vascular invasion.

The left adrenal gland is normal in size (0.51 cm at the cranial pole and 0.49 cm at the caudal pole), shape and contour. Corticomedullary structure is unremarkable. Visible surrounding vasculature appears normal.

Spleen

Spleen is subjectively large in size with a mildly swollen but smooth capsule. Parenchyma is normal and homogenous in echogenicity and echotexture. No focal nodules or masses are observed. Splenic vasculature appears normal.

Liver

Liver is subjectively enlarged with mildly irregular margins. Parenchyma is mottled by multifocal discrete hypoechoic nodules of varying sizes “moth-eaten”. Some of the nodules are consistent with target lesions, characterized by hyperechoic center surrounded by a hypoechoic rim. Visible vasculature and biliary tree appear normal without distension or congestion.

Gallbladder is moderately overdistended with organized, aggregated and centralized non-gravity dependent sludge. Striations of sludge separated by anechoic areas are noted extending from the lumen to the luminal wall. The wall is mildly thick, irregular and hyperechoic. There is no evidence of CBD dilation.

Gastrointestinal

The stomach wall is normal in thickness (canine < 0.5 cm and feline < 0.4 cm) and layering. The lumen of the stomach is empty with no evidence of obstruction, foreign material or infiltrative disease. Pyloric outflow tract appears patent.



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The visible small intestines are normal in wall thickness and layering (canine duodenum < 0.5 cm and feline duodenum < 0.4 cm; other < 0.3 cm). However, just medial to the left kidney, near the edge of one of the videos, there is a bowel loop that appears to have a thickened, hypoechoic wall with emerging or early loss of layering, measuring 0.88 cm thick. Overlying bowel or lymph node or other tissue can't be definitively ruled out based on these images. Small intestinal motility appears adequate (1-3 contractions per min). The lumen of the small intestine is empty with no evidence of obstruction, foreign material or infiltrative disease.

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The visible colon is normal in wall thickness (< 0.2 cm) and layering. Contents are consistent with normal formed feces and gas.

Pancreas

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The pancreatic parenchyma is appropriately isoechoic to surrounding tissue. Visible capsule is smooth and normal in contour. There is no visible pancreatic duct dilation. There is no evidence of active peripancreatic inflammation.

Free Abdomen

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There is no evidence of free peritoneal effusion noted in these images.

There is no apparent lymphadenopathy noted in these images.

PRIMARY FINDINGS

WEIGHT

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- **Nodular Liver** - This finding is concerning for infiltrative disease such as round cell neoplasia or metastatic neoplasia. Benign disease (nodular hyperplasia) cannot be ruled out but is considered less likely.

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- **Hypersplenism** – can be associated with congestion caused by sedation (if sedated) but can also be associated with diffuse infiltrative disease. Both benign conditions such as extramedullary hematopoiesis, lymphoid hyperplasia, as well as infiltrative neoplastic diseases such as round cell neoplasia should be considered.

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- **Gallbladder mucocele**

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- **Potential bowel mass** - There is some concern for a bowel mass characterized by focal concentric thickening and early loss of layering just medial to the left kidney.

SECONDARY FINDINGS

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- **Right adrenal mass** – consistent with adenoma or possibly hyperplasia. Early pheochromocytoma cannot be ruled out. Interpret in combination with clinical signs of hyperadrenocorticism or other adrenal disease.

- **Age related kidney change**

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

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These patient's lesions have changed/progressed markedly from the ultrasound 6 months ago. Recommendations at this time include:

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- Three view thoracic radiographs are recommended for further assessment of cardio-pulmonary status as well as to further evaluate for any evidence of metastatic disease, if not recently evaluated.



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- Fine needle aspirate of the liver +/- spleen is recommended if patient's coagulation status is appropriate.
- If a diagnosis of infiltrative round cell neoplasia (which is what primarily is suspected) is not diagnosed cytologically, exploratory laparotomy for spleen and liver biopsy as well as further bowel assessment (given the suspicion for a bowel mass) as well gallbladder assessment (given the presence of a mucocele) may be necessary to definitively diagnose and therefore manage this patient.
- Ultimately, given the reported proteinuria and the adrenal findings today, further adrenal evaluation/assessment for possible hyperadrenocorticism, etc. may be indicated in the future. However, it is not recommended to test for hyperadrenocorticism in the face of concurrent illness. Therefore, the more serious infiltrative process should be evaluated and managed first.

ADDENDUM TO REPORT – ADDITIONAL IMAGES RECEIVED

After receiving additional images, the previously suspected bowel mass appears to be a thick, hypoechoic gastric wall with loss of layering closely adhered to a prominent hypoechoic pancreas. Scant free fluid and enhanced hyperechoic mesentery are appreciated around the area.

Differentials include the same infiltrative (round cell neoplasia suspected) process as that affecting the liver vs ongoing acute pancreatitis with gastric edema in addition to the new liver pathology.

FNA of the gastric wall could be considered in addition to the previously recommended FNA of the liver.

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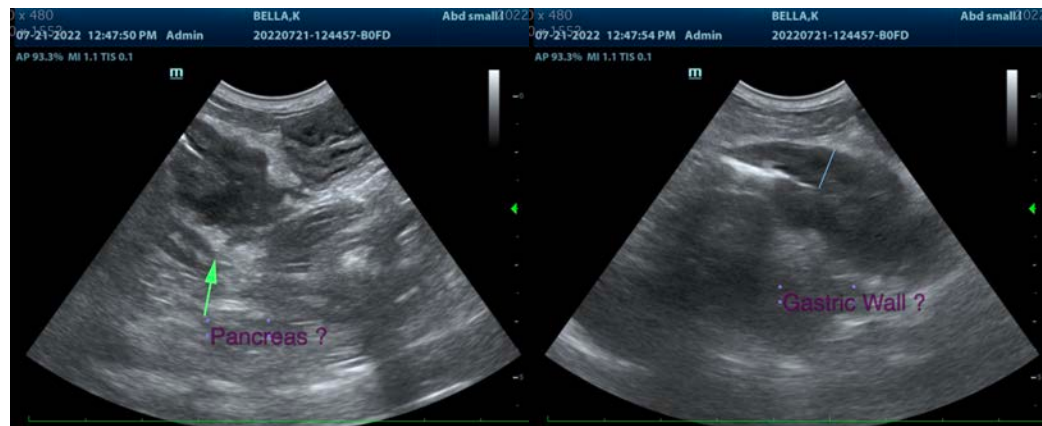
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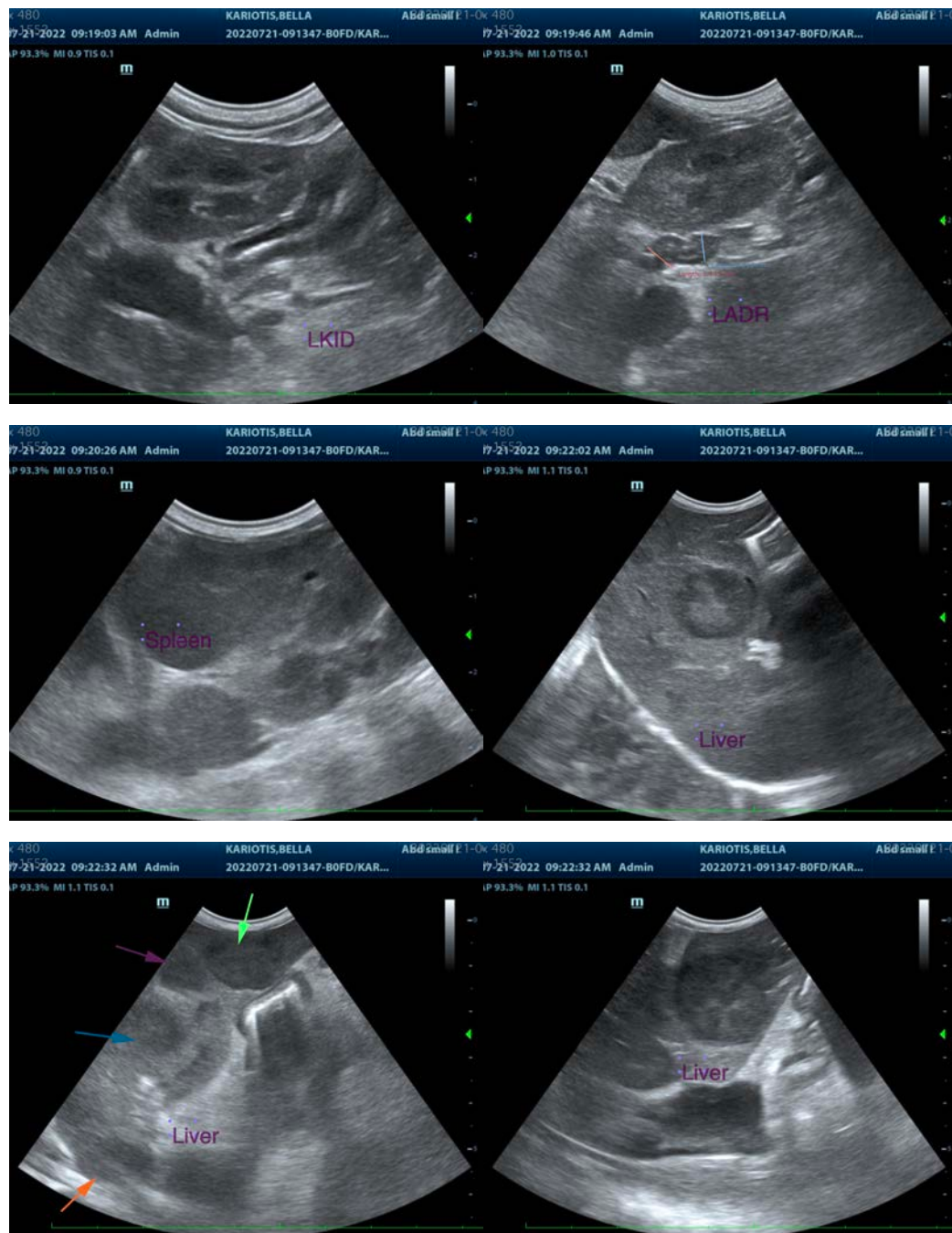
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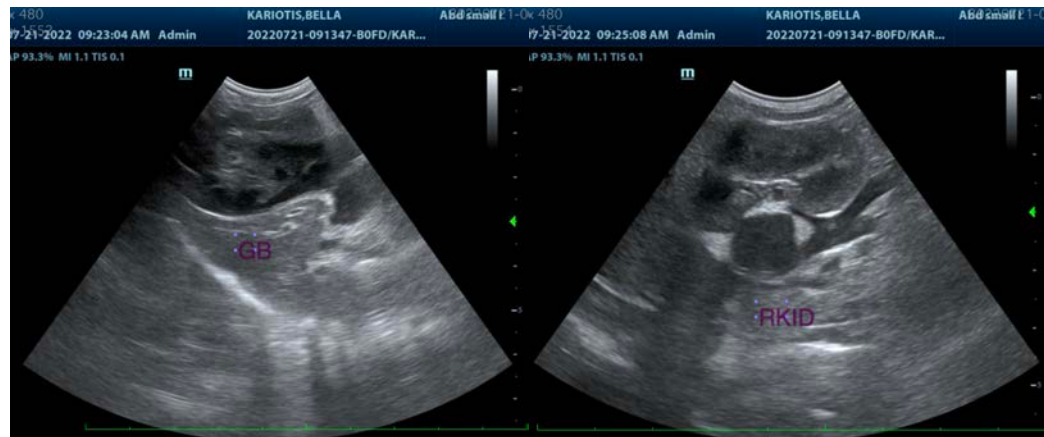
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The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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.

Beth Johnson, DVM, DACVIM
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