SonoPath
Clinical Sonography & Telecytology
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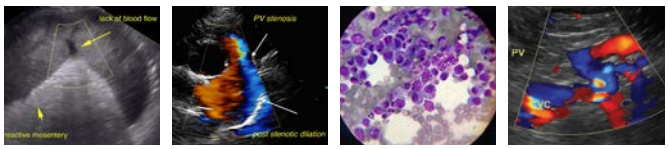


SonoPath.com™
1-800-838-4268 info@sonopath.com

PATIENT

Ruthven Brinkerhoff

SPECIES

Feline

BREED

DSH

SEX

Neutered Male

AGE

13 Years

WEIGHT

9.5 Pounds

INTERPRETED BY

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

IMAGING PERFORMED BY

Dr. Lucas Budden

HOSPITAL NAME

Frontier VH

REFERRING VET

Dr. Lucas Budden

INVOICE

44140

DATE

1/11/23

PRESENTING CLINICAL SIGNS

Intermittent vomiting and weight loss (5/25/2022 was 13.9#). Abdominal ultrasound done 2/4/2022 for vomiting, hyporexia, weight loss, and increased water intake. Owner interested in possible further testing for liver nodule found on previous exam.

Abnormal PE/Chem/CBC/UA Results: 1/4/2023 CBC/Chem/UA/T4/HWT AST high 150 ALT high 538 ALP high 214 Total bilirubin high 1 Cholesterol high at 326 Amylase high 1000 623 PSL high 32 White blood cell high 16.2 Neutrophils high 11,060 Thyroid high normal 3.6 FVL V/FIV negative USG 1.035 Clear appearance Protein 1+ Heartworm test negative chest rads pending

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 left kidney has a normal shape and size (3.93 cm). It is slightly hyperechoic with corticomedullary rim sign. There is no evidence of focal perinephric inflammation or effusion. There is no evidence of pyelectasia, nephroliths, infarcts or hydroureter. Renal vasculature is normal.

The right kidney has a normal shape and size (3.92 cm). It is hyperechoic with corticomedullary rim sign. There is hypoechoic tissue surrounding the kidney, of uncertain origin. There is no evidence of pyelectasia, nephroliths, infarcts or hydroureter. Renal vasculature is normal.

Adrenal Glands

The left adrenal gland is normal in size measuring 0.35 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 XX 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.

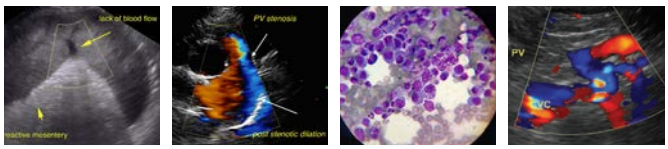
Spleen

The spleen is subjectively normal in size (0.93 cm in width at the level of the hilus), 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 and irregular with rounded margins. The parenchyma is severely heterogenous in echotexture with subtle, indistinct focal mottling. The visible portions of the vasculature and biliary tract appear normal. The liver is diffusely nodular with somewhat ill-defined hyper- and hypoechoic nodules as well as larger, more significant nodules, which are expansile and deform the hepatic margins. One of these lesions measures 0.75 cm x 1.2 cm. Another is slightly cystic at 1.8 cm x 1.15 cm.

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 moderate amount of non-organized echogenic debris. The cystic and common bile ducts are normal/not visible.



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Gastrointestinal

The stomach contains minimal luminal contents. It measures at a normal thickness of <0.36cm 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. No masses or focal lesions were observed.

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. Duodenum wall measures 0.35 cm. Jejunum wall measures 0.21 cm. Visualized peristalsis appears appropriate. There were no focal lesions consistent with obstruction or a mass effect observed.

The ileocecal junction is visualized. In this region, there is a large amount of expansile inflamed, hypoechoic tissue, creating a mass effect measuring approximately 2.06 cm x 1.56 cm. More distally, sections of colon are visualized with formed fecal material and gas shadowing distally.

Pancreas

The pancreas (particularly caudal to the stomach) is prominent and hypoechoic as compared to the surrounding isoechoic 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. There are occasional prominent mesenteric lymph nodes, one of which is visualized at 0.40 cm. The omentum is generally irregular, almost nodular in some regions, and is hyperechoic around the ileocecal junction mass and the liver.

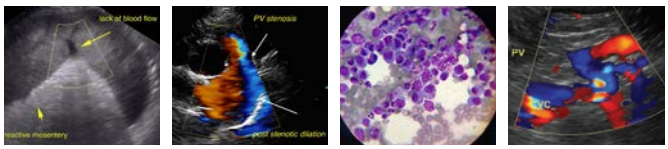
ULTRASONOGRAPHIC FINDINGS

- Large, rounded, severely heterogeneous, diffusely nodular liver with mixed echogenic, large nodules/masses – 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. The appearance of the nodules are concerning for an underlying neoplastic process, but other differentials exist.
- Corticomedullary rim sign in both kidneys – Clinical significance uncertain, can be seen in normal patients and in cases of ethylene glycol toxicity, FIP, chronic interstitial nephritis, and leptospirosis.
- Prominent hypoechoic pancreas – The pancreatic changes are most consistent with mild pancreatitis or a recent episode of pancreatic inflammation.
- Ill-defined hypoechoic mass effect at the ileocecal junction – Findings are concerning for severe wall thickening, loss of layering, and surrounding inflammation.

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

The liver appears significantly nodular with some larger nodules approaching mass effects. Some of these are expansile and disrupt the normal hepatic margins. These findings would be concerning for an underlying neoplastic process. Consider re-aspiration and repeat cytologic analysis.

The ileocecal junction appears abnormal with thickened hypoechoic walls and surrounding



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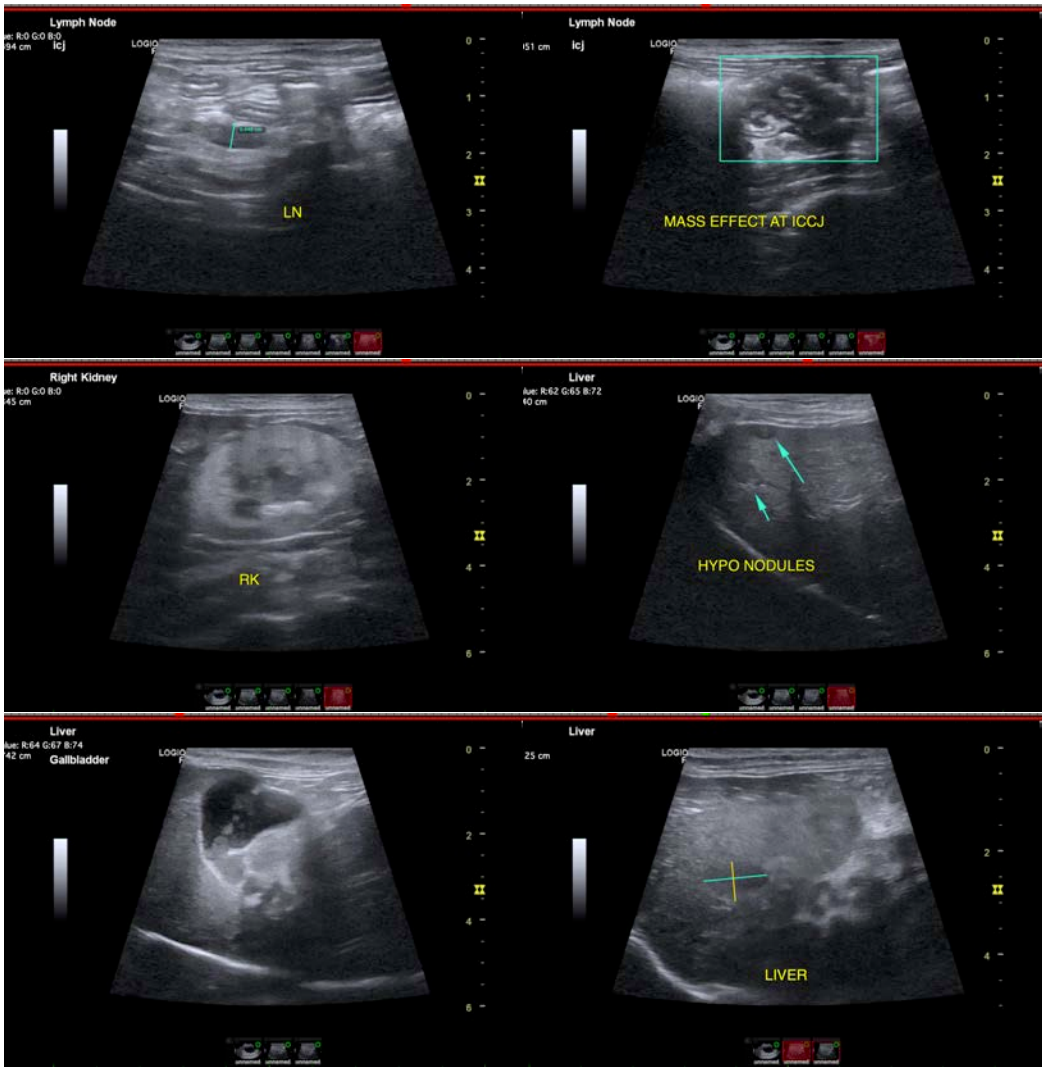
inflammation, creating a mass effect. Consider a fine needle aspirate of this hypoechoic region with cytologic evaluation. Primary considerations would be round cell neoplasia, carcinoma, FIP, other.

Recommend three view thoracic radiographs to evaluate for possible concurrent thoracic disease/involvement.

I suspect the liver changes observed are responsible for the liver enzyme elevations reported. It is possible that a biopsy of the liver may be necessary to obtain a true diagnosis. Prior to considering this, I would aspirate the lesion at the ileocecal junction, as this is concerning for a possible ill-defined mass. The hyperechoic irregular nature of the mesentery could also be concerning for carcinomatosis or inflammation, although no significant fluid is observed.



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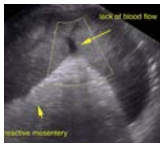
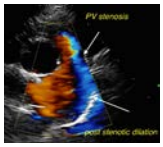
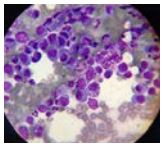
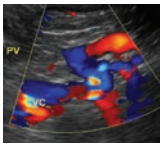

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The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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.

Kathleen Sennello DVM,MS, Diplomate ACVIM (Small animal Internal Medicine)
kathleen.sennello@sonopath.com