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Clinical Sonography & Telecytology
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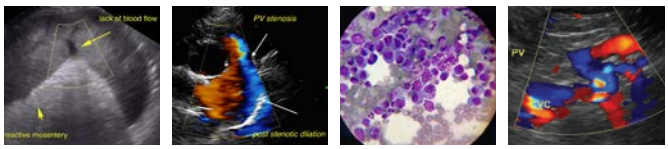

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1-800-838-4268 info@sonopath.com

PATIENT

CeeCee Holmes

SPECIES

Feline

BREED

DLH

SEX

Spayed Female

AGE

14 Years 10 Months

WEIGHT

9.63

INTERPRETED BY

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

IMAGING PERFORMED BY

Dr. Judy Schroeder

HOSPITAL NAME

Animal Health Associates

REFERRING VET

Dr. Judy Schroeder

INVOICE

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DATE

4/4/23

PRESENTING CLINICAL SIGNS

Patient was diagnosed with diabetes in October 2022 and started on Glargine 1U bid. Patient had UTI at the time, which responded to Veraflox. Since then patient has continued to lose weight, despite Fructosamine levels being somewhat low (288 umol/l, 205 umol/l). Patient's BG levels when checked at random times are good, but patient has continued to have large glucosuria and proteinuria. Waxing and waning appetite. Recurrent skin and bladder infections. Currently getting 1 U in am and 1/2 U in pm glargine.

Abnormal PE/Chem/CBC/UA Results: Weight and muscle loss (has lost 4 # since October, was obese to start). Distended abdomen. Slightly tender R cranial abdomen. Fructosamine 205 umol/l, BG 269 mg/dl ALP 115 U/l SDMA 15 ug/dl Phosphorus 6.8 mg/dl Non regenerative anemia 29.3% hematocrit, mild monocytosis 837/ul UPC 1.5, USG 1.019 3+ glucosuria, 1+ proteinuria, hematuria, mildly active sediment T4 2.1 ug/dl Hx of mild elevations in spec fPL.

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 is normal in size but irregular in shape and appearance, measuring 3.13 cm. Overall echogenicity is slightly hyperechoic with mildly reduced corticomedullary distinction and a typical 1:3 cortex:medulla ratio. There is an irregular “bulging” appearance to the craniomedial aspect of the kidney. This could be consistent with an early mass effect or region of previous infarct. This irregular area measures approximately 1.65 cm x 0.42 cm. Additionally, there is some irregular tissue visualized medial to the left kidney, potentially in the region of the left adrenal. There is no evidence of focal perinephric inflammation or effusion. There is mild pyelectasia at 0.25 cm. There is no evidence of nephroliths or hydroureter. Renal vasculature is normal.

The right kidney has a normal shape and size (3.96 cm) with mild pyelectasia at 0.16 cm. Overall echogenicity is slightly hyperechoic with mildly reduced 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 nephroliths, infarcts or hydroureter. Renal vasculature is normal.

Adrenal Glands

The left adrenal gland is borderline large in size measuring 0.61 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/borderline large in size measuring 0.69 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 (0.73 cm), 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.

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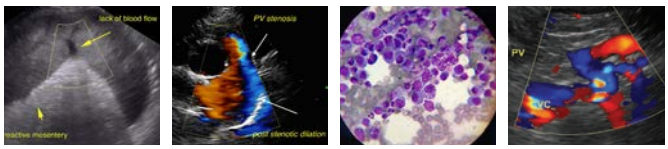

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Liver

The liver is large in size, and normal in 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 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 0.38 cm. Jejunum wall measures 0.31 cm. 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

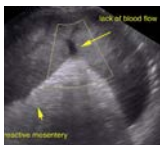
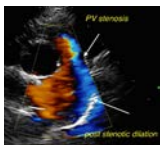
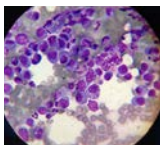
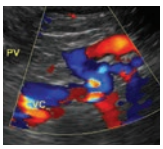
The pancreas is prominent, hypoechoic and mottled in both the left and right limbs. It has a somewhat nodular texture with some rounded regions of small cystic areas. There is a prominent, almost nodular appearing area visualized cranial to the left kidney. Similar tissue is visualized caudal to the stomach and medial to the duodenum and the right limb. There is hyperechoic mesentery surrounding this abnormal tissue.

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. There is a significant amount of hyperechoic mesentery, particularly in the right cranial abdomen around the pancreas.

ULTRASONOGRAPHIC FINDINGS

- Irregularly shaped left kidney – The changes in the shape of the left kidney could be consistent with an early mass effect or regional infarcts. Recommend continued monitoring.
- Mildly reduced corticomedullary distinction in both kidneys with bilateral pyelectasia – The bilateral renal findings are consistent with age-related change. Pyelectasia of the kidney(s)could be consistent with pyelonephritis, chronic renal disease, secondary to PU/PD or fluid therapy (if applicable), other.
- Diffusely irregular/nodular hypoechoic pancreas with small cystic regions and surrounding hyperechoic mesentery – The pancreatic changes are most consistent with moderate pancreatitis/pancreatic inflammation. Recommend fPLI testing and continued monitoring for improvement or possible development of a pancreatic abscess. Consider fine needle aspirate if not improving. The irregular/nodular appearance of the pancreas could also be consistent with

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an underlying neoplastic process.

- Large, mildly heterogeneous liver – Hepatic changes are non-specific and could be consistent with inflammation/infection (cholangiohepatitis), infiltrative neoplasia, lipidosis or other hepatopathy. These changes could be consistent with a diabetic hepatopathy.

- Borderline enlarged adrenal glands – These could be enlarged due to stress and non-adrenal illness, or could be consistent with adrenal dependent disease, but given the history this patient does not appear insulin resistant.

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

The pancreas is very abnormal in this patient in that it is very prominent and irregular in shape with occasional small cystic areas and surrounding hyperechoic mesentery. These changes could be consistent with chronic pancreatitis and irregular remodeling, but these types of changes could also be consistent with neoplastic change. Consider a fine needle aspirate of the pancreas and empirical treatment for pancreatitis.

The capsule of the left kidney appears irregular with a "bulging" area in the cranial medial aspect. This could be expansile change due to infiltrative disease such as a mass effect, but could also be consistent with irregularity caused secondary to infarcts. No overtly abnormal tissue is noted within the irregularity. Options moving forward would include continued monitoring with ultrasound, advanced imaging, or possibly a fine needle aspirate of the kidney.

Additionally, there is some irregular tissue that appears medial to the left kidney, possibly in the region where the adrenal would be, although the image provided of the left adrenal appears appropriate, so it is not certain what the etiology of this tissue is. Additionally, this could be impacted due to the left limb of the pancreas in the region. Recommend continued monitoring or advanced imaging in this region.

The changes within the liver are likely consistent with the diabetes reported. Additionally, there is some mild pyelectasia noted associated with the kidneys. This could be secondary to PU/PD, but a urinalysis and culture is warranted.

As far as diabetic regulation goes, I would recommend an in-hospital glucose curve, as the low blood sugars combined with the large amount of glucose in the urine is concerning for a possible Somogyi effect, which can be challenging to catch.

Overall, it is difficult to determine the difference between irregular nodular pancreatitis and underlying neoplasia, and the changes in the kidney are at this time somewhat non-specific but concerning. Additionally, the tissue medial to the kidney is concerning. I suspect if definitive answers are desired, sampling of the pancreatic issue would be warranted, and a contrast CT scan of the right kidney and other abdominal structures. If recheck ultrasound is desired, consider recheck in approximately 8 weeks for progression of these lesions.

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

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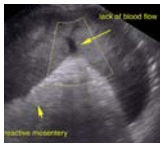
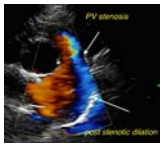
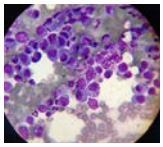
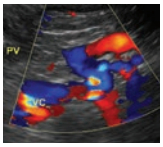

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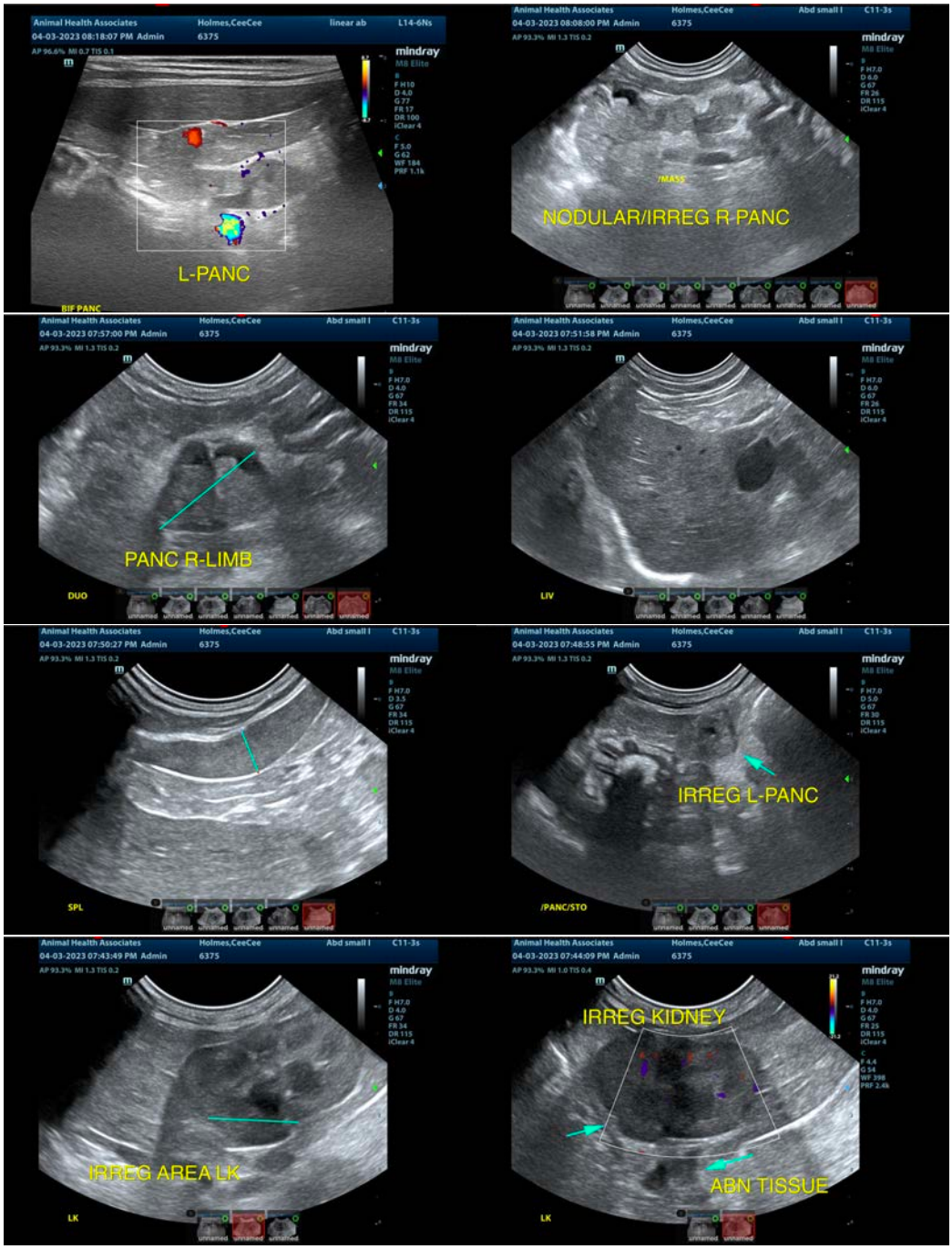

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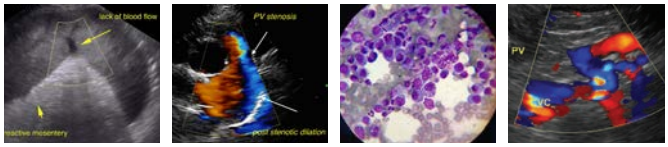

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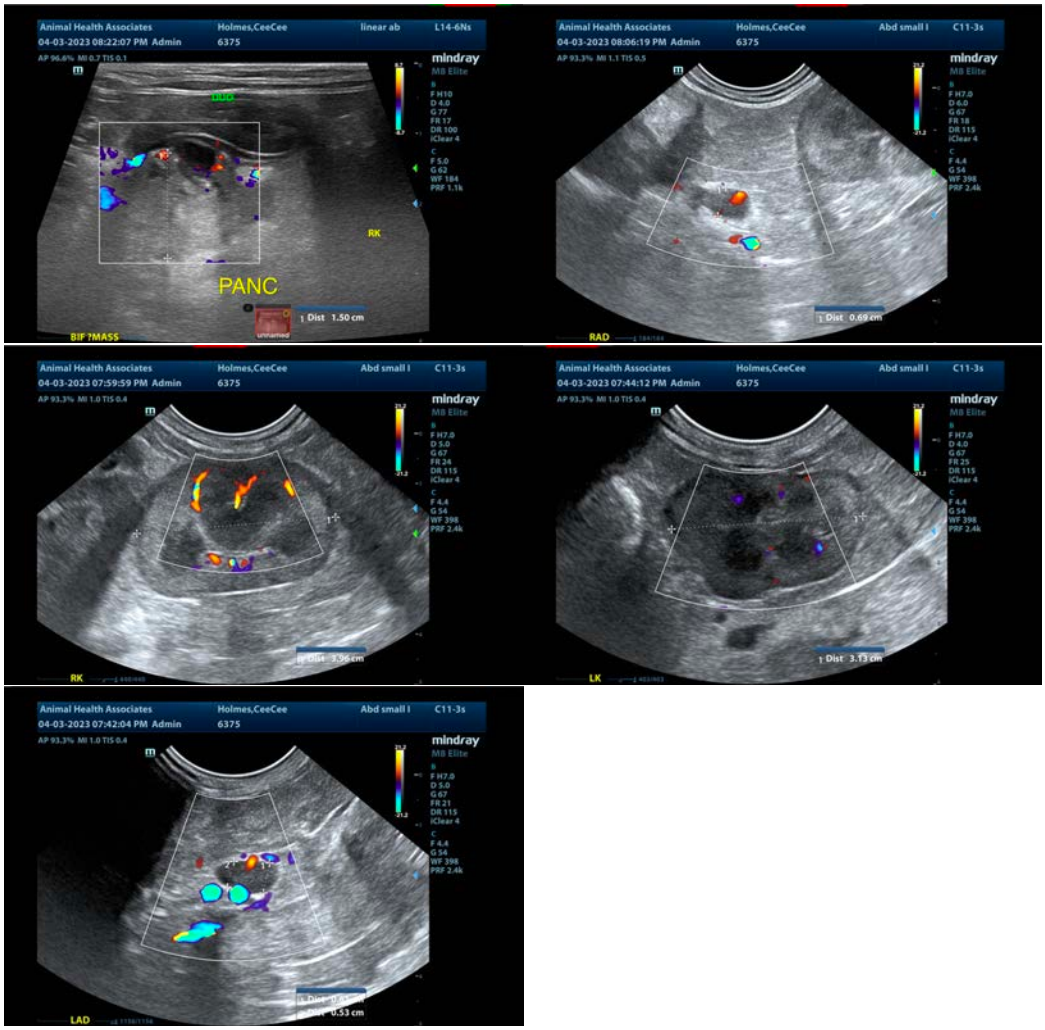

The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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.

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

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