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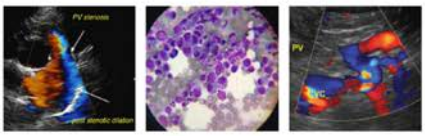

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Clinical Sonography & Telecytology
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PATIENT

Pebbles Diedrich

SPECIES

Feline

BREED

Oriental Shorthair

SEX

Spayed Female

AGE

5 Years 5 Months

WEIGHT

2.45 kg

INTERPRETED BY

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

IMAGING PERFORMED BY

Tom McNeill

HOSPITAL NAME

SVS Imaging CT

REFERRING VET

Madison VS – Dr. McKelvey

INVOICE

44288

DATE

1/18/23

PRESENTING CLINICAL SIGNS

Pebbles presented to the MVS Emergency Service on Jan 18, 2023, at 10:50am, for evaluation of hyporexia, icterus. Owner noticed Pebbles had a decreased appetite over the last week. She had no interest in her wet food which is abnormal for her. Yesterday, owner noticed that Pebbles ears and gums appeared yellow. Owner brought her to pcDVM were bloodwork was done. Bloodwork results were received today, and pcDVM referred Pebbles to us. Pebbles has a hx of UTI and stranguria, and owner noticed her taking a while in the litterbox last week.

Abnormal PE/Chem/CBC/UA Results: SDMA 55, Crea 5.8, BUN 120, Phos 9.3, NA 145, CL 107, TP 9.1, Glob 6.2, T. Bili 8.0, WBC 53k, Neu 42.4k, Mono 1.06k, Eos 3.71k, Baso 530. Rouleaux present: saline agglutination test performed and was negative. No feline Hemotropic Mycoplasma (FHM, formerly Hemobartonella) seen. Reactive lymphocytes present. Slight Howell Jolly Bodies

ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN

Urinary System

The urinary bladder is moderately distended with mild primarily suspended echogenic debris present. 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 calculi. Echogenic debris of this type can be associated with small crystals, cellular debris and proteinaceous debris.

The left kidney has a normal shape and size (4.33 cm). Overall echogenicity is slightly hyperechoic with hyperechoic striations in the cortex and poor corticomedullary distinction and a typical 1:3 cortex:medulla ratio. Pyelectasia is noted at 0.37 cm. There is no evidence of focal perinephric inflammation or effusion. There is no evidence of nephroliths or infarcts. Renal vasculature is normal. The proximal ureter is dilated at 0.23 cm.

The right kidney has a normal shape and size (3.91 cm). Overall echogenicity is slightly hyperechoic with hyperechoic striations in the cortex and poor corticomedullary distinction and a typical 1:3 cortex:medulla ratio. Pyelectasia is noted at 0.38 cm. Occasional small cortical cysts noted. There is no evidence of focal perinephric inflammation or effusion. There is no evidence of nephroliths or infarcts. Renal vasculature is normal. The proximal ureter is dilated at 0.23 cm distally and 0.23 cm proximally.

Adrenal Glands

The left adrenal gland is normal in size measuring 0.40 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 0.38 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 prominent, hypoechoic, and mottled. The blood flow through the hilus and splenic parenchyma appears normal. While no focal mass lesions are observed, mottling is significant, almost verging on a reticulated pattern.

Liver

The liver is large, hyperechoic, and heterogeneous. The visible portions of the vasculature and biliary tract appear normal. There are numerous ill-defined hyperechoic nodules throughout the hepatic parenchyma and occasional subtle hypoechoic nodules. Examples of such nodules include a small nodule

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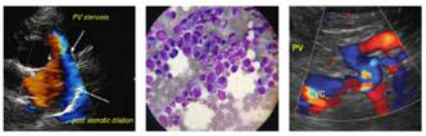

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on the left side measuring 0.43 cm, a larger nodule measuring 1.18 cm x 0.95 cm that appears to be somewhat cystic, and a hyperechoic nodule on the right side measuring 0.43 cm. Additionally, there is a hypoechoic cystic structure on the left measuring 0.44 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.

Gastrointestinal

The stomach contains minimal luminal contents. It measures at a normal thickness of 0.13 cm 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 mild to moderate 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. Jejunum wall measures 0.18 cm. Duodenum wall measures 0.24 cm. No focal mass lesions or obstructions are observed. The proximal duodenum and the pylorus appear somewhat fluid/chyme dilated, and there is some mild corrugation and possible mucosal speckling in this region as well.

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. Colon wall measures 0.07 cm.

Pancreas

The pancreas is prominent and mottled compared to the surrounding isoechoic mesentery. There is no evidence of nodules or cystic lesions. The parenchyma is irregular and diffusely nodular with hypoechoic focal regions varying in size from 0.20-0.60 cm. Some of these nodules could also be cystic in nature. There is mild surrounding mesenteric inflammation.

Free Abdomen

There is a small amount of free abdominal fluid. There are prominent mesenteric lymph nodes visualized measuring 0.30, 0.30, and 0.39 cm. Additionally, there is a hepatic lymph node measuring 0.71 cm x 1.8 cm. The omentum is generally slightly hyperechoic.

PRIMARY FINDINGS

- Hyperechoic kidneys with decreased corticomedullary distinction and significant pyelectasia with prominent mildly dilated ureters – Mild loss of corticomedullary distinction in both kidneys could be consistent with chronic degenerative disease or interstitial nephrosis. Pyelectasia of the kidney(s)could be consistent with pyelonephritis, chronic renal disease, secondary to PU/PD or fluid therapy (if applicable), other.

- Prominent, hypoechoic, mottled spleen – The diffuse splenic changes are non-specific and could be consistent with lymphoid hyperplasia, extramedullary hematopoiesis, infiltrative neoplasia, inflammation, other. Cytology or histopathology would be necessary to get a definitive diagnosis.

- Large hyperechoic liver with hyperechoic nodules and occasional hypoechoic nodules – Hepatic changes are non-specific and could be consistent with hepatic lipidosis, inflammatory/infectious disease, infiltrative neoplasia, or other hepatopathy.

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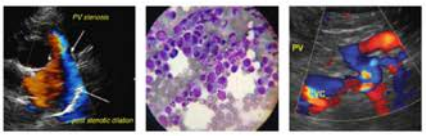

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- Prominent, mildly dilated pylorus/duodenum – Findings could be consistent with focal enteritis, lack of fasting, etc.
- Prominent, mottled, nodular pancreas – The pancreatic changes are not typical for pancreatitis, although previous episodes of pancreatic inflammation or mild current inflammation is possible. The hypoechoic/cystic areas could represent nodular hyperplasia or an underlying neoplastic process.
- Small amount of free abdominal fluid
- Mild to moderate mesenteric lymphadenopathy – The prominent abdominal lymph nodes are most consistent with reactive lymphadenitis or lymphoid hyperplasia. Neoplastic infiltration is considered less likely.

SECONDARY FINDINGS

- Echogenic debris in the urinary bladder – The echogenic debris in the bladder lumen could be consistent with cells, crystals, and/or mucus.
- Mild gallbladder debris – The significance of the aggregated gallbladder debris is unclear. This could represent an early mucocele, cholestasis, or may be secondary to fasting. Incidental gall bladder debris is less common in cats.

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

No large focal mass effects are observed on today's scan, but there is the overall appearance of enlarged abnormal organs with irregular parenchyma. This could be concerning for infiltrative disease, particularly the liver and spleen. Consider a fine needle aspirate in these areas (provided coagulation parameters are normal).

The biliary tract appears relatively normal, making the elevated bilirubin most consistent with either a primary hepatopathy (or hemolysis if the patient is anemic).

The changes observed in the kidneys are likely consistent with chronic progressive renal disease, although this is a relatively young cat. Recommend a blood pressure evaluation, urinalysis and culture in addition to urine protein to creatinine ratio. No obvious obstructive process is visualized associated with the ureters, so dilation could be secondary to pyelonephritis, passing previous stones, et.

In general, the small intestine appears relatively normal. The proximal duodenum and pylorus appear somewhat fluid dilated. The duodenum is slightly corrugated with some speckling of the mucosa. This could indicate some level of stasis in this area and focal enteritis. Recommend continued monitoring.

Consider a fine needle aspirate of the pancreas to differentiate between a benign or neoplastic process.

There is a diffuse lymphadenopathy present. If possible, consider fine needle aspirate of a mesenteric lymph node.

Round cell neoplasia would be the primary differential here, although hepatic lipidosis +/- cholangiohepatitis could also be a cause for the elevated bilirubin, etc. If a cytologic diagnosis cannot be obtained, consider surgical biopsies.

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

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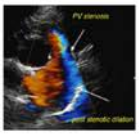
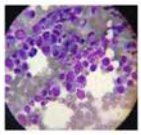
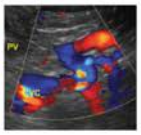

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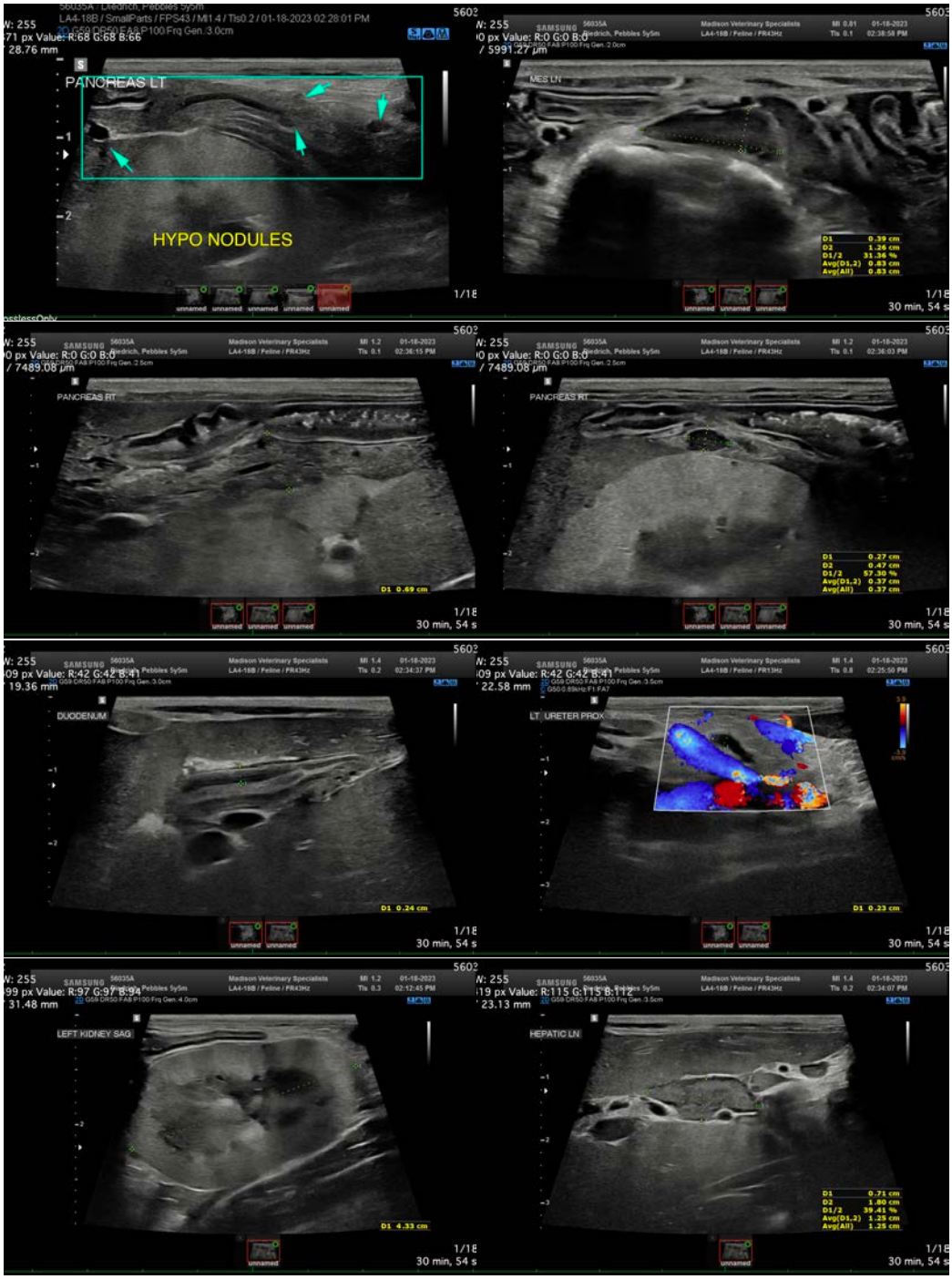

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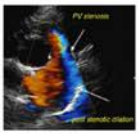
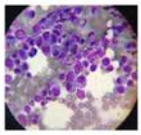
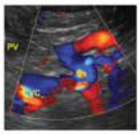

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The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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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