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Clinical Sonography & Telecytology
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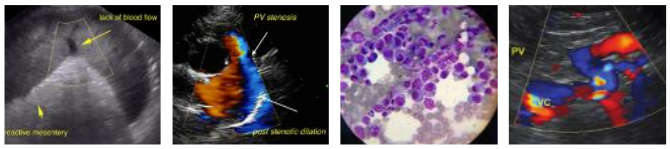

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1-800-838-4268 info@sonopath.com

PATIENT
Candy Oswald

SPECIES
Canine

BREED
Poodle X

SEX
Spayed Female

AGE
16 Years

WEIGHT
13.8 Pounds

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

IMAGING PERFORMED BY
Dr. Peter Nelson

HOSPITAL NAME
Valley Vet Service

REFERRING VET
Dr. Michelle Bartus

INVOICE
37625

DATE
5/11/22

PRESENTING CLINICAL SIGNS

Weight loss 2# over several months. Dog has DJD and takes Galliprant. Bloodwork in Dec. 2021 was normal. Had been boarded 4 days. Seemed fine when picked up, but then started to vomit the next day. Multiple episodes of vomiting the past 24 hr. Lethargic.
Abnormal PE/Chem/CBC/UA Results: ALKP 1192 (23-212) GGT 27 (0-11), TBILI 3.8 (0-0.9) TP 8.3 (5.2-8.2), GLOB 4.9 (2.5-4.5); ALT, BUN, PHOS did not read on chem panel (too little amount of blood). No other abnormalities.

ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN

Urinary System

The urinary bladder is minimally distended with urine. There is a focal hyperechoic shadowing structure visualized within the urinary bladder lumen, measuring 0.85 cm, most consistent with stone. Correlate these findings with abdominal radiographs. The area of the trigone, ureteral papillae and proximal urethra could not be clearly visualized due to lack of urine distention.

The left kidney has a normal shape and size (4.3 cm) with numerous non-obstructive nephroliths. 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 pyelectasia, infarcts or hydroureter. Renal vasculature is normal.

The right kidney has a normal shape and size (4.3 cm) with numerous non-obstructive nephroliths and mild pyelectasia at 0.29 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 infarcts or hydroureter. Renal vasculature is normal.

Adrenal Glands

The left adrenal gland is large in size measuring 0.40 cm at the caudal pole, 0.81 cm at the cranial pole and 2.2 cm in length. It is somewhat irregular in shape. It is observed in its normal position cranial to the left renal artery. It is irregular in appearance in that the cranial pole appears slightly hyperechoic and enlarged, measuring 0.81 cm x 1.05 cm. There is no obvious evidence of vascular invasion. Findings are suggestive of a nodule in the cranial pole of the left adrenal gland.

The right adrenal gland is normal in size measuring XXcm 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.

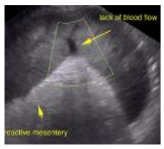
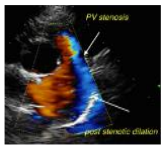
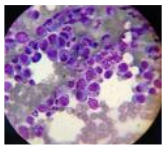
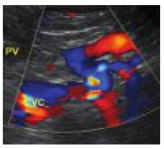
Spleen

The spleen is subjectively normal in size and the echotexture is homogenous. The splenic capsule is smooth with no visible irregularities. Rare discrete focal hyperechoic, perivascular parenchymal abnormalities are present. The appearance of these lesions is most consistent with benign splenic myelolipomas. The blood flow through the hilus and splenic parenchyma appears normal.

Liver

The liver is subjectively normal in size, and echogenicity with smooth peripheral margins. The parenchyma is homogenous echotexture. 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 primarily anechoic. 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 <0.7cm 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. Jejunum wall measured 0.35 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 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.

ULTRASONOGRAPHIC FINDINGS

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

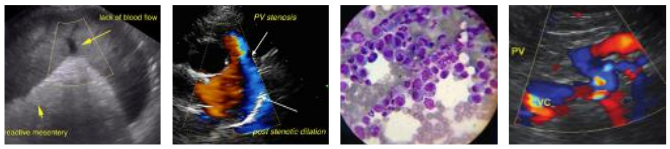
- Small, hyperechoic nodule in the cranial pole of the left adrenal – Left/right adrenomegaly could be consistent with neoplasia (e.g., adenoma, carcinoma, pheochromocytoma), hyperplasia, inflammation, other.

- Shadowing, hyperechoic structure in the urinary bladder – findings are most consistent with a bladder stone. Recommend correlation with abdominal radiographs.

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

An obvious cause for the acute vomiting and lethargy is not observed. Correlate these findings with abdominal radiographs, as ultrasound can be insensitive in picking up some types of ingested foreign material. Additionally, consider a GI panel with quantitative PLI, TLI, cobalamin and folate to look for evidence of pancreatitis not evident on today's scan, or underlying gastrointestinal disease. Hopefully this is a transient acute gastroenteritis(?). Recommend symptomatic therapy, serial radiographs and bloodwork.

Additionally, there is a significant elevation in ALP and bilirubin. The gallbladder is visualized and is moderately distended with mild debris, but an obvious obstruction is not visualized. Continued monitoring of the gallbladder is warranted. No focal hepatic lesions are visualized. It is not clear if this is a primary hepatopathy and the mild gallbladder changes are more significant than expected, and



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could be the source of the problem. Options for further treatment/diagnostics include:

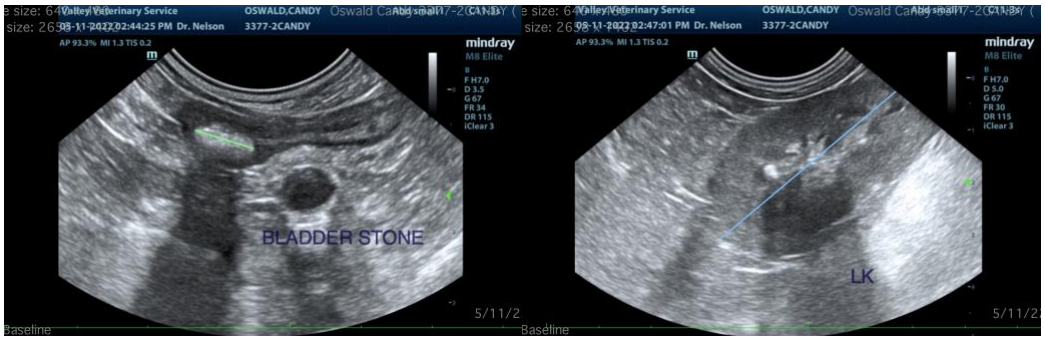
- -Fine needle aspirate of the liver if coagulation parameters permit this. (This does not always differentiate the cause of the issue but can help to rule out round cell neoplasia.)
- If stable enough can consider supportive care with antibiotics, antiemetics, fluids and choleretics (ursodiol)
- -Consider a GI panel (Texas A&M university) for a quantitative PLI (especially in cats)
- -Lastly if changes are persistent/progression and not responding to medical therapy, consider referral to a board-certified veterinary surgeon for advanced imaging (contrast CT scan) and/or a liver biopsy and evaluation of the gall gladder intra-op.

Consider three view thoracic radiographs to rule out concurrent thoracic disease/involvement.

A shadowing stone is visualized within the urinary bladder. Correlate these findings with abdominal radiographs. Recommend urinalysis and culture, and cystotomy if this is a clinical problem.

The cranial pole of the left adrenal gland is hyperechoic and enlarged. Despite this enlargement, it is not severely enlarged. Options moving forward would include:

- If signs of cushings are present, consider adrenal function testing. I prefer an ACTH stimulation test combined with an adrenal panel to the University of Tennessee's endocrine lab to look for atypical adrenal hormones as well as cortisol. (other testing can suffice)
- If adrenal dependent cushings is suspected and supported by adrenal function testing consider medical therapy with lysodren or trilostane or consider surgical removal (recommend referral to a board certified veterinary surgeon and possible pre op CT)
- Recommend blood pressure evaluation-if hypertensive consider testing catecholamine levels for a possible pheochromocytoma
- If no symptoms of cushings are present, consider either referral for surgery or continued monitoring with ultrasound (in 3-4 months).
- Many of these nodules can be benign and incidental in nature, unfortunately that is difficult to determine with a single ultrasound.



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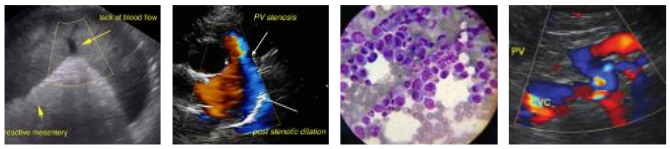

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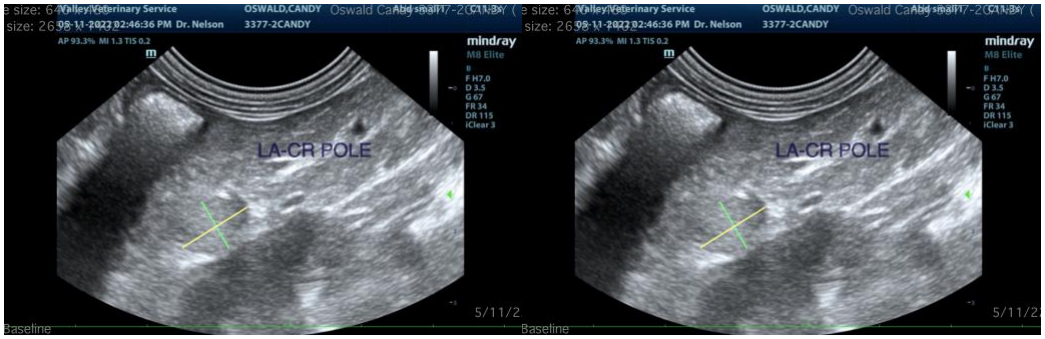

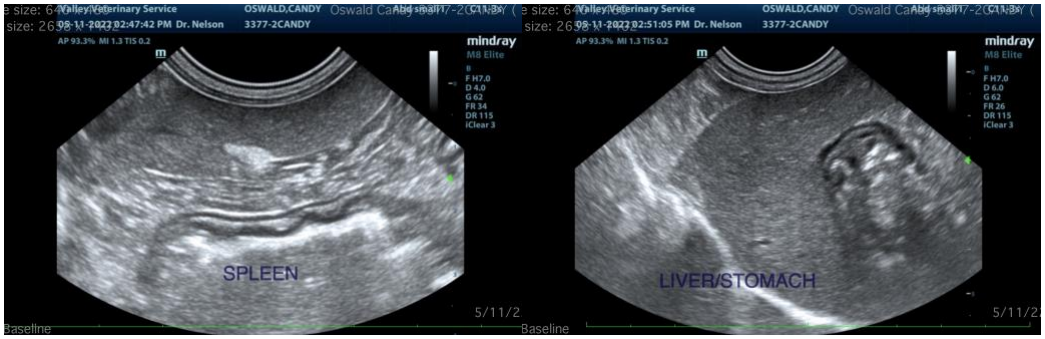

The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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.

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