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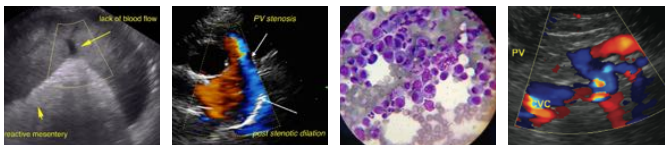


SonoPath.com
1-800-838-4268 info@sonopath.com

PATIENT
Rocky Hengel

SPECIES
Canine

BREED
Dachshund

SEX
Neutered male

AGE
14 years

WEIGHT
15.3 lbs

INTERPRETED BY
Beth Johnson, DVM DACVIM

IMAGING PERFORMED BY
Dr. Reyes

HOSPITAL NAME
Chain of Lakes Animal Clinic

REFERRING VET
Dr. Reyes

INVOICE
32377

DATE
8/17/22

PRESENTING CLINICAL SIGNS

History: Pet presented for dental check, acting painful around mouth after eating hard treats. Pet has a history of Mydriasis, ophthalmologist is suspecting Idiopathic nerve paralysis and recommended a neuro consult. No weakness on hind end. Concerned about rising PSL.
Abnormal PE/Chem/CBC/UA Results: TP: 7.6 UA Glob: 3.9 Protein: 3+ ALT: 119 UPC: 0.8 Alp: 1492 Glu: 140 Trig: 401 PSL: 590 Plt: 490

ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN

Urinary System

Urinary bladder is adequately distended with primarily anechoic contents and occasional echogenic non-shadowing debris. Apical urinary bladder wall is diffusely thick. Mucosa is hyperechoic and irregular. A 0.6 cm cystoliths with an acoustic shadow as well as on the dorsal wall near the trigone there is a 0.8 cm wide x 0.63 cm into the lumen echogenic density that does not have an acoustic shadow and cannot be definitively attached to the bladder wall. This may be attached or debris sitting against the wall. The trigone and visible pelvic urethra are normal thickness with a smooth mucosal surface.

The area of the prostate is examined without evident pathology.

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 or infarcts observed. A 1-2 cm in diameter cortical cyst was noted in the caudal pole of both kidneys. Non-obstructive areas of mineralization/nephroliths are also noted in both kidneys. The left kidney measured 4.6 cm and the right kidney measured 4.4 cm.

Adrenal Glands

Left adrenal gland is normal in size (0.54 cm at cranial pole and 0.64 cm at caudal pole), shape and overall architecture, echogenicity and echotexture. Visible surrounding vasculature appears normal.

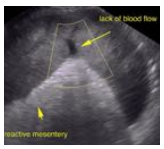
Right adrenal gland is normal in size (0.6 cm thick), shape and overall architecture, echogenicity and echotexture. Visible surrounding vasculature appears normal.

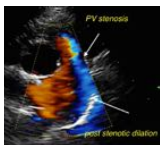
Spleen

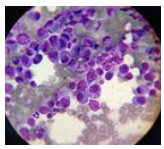
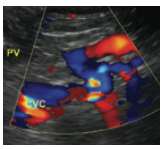
Spleen is subjectively normal in size with a normal smooth capsular contour. Parenchyma is appropriately finely textured and homogenous with normal echogenicity relative to surrounding tissue (hyperechoic to liver). No focal nodules or masses are observed. Splenic vasculature appears normal.

Liver

Liver is subjectively enlarged with mildly irregular margins. Parenchyma is heterogenous characterized by multiple poorly defined hypoechoic nodules within otherwise hyperechoic liver parenchyma. Visible vasculature and biliary tree appear normal without distension or congestion. A 1.3 cm focal, hypoechoic nodule was noted near the gallbladder.





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Gallbladder is moderately distended with anechoic bile as well as suspended and gravity dependent echogenic debris. The wall is smooth without visible thickening. There is no evidence of cystic or CBD dilation. There is no evidence of effusion or inflammation.

Gastrointestinal

The visible stomach wall is normal in thickness and layering. The stomach contains an echogenic, curvilinear interface with strong acoustic shadow. This is concerning for a non-obstructive foreign body as there is no gastric distension and no visible pyloric outflow obstruction noted.

The visible small intestines are normal in wall thickness and layering. 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.

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

Pancreas

The observed pancreas appears appropriately isoechoic to surrounding omental fat. Visible capsule is smooth and normal in contour. Visible pancreatic parenchyma is homogenous and unremarkable. There is no visible pancreatic duct dilation. There is no evidence of active peripancreatic inflammation.

Free Abdomen

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

There is no apparent lymphadenopathy noted in these images.

ULTRASONOGRAPHIC FINDINGS

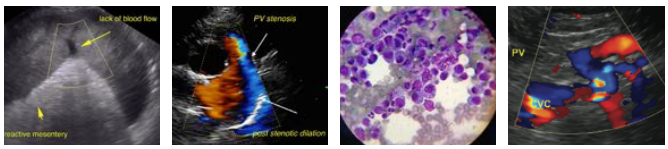
Primary Findings

- **Heterogenous Liver –** These changes are most consistent with benign processes such as nodular hyperplasia, steroid (vacuolar) hepatopathy, extramedullary hematopoiesis or possibly chronic inflammatory disease and less commonly infiltrative round cell or metastatic neoplasia.

  Differentials for a discrete liver nodule include primarily benign changes such as nodular hyperplasia, fibrosis of an old hematoma, granuloma, etc.; however, while considered less likely, primary hepatic neoplasia, infiltrative round cell neoplasia and metastatic disease can mimic benign lesions and cannot be definitively ruled out.

- **Gallbladder debris (canine) -** Cholecystic debris is of unknown clinical significance. It can be seen with biliary stasis from fasting or illness. Cholecystic debris is not necessarily related to hepatobiliary disease. Echogenic bile is most commonly an incidental finding in dogs and should be interpreted in combination with clinical signs such as nausea, inappetence, cranial abdominal discomfort and/or laboratory changes such as increased ALP and/or increased Tbili.

- **Cystoliths in urinary bladder** as well as a **non-shadowing density near the trigone** differentials include small pedunculated nodule versus debris/blood clot, etc. adhered to wall of



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the urinary bladder. Suspect non-obstructive gastric foreign body. Normal ingesta and gas cannot be ruled out, but is considered less likely given the strong acoustic shadow.

Secondary Findings

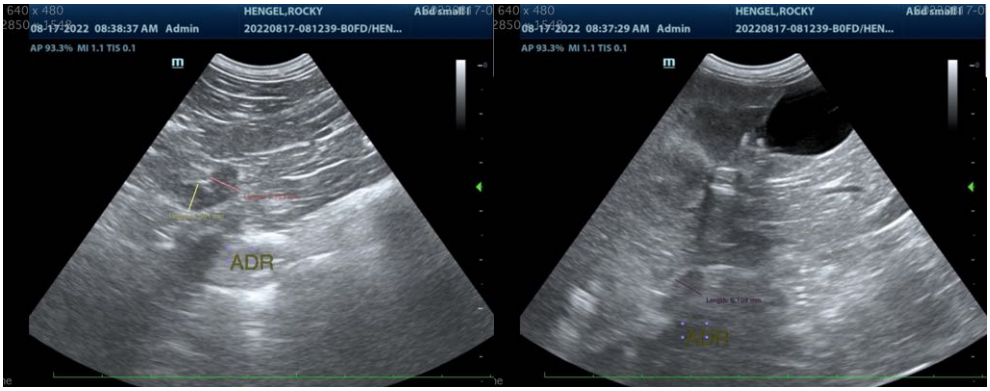
- **Age related renal changes** with bilateral cortical cysts and bilateral, non-obstructive nephrolithiasis noted.

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

There is no ultrasonographic evidence of pancreatitis in this patient. Therefore, if there are also no clinical signs of pancreatitis then the reported PSL could be a false positive caused by other source lipases especially given the concern for a possible gastric foreign body.

Recommendations are to address the dental pain/neurologic problems as planned. However, regarding the ultrasound changes:

1. Urinalysis and, if indicated based on urinalysis results, urine culture are recommended. If protein is present in an otherwise quiet sediment, protein quantification with a urine protein to creatinine ration is recommended. Power Doppler can be used to further evaluate the trigone density to help determine tissue as a nodule or mass versus debris. If there are urinary signs and surgery is elected to remove the cystolith the nodule/debris could be further investigated as well/biopsied at that time if in fact it is tissue.
2. If this patient is having signs consistent with a gastric foreign body such as vomiting, inappetence, etc. then removal of the gastric foreign body is recommended. If there are no clinical signs this may be an incidental finding that does not appear obstructive and continued monitoring can be elected.
3. FNA of the liver nodule can be considered if the patient's coagulation status is appropriate; however, the lesion does trend toward the benign in appearance and is unlikely unrelated to the presenting dental/neuro complaint. Therefore, monitoring of the nodule as well could be considered. Ultimately unless this patient has clinical signs recommendations are to address the dental/neurologic problem and then potentially depending on clinical signs consider a follow-up ultrasound of the bladder, stomach and liver nodule in 4-6 weeks.



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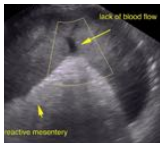
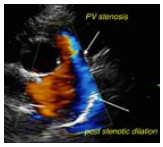
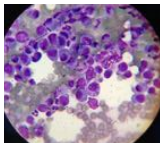
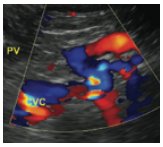

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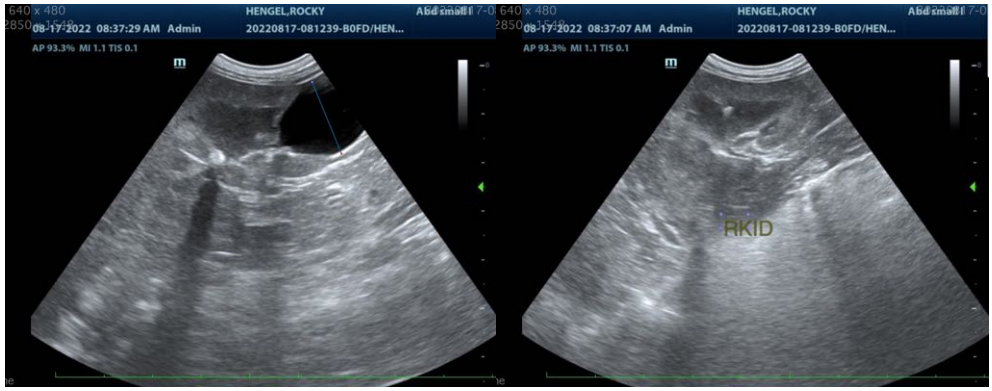

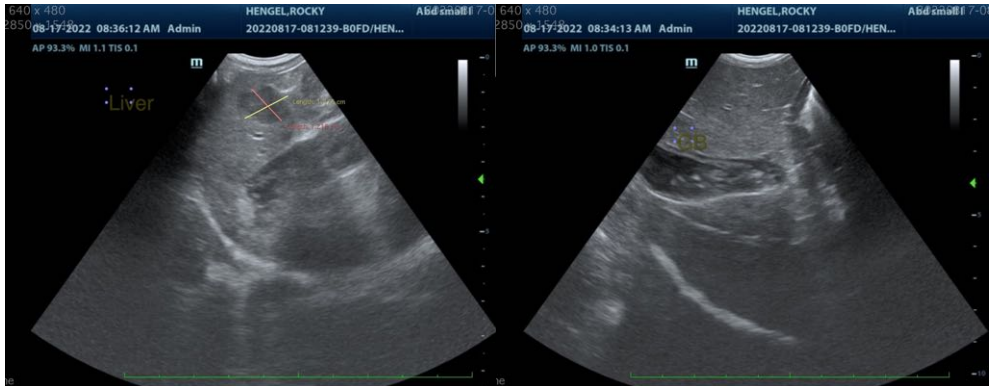

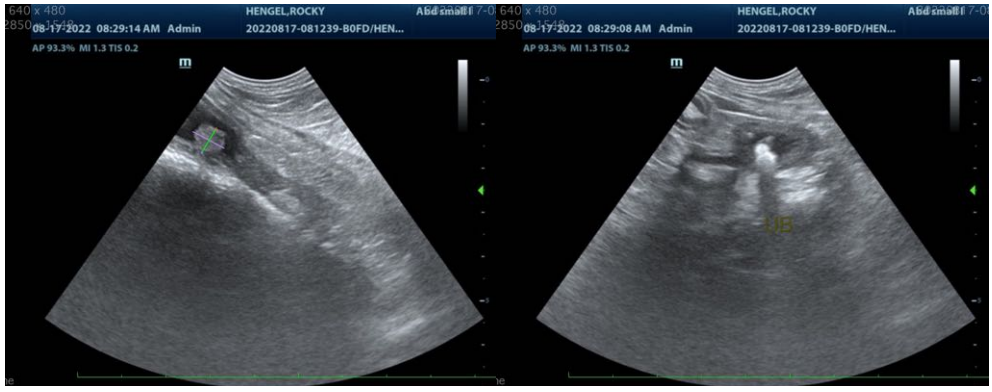

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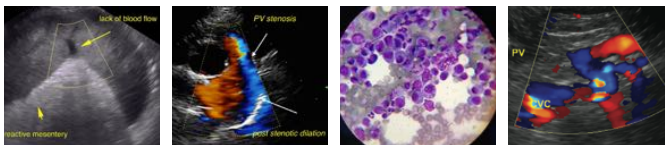

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The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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

Beth.Johnson@SonoPath.com