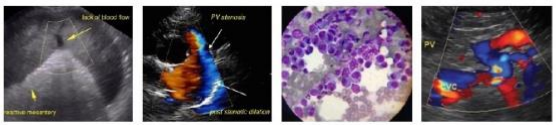

PATIENT

Rufus Schmidt

SPECIES

Canine

BREED

Miniature Schnauzer

SEX

Neutered Male

AGE

14 Years

WEIGHT

22 Pounds

INTERPRETED BY

Beth Johnson, DVM DACVIM

IMAGING PERFORMED BY

Jack Reese

HOSPITAL NAME

Willow Run VC

REFERRING VET

Molly Arnold, DVM

INVOICE

16208

DATE

6/22/22

PRESENTING CLINICAL SIGNS

History: Vomited Thursday of last week and stones were noted in vomit. Did well through rest of week and vomiting and diarrhea started yesterday and continued overnight. Concern for foreign body vs. gastroenteritis.

Abnormal PE/Chem/CBC/UA Results: Radiographs - increased soft tissue opacity in region of pylorus; uroliths Bloodwork: ALT 185 (10-125) ALP 615 (23-212)

ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN

Urinary System

Urinary bladder is adequately distended with anechoic contents. No masses or inflammatory changes are observed. The urinary bladder, trigone and visible pelvic urethra are normal in thickness with a smooth mucosal surface. Multiple shadowing cystoliths were appreciated along the dependent wall, the largest of which measures approximately 1.0 cm.

Prostate (neutered) is normal in size, echotexture and echogenicity for a neutered male.

Left kidney is normal is size (5.2 cm), shape and echogenicity. It has smooth peripheral margination. There is a normal 1:3 cortex to medulla ratio with appropriate corticomedullary distinction. There is no evidence of pyelectasia, mineral or infarcts observed.

Right kidney is normal is size (5.0 cm), shape and echogenicity. It has smooth peripheral margination. There is a normal 1:3 cortex to medulla ratio with appropriate corticomedullary distinction. There is no evidence of pyelectasia, or infarcts observed. Non-obstructive areas of mineralization/nephroliths are noted.

Adrenal Glands

Left adrenal gland is normal in size (0.55 cm at cranial pole and 0.41 cm at caudal pole), shape and overall architecture, echogenicity and echotexture. Visible surrounding vasculature appears normal.

Right adrenal gland is normal in size (0.97 cm at cranial pole and 0.45 cm at caudal pole), 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 (swollen contour) without disruption of architecture. It has a normal homogenous echotexture. Parenchyma is diffusely hyperechoic characterized by less prominent than normal portal vein walls and increased echogenicity relative to the spleen and falciform fat. No focal lesions are observed. Visible vasculature and biliary tree appear normal without distension or congestion.

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.

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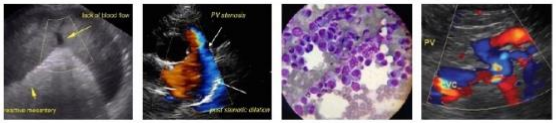

THE FOCAL ZONE
IMAGING PERFORMED BY
289-808-2608 info@thefocalzone.com

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Gastrointestinal

Fundic mucosal hypertrophy with hyperechoic mucosa and some mucosal remodeling is noted. There is no loss of mural detail. Layering is normal. There is mild luminal fluid accumulation combined with some echogenic grit/sand, potentially residual from the reported rock ingestion. No evidence of masses/nodules. There is no evidence of a foreign body or gastric outflow obstruction.

The visible small intestine demonstrates areas of thick muscularis layer relative to mucosa (disruption of the normal 1:3 muscularis:mucosa ratio). Small intestinal submucosa is slightly irregular, thick and hyperechoic, without evident loss of layering appreciated. The lumen of the small intestine is diffusely mildly fluid distended without evidence of an obstructive pattern, plication and/or visible foreign material.

The visible colon is normal in wall thickness 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

No appreciable free fluid is noted in these images.

A mesenteric lymph node is enlarged with swollen irregular capsular contour and loss of normal length to width ratio (rounded in shape). Nodes are hypoechoic with loss of normal parenchymal detail.

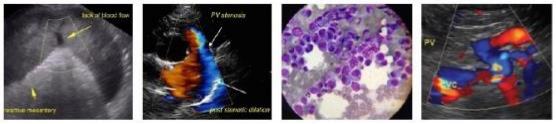
ULTRASONOGRAPHIC FINDINGS

Primary Findings

- Gastroenteritis, consistent with irritation secondary to dietary indiscretion or intolerance, infection (bacterial, viral, other), parasitic or protozoal disease, toxin, other metabolic disease such as pancreatitis, other. Microulceration cannot be ruled out. The thick muscularis is a finding that has been reported with infiltrative bowel disease, including both benign inflammatory disease, as well as infiltrative neoplasia, such as lymphoma.
- Mesenteric lymphadenopathy with some loss of architecture and loss of normal shape, concerning for infiltrative neoplasia, however, reactive lymph node cannot be ruled out without tissue sampling.

Secondary Findings

- Urinary bladder cystoliths
- Non-obstructive nephrolithiasis bilaterally in the kidneys
- Hyperechoic hepatomegaly. This appearance is most consistent with a benign steroid (endocrine) hepatopathy or reactive or idiopathic hepatopathy. Infiltrative neoplasia such as round cell neoplasia is also possible but considered less likely.



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- 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.

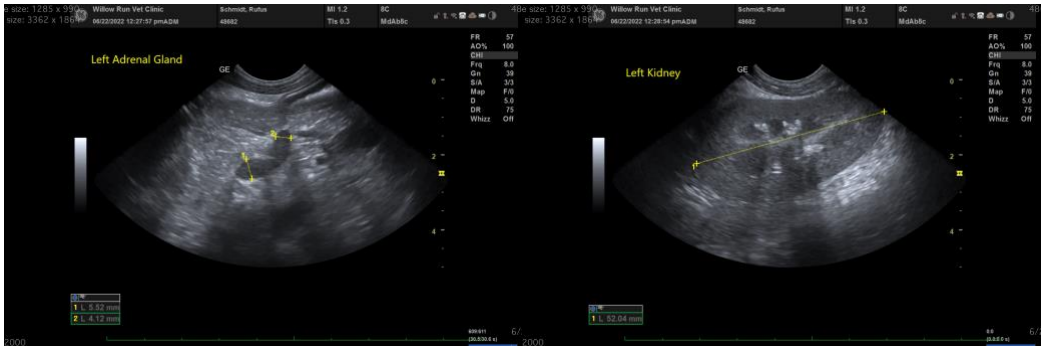
INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

These images are most suggestive of diffuse gastroenteritis. Microulceration cannot be ruled out. This is all likely secondary to the rock ingestion, therefore, continued therapy of gastroenteritis with antiemetics and gastroprotectants, including potentially sucralfate, if not already being administered, as well as an appetite stimulant, if necessary, and probiotic for the diarrhea, are recommended. Empirical deworming with a 5-day course of Panacur is also recommended.

Given the thick muscularis and lymphadenopathy, however, there is some concern that potentially the rock ingestion was in-fact pica, potentially secondary to infiltrative gastroenteritis disease, an therefore, gastrointestinal disease work up is recommended beginning with a gastrointestinal malabsorption panel (including cobalamin, folate, TLI and PLI) to Texas A&M GI Laboratory is recommended for further evaluation of GI and pancreatic function.

A fine needle aspirate of the enlarged mesenteric lymph node is recommended, if coagulation status is appropriate. Ultimately, however, biopsies of the gastrointestinal tract may be necessary to definitively diagnose the infiltrative process, and therefore, medically manage the clinical signs, if clinical signs don't resolve following medical management of gastroenteritis.

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.



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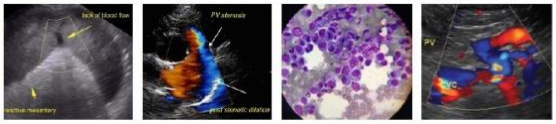

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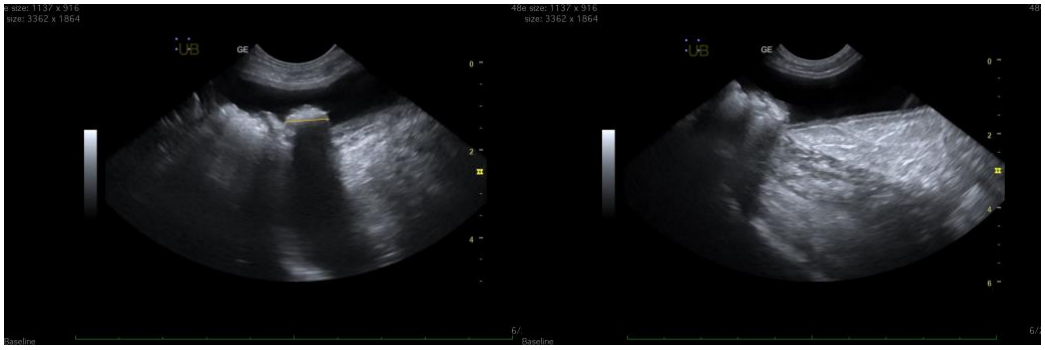

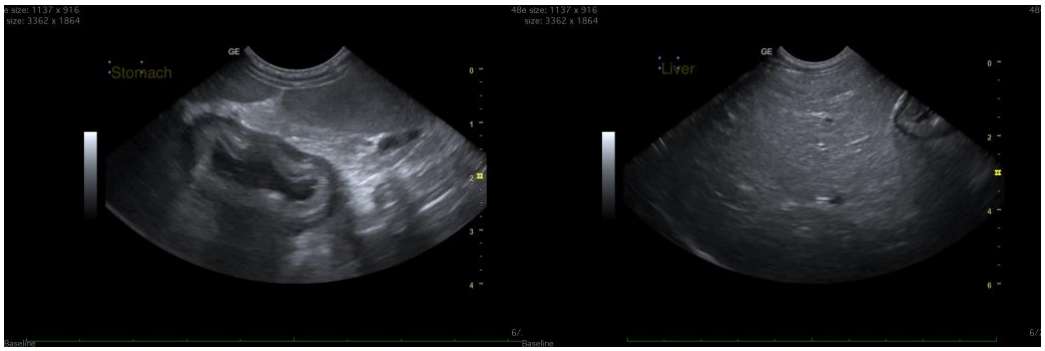

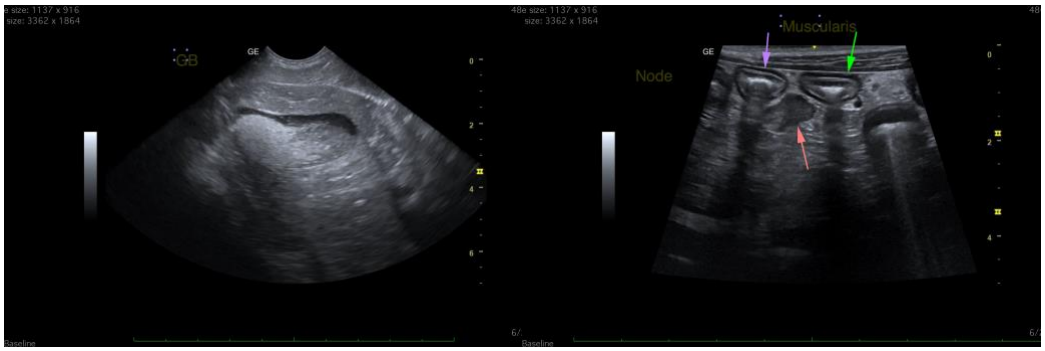

The information and recommendations provided are based on the images presented by the referring veterinarian. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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