SonoPath
Clinical Sonography & Telecytology
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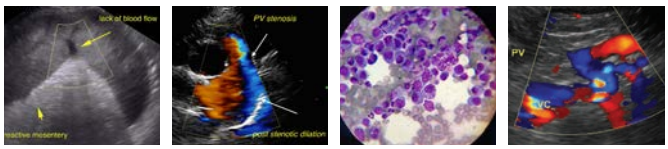


SonoPath.com™
1-800-838-4268 info@sonopath.com

PATIENT

Charlie Denham

SPECIES

Canine

BREED

Australian Cattle Dog X

SEX

Spayed Female

AGE

6

WEIGHT

42

INTERPRETED BY

Beth Johnson, DVM DACVIM

IMAGING PERFORMED BY

Dr. Christensen

HOSPITAL NAME

Tranquility VC

REFERRING VET

Dr. House

INVOICE

43902

DATE

7/12/23

PRESENTING CLINICAL SIGNS

Anorexic since got into bird seed on 7/10. Tremors and QAR.
Abnormal PE/Chem/CBC/UA Results: T4 , 0.5, HCT= 35.6, Glob= 5.2, Chol= 476. Otherwise cbc, chem, snap CPL WNL.

ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN

Urinary System

The urinary bladder is moderately distended with anechoic contents. No masses, inflammatory changes, echogenic sediment or cystoliths are observed. The urinary bladder, trigone and visible pelvic urethra are normal in thickness with a smooth mucosal surface.

The right kidney is normal in size (5.89 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. A hyperechoic band parallel to the corticomedullary border is present.

The left kidney is normal in size (5.61 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. A hyperechoic band parallel to the corticomedullary border is present.

Adrenal Glands

Adrenal glands are small (flattened contour). Corticomedullary structure is unremarkable. Visible surrounding vasculature appears normal. The left adrenal gland measures 0.36 cm at the cranial pole and 0.48 cm at the caudal pole. The right adrenal gland measures 0.31 cm at the cranial pole and 0.36 cm at the caudal pole.

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. Multifocal mineral foci are noted. Splenic vasculature appears normal.

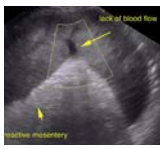
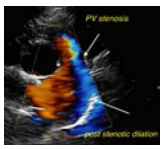
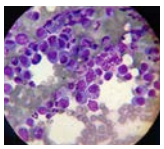
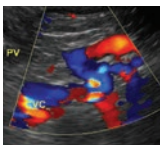
Liver

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.

The gallbladder is non-distended in size. The wall is smooth without visible thickening. Luminal contents are primarily anechoic. There is no evidence of cystic or common bile duct dilation.

Gastrointestinal

The stomach wall is normal in thickness (canine < 0.5 cm and feline < 0.4 cm) and layering. The lumen of the stomach is mildly distended with fluid, as well as echogenic nonshadowing luminal contents and gas consistent with normal ingesta/chyme. There is no evidence of obstruction, foreign material or infiltrative disease. Pyloric outflow tract appears patent.

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The visible small intestines are normal in wall thickness and layering. Bowel is diffusely mildly fluid distended. Additionally, the bowel diffusely appears to contain granular/mineral/sand-like debris, or in this patient's case, potentially bird seed. The bowel is diffusely mildly distended without distinct focal evidence of an obstructive pattern, plication, and/or visible foreign material. Small intestinal hyperperistalsis is noted. In several of the loops, there is some acoustic shadow, likely associated with gas and bird seed combined, but the changes are diffuse, again without evidence of an obstructive pattern.

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

Pancreas

The pancreatic parenchyma is appropriately isoechoic to surrounding tissue. Visible capsule is smooth and normal in contour. 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

- **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. The appearance of the bowel is a diffuse change and not suggestive of an obstruction. However, there does appear to be foreign material (i.e., bird see versus other) moving through the GI tract.

- **Flat adrenal glands** – This can be a normal patient variant and/or a sign of exogenous cortisol administration. If exogenous steroids are not being administered, hypoadrenocorticism (either relative or absolute) should be considered.

- **Bilateral medullary rim sign -** This finding is of unknown clinical significance and can be a normal variant, often idiopathic. Medullary rim sign can be present with renal disease including FIP, lymphoma, hypercalcemic nephropathy, Leptospirosis, tubular disease, other and should be interpreted in combination with other more specific indications of kidney disease such as isosthenuria, proteinuria, azotemia, etc. This is a common incidental finding in patients with diabetes mellitus.

- **Hyperechoic hepatomegaly -** This appearance is non-specific and most consistent with a benign steroid (endocrine) or vacuolar hepatopathy or reactive or idiopathic hepatopathy. Inflammatory and/or infiltrative disease (such as round cell neoplasia) are also possible, but considered less likely.

- **Spleen mineralization –** This is a benign change but can be associated with endocrinopathies, especially hyperadrenocorticism.

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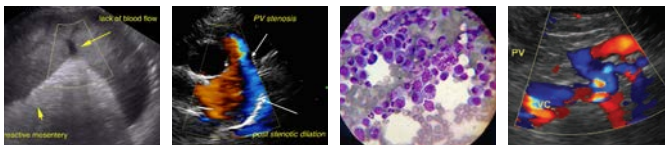

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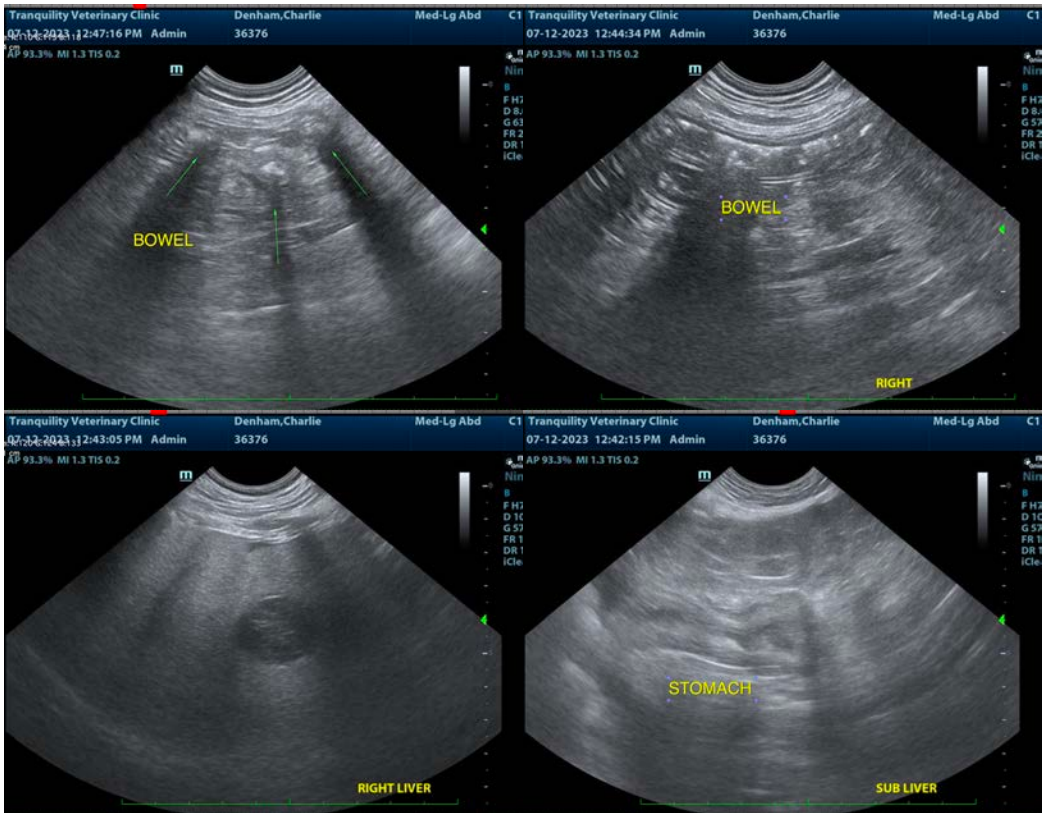
INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

At this time, based on this patient's history combined with the above changes, supportive/symptomatic medical management of suspect gastroenteritis/dietary indiscretion is recommended in the form of fluid therapy, antiemetics, gastroprotectants, etc. If diarrhea develops, a probiotic such as Visbiome or Proviable could also be helpful.

Given the flat adrenal glands, a baseline cortisol is recommended. If baseline cortisol is less than 2, a full ACTH stimulation test is recommended to rule out hypoadrenocorticism.

Given the mild kidneys changes, if not recently evaluated full evaluation of the urinary tract is recommended, including a urinalysis and, if indicated based on urinalysis results, urine culture. If protein is present in an otherwise quiet sediment, protein quantification with a urine protein to creatinine ratio is recommended.

Diagnostic and/or therapeutic recommendations beyond that are dependent on patient's improvement versus progression, results of the above, etc. If, however, clinical signs persist, recheck imaging may be indicated to help assess progression versus improvement of the gastrointestinal changes described in this study.



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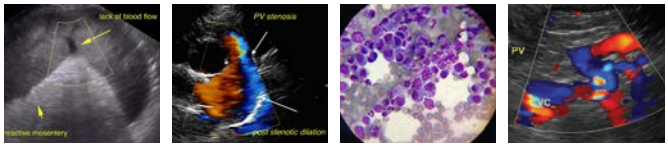

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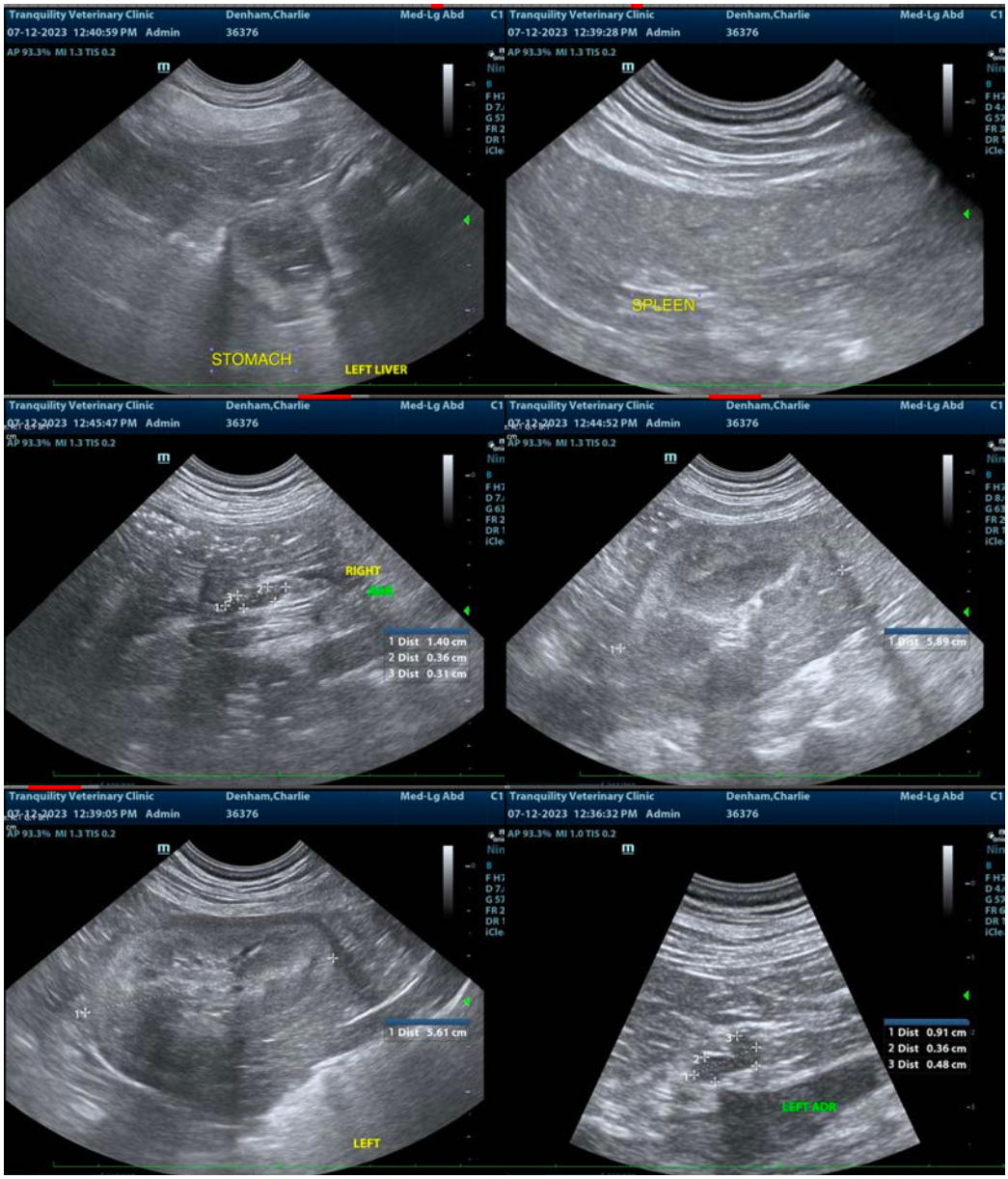

The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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
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