



PATIENT	PRESENTING CLINICAL SIGNS
Snowball Knapp	History” P was seen at rDVM on Friday for NAR/lethargy, they sent out blood work. P is now breathing hard, has white gums, and is lethargic. Belly seems distended.
SPECIES	Abnormal PE/Chem/CBC/UA Results: CBC: WBC 20.13, NEU 17.03, RBC 1.25, HGB 2.9, HCT 7.9%, PLT 11,MPV 5.8. 4DX: neg x4
Canine	PE findings: pale/white gums, petechiae over dorsal tailbase, on abdomen, and front/back legs
BREED	Lacuna pathology report: Microscopic Description
Pomeranian Mix	Three scanned blood films are evaluated. The red cell density is markedly decreased. There is mild anisocytosis with no significant polychromasia. Leukocytes appear to be mildly increased in number and are concentrated at the feathered edge. Leukocytes consist predominantly of segmented neutrophils (see differential below). Leukocyte morphology is within normal limits. Platelets are severely decreased with only rare platelets observed.
SEX	Interpretation
Intact Male	Marked anemia with no evidence of regeneration Mild neutrophilia with a left shift, lymphopenia, monocytosis Severe thrombocytopenia Comments
AGE	Thank you for the submission and relevant clinical history. There is a marked anemia with no obvious evidence of regeneration at this time.
11 years	Interpret in light of continued trends and a reticulocyte count which is more accurate than smear evaluation. There is no obvious spherocytosis or agglutination however, IMHA (PIMA if the anemia remains non-regenerative) would still be a primary consideration given the degree of the anemia – especially if the clinical onset of weakness was sudden. The leukogram is consistent with inflammation in combination with stress. Marked thrombocytopenia is confirmed, the degree of which is most consistent with immune-mediated thrombocytopenia. Atypical cells and etiologic agents were not observed. Consider screening for relevant regional vector borne pathogens, underlying conditions (inflammatory/neoplastic), and recent therapeutics that could result in secondary IMHA/ITP.
WEIGHT	Report written by: Julie Tomlinson, DVM, DACVP
8.98 kg	
INTERPRETED BY	
Andrea Nicastro, DVM, Diplomate ACVIM (<i>Small Animal Internal Medicine</i>)	
IMAGING PERFORMED BY	
Dr. Isermann and Dr. Van Nieuwal	
HOSPITAL NAME	
Animal EH Volusia	Findings Lateral and ventrodorsal radiographs of the whole body dated February 26, 2023 are available for review. Thorax: The cardiac silhouette and pulmonary vasculature are unremarkable. The pulmonary parenchyma is unremarkable. There is no evidence of pulmonary interstitial infiltrates. No pulmonary nodules are seen. The pleural space and mediastinal structures are unremarkable. Abdomen: The stomach is moderately distended with gas and contains amorphous, heterogeneous soft tissue opacity. Best identified on the right lateral projection, there is a formed, rectangular soft tissue opacity measuring approximately 4.4 by 1.5 cm within the dorsal aspect of the stomach. The small intestine contains soft tissue opacity and gas. It is relatively uniform in diameter and within normal limits for size. The colon contains unformed fecal material. The abdominal serosal detail is within normal limits. The liver is enlarged. The spleen is not well seen and incompletely evaluated. The kidneys and urinary bladder are
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unremarkable. The osseous structures are within normal limits aside from spondylosis deformans.

Conclusion

1. Moderate gastric distention with amorphous, heterogeneous soft tissue contents. Consider food and/or foreign material. The described angular soft tissue opacity seen within the gastric lumen on one of the projections could represent a gastric foreign body, though atypical ingesta/treat can have a similar appearance.
2. Otherwise unremarkable gastrointestinal structures.
3. Hepatomegaly. This is a nonspecific finding. Differentials include endocrine/vacuolar hepatopathy, hepatitis, or hepatic neoplasia.
4. Unremarkable thorax.

Recommendations

The appearance of the soft tissue opacity within the stomach may represent normal ingesta/food; however, some of the material has a slightly atypical appearance and foreign material is also considered. This finding should be correlated with the timing of any meal ingestion prior to radiographs. Initial supportive therapy could be attempted. Repeat three-view abdominal radiographs could be performed after a confirmed fast to reevaluate gastric contents and monitor for gastric emptying.

Read By:

Dr. Logan Strohm, DVM, Diplomate ACVR

ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN

Urinary System

The urinary bladder wall is normal in thickness and the mucosal surface is smooth. The bladder lumen is moderately distended with anechoic urine. No masses, inflammatory changes or calculi are observed. Ureteral papillae and visualized portion of the proximal urethra, visible to a depth of 1-2 cm, are normal.

The prostate is normal in size (0.67 cm in width) and shape. Parenchyma is homogenous. The prostatic urethra appears normal without evidence of dilation or obstruction.

The left kidney is normal in size (4.81 cm in length) with a normal shape, architecture and smooth peripheral margins. There is a normal 1:3 cortex to medulla ratio with moderate loss of corticomedullary distinction. Hyperechoic shadowing diverticular foci are visualized. A few small cortical cysts are seen. There is no evidence of pyelectasia, infarcts or hydroureter.

The right kidney is normal in size (5.17 cm in length) with a normal shape, architecture and smooth peripheral margins. There is a normal 1:3 cortex to medulla ratio with moderate loss of corticomedullary distinction. Hyperechoic shadowing diverticular foci are visualized. A few small cortical cysts are seen. There is no evidence of pyelectasia, infarcts or hydroureter.

Adrenal Glands

The region of the adrenal glands is evaluated. No obvious pathology is observed.

Spleen

The spleen is subjectively normal in size with a normal capsular contour. There is appropriate echogenicity and echotexture. No focal lesions are observed. Splenic vasculature is normal.

Liver

The liver is subjectively enlarged with slightly swollen peripheral contours. The parenchyma is isoechoic relative to the spleen and diffusely homogeneous in appearance. No distinct focal lesions are observed. Vascular and biliary tracts are of normal volume with no evidence of congestion.

The gall bladder is distended. The wall is normal in thickness. A moderate to large amount of aggregated echogenic, suspended sludge in a partially stellate pattern is observed within the lumen. The cystic and common bile ducts are normal/not seen.

Gastrointestinal

The gastric lumen is moderately distended with ingesta. The gastric wall and pylorus are normal in thickness with a normal layering pattern. The pyloric outflow tract is patent. The small intestinal lumen is segmentally dilated with chyme. The small intestinal wall thickness is normal with a normal layering pattern and appropriate mural detail. Discreet masses are not identified. The colonic wall is normal. There is no evidence of an obstructive pattern.

Pancreas

The region of the pancreas is isoechoic relative to surrounding omental fat. No obvious parenchymal abnormalities are observed. There is no evidence of regional inflammation or effusion.

Free Abdomen

Trace free fluid is observed. The abdominal lymph nodes are normal/not visible.

ULTRASONOGRAPHIC FINDINGS

Primary Findings

- Gall bladder changes are most consistent with a developing mucocele.
- Trace ascites

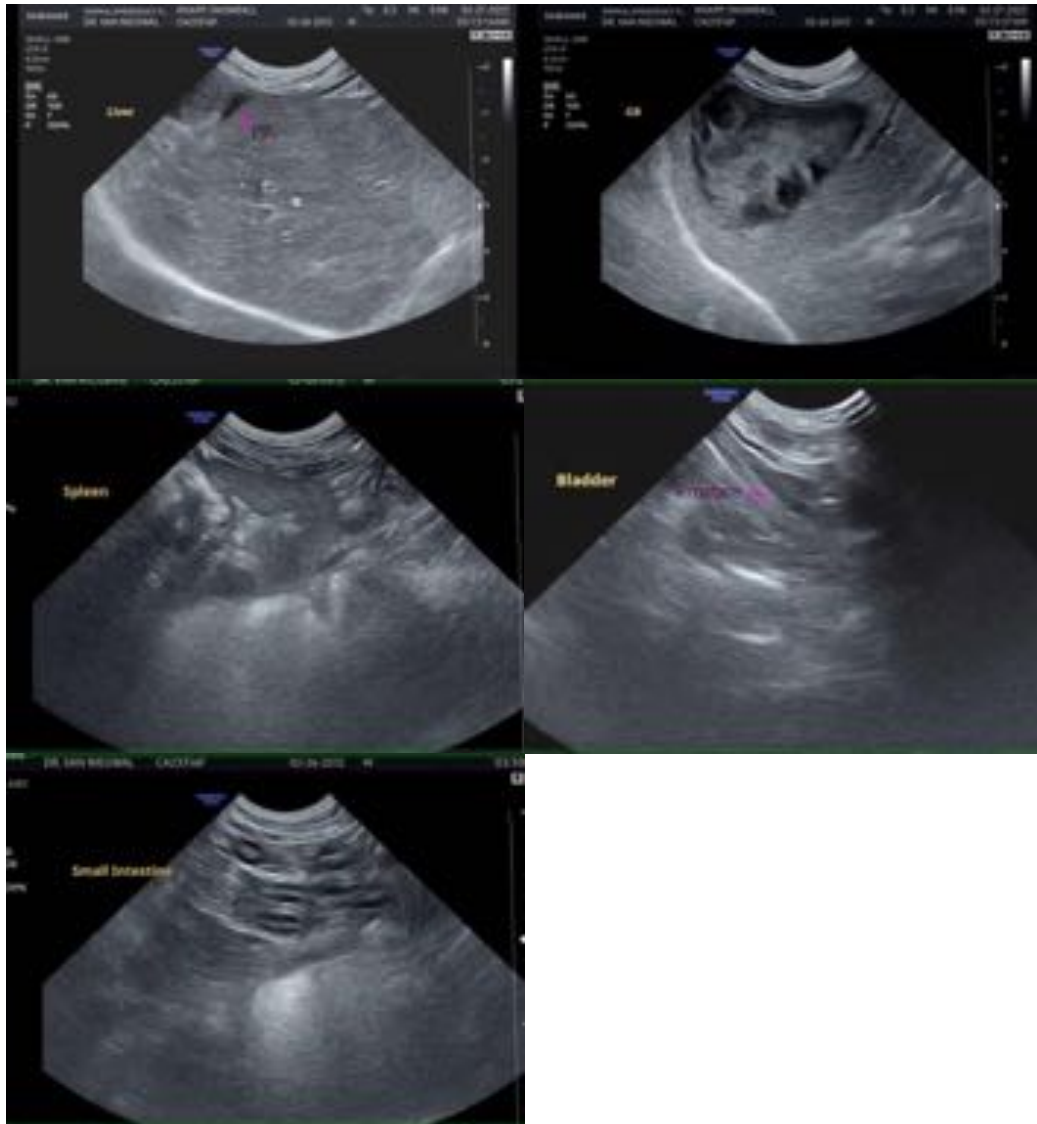
Secondary Findings

- Suspected benign diffuse hepatopathy. Vacuolar hepatopathy (i.e., idiopathic/endocrine) is the top differential. However, inflammatory disease or infiltrative neoplasia cannot be completely excluded. Neoplasia is considered less likely. Correlation with the patient's liver values is recommended.
- Bilateral chronic renal changes with dystrophic mineralization

*An obvious cause for the patient's anemia and thrombocytopenia is not identified in this study. Considerations include immune-mediated disease, blood loss (less likely), bone marrow disease, infectious disease (i.e., tick-borne), other.

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

- A comprehensive tick panel, including PCR and serology (submission to North Carolina State University's Vector Borne Disease Diagnostic Lab is recommended. <https://cvm.ncsu.edu/research/labs/clinical-sciences/vector-borne-disease>)
- Also consider a bone marrow aspirate, particularly if the anemia remains nonregenerative.
- While awaiting test results, supportive care, including blood transfusions, may be warranted.
- Given the gall bladder changes, Ursodeoxycholic acid (Ursodiol) is recommended. Serial sonographic monitoring (e.g., every 4-6 weeks) of the gall bladder is recommended to assess for progression to a fully formed mucocele. If progression occurs, a cholecystectomy may be warranted.



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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