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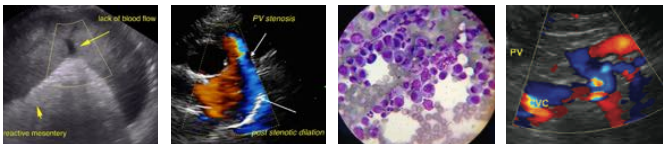
Clinical Sonography & Telecytology
EDUCATIONAL TELECONSULTATION SERVICES™



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

PATIENT
Rilla Kaiser

SPECIES
Canine

BREED
Cavalier King Charles Spaniel

SEX
Spayed Female

AGE
11 years

WEIGHT
5.4 kg

INTERPRETED BY
Eric Lindquist, DMV DABVP, Cert. IVUSS

IMAGING PERFORMED BY
Dave Stasiuk RDMS, RDCS

HOSPITAL NAME
Chris Belan VS

REFERRING VET
Dr. Qi

INVOICE
91908

DATE
9/21/21

PRESENTING CLINICAL SIGNS

History: Not eating at all.

ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN

Urinary System

The **urinary bladder**, trigone, and pelvic urethra presented normal thicknesses and normal tone. The ureters were not visible which is normal. No uroliths or sediment were visualized and anechoic urine was present. No evidence of inflammatory or neoplastic changes was noted. Ureteral papillae were normal.

The **kidneys** revealed normal size and structure, corticomedullary definition and ratio for this age. The cortices presented largely uniform texture with normal echogenic relationship to liver and spleen. Medullary structure differed distinctly from the cortex and no evidence of pelvic dilation was present. The capsules were acceptably uniform without significant irregularities. Slight mineralization was noted in the kidneys. The right kidney measured 4.72 cm. The left kidney measured 4.41 cm.

Adrenal Glands

Both **adrenal glands** were visualized and recognized as having largely normal shape, size, position and acceptable echogenicity for this age group and breed. Some heterogeneity was noted within the adrenal parenchyma without concerning capsular distortion. These changes are likely age related but should be monitored by sonogram should the patient be suspected of having adrenal disease. The right adrenal gland measured 0.42 cm. The left adrenal gland measured 0.41 cm.

Spleen

The **spleen** revealed undulating contour and was folded upon itself caudally. Micronodular changes were present.

Liver

The **liver** was uniformly swollen with minor, excessive gallbladder debris and over distension with dependent and suspended bile without evidence of overt mucocele formation. However, excessive sludge was present. The liver presented coarse architecture with mildly increased portal markings and subtle, mixed echogenic changes. This is consistent with vacuolar hepatopathy and some level of remodeling and history of inflammatory component. There was no overt suspicion of neoplasia.

Gastrointestinal

The **gastric** wall presented concentric thickening with loss of mural detail and echogenic mucosal remodeling. There were areas of hypertrophied muscularis. Regional lymphadenopathy was present. This is strongly suggestive for underlying gastric neoplasia such as lymphoma.

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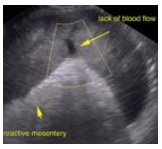
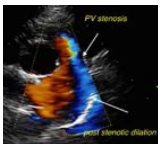
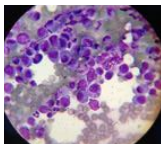
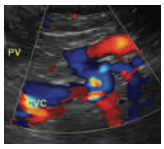

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Pancreas

Heterogenous **pancreatic** changes were noted with undulating contour. This is consistent with secondary inflammation that is likely induced by the gastric pathology.

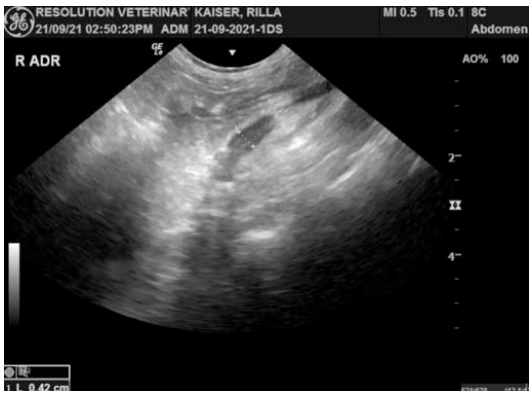
ULTRASONOGRAPHIC FINDINGS

Gastric infiltrative pattern, regional lymphadenopathy.

Micronodular spleen.

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

Severe gastritis is possible; however, there is a strong concern for gastric carcinoma or lymphoma. FNA of the gastric wall and regional lymph nodes is recommended. However, cytology may not be adequate for a definitive diagnosis. Full thickness gastric and lymph node biopsies would be ideal. FNA of the spleen is also warranted given the its irregularity and micronodular changes. Endoscopy is also an option, but would not be able to sample the lymph nodes. If gastric neoplasia is confirmed the following information may prove helpful.



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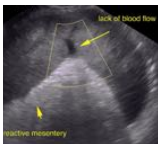
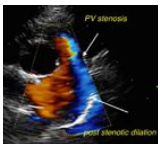
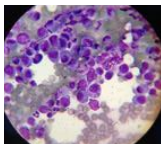
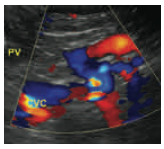

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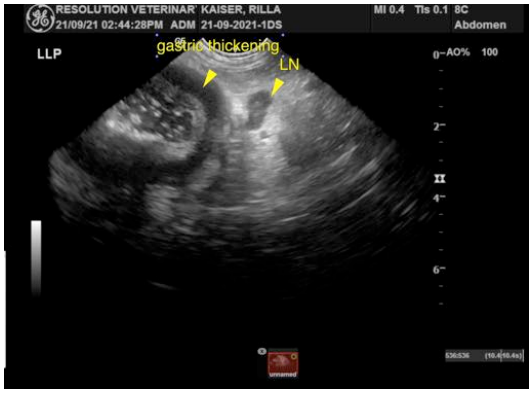
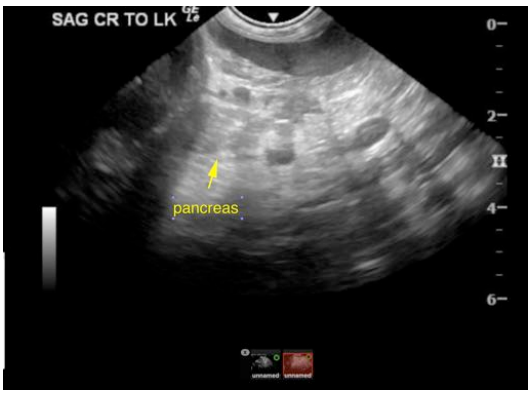
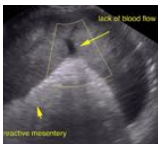
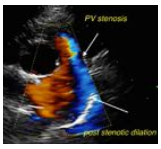
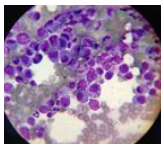
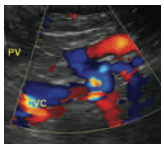




The information and recommendations provided are based on the images presented by the referring

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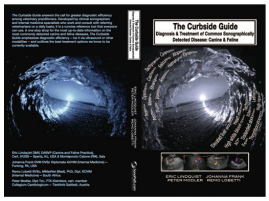
veterinarian. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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.

Eric Lindquist, DMV, DABVP, Cert. IVUSS, CEO of SonoPath.com
info@SonoPath.com



The following is an applicable excerpt from the *Curbside Guide to Diagnosis & Treatment of Sonographic Disease* offered by SonoPath.com Lindquist, Frank, Lobetti, and Modler.

An essential quick guide for every general practitioner and sonographer.

https://sonopath.com/products/curbside-guide-editing-due-release-12012015

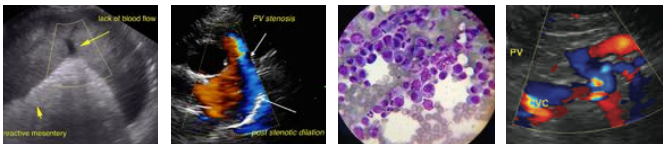
Canine Gastric Neoplasia

http://www.sonopath.com/GastricNeoplasia

Short axis of the stomach in a dog with gastric lymphosarcoma during ultrasound guided biopsy. The automated core biopsy needle trajectory is seen as a hyperechoic line. Note the severe asymmetric circumferential wall thickening of the stomach with transmural loss of wall layering meets neoplastic criteria.

Description: Gastric neoplasia is uncommon in dogs, accounting for less than 1% of canine neoplasms. Up to 71% of malignant gastric tumors in dogs are adenocarcinomas and an additional 10% are due to lymphoma (LSA). Gastric LSA affects median age dogs of 6-7 years. Other primary gastric tumors include leiomyoma, leiomyosarcoma, extramedullary plasmacytoma, and fibrosarcoma. Although less common, metastasis to the stomach can occur secondary to adenocarcinomas, hemangiosarcomas, mast cell tumors, and LSA of other primary sites.

Clinical Signs: Gastric neoplasia incites nonspecific signs that are frequently seen either when gastrointestinal foreign bodies are present or with the following diseases: inflammatory bowel disease, pyloric stenosis, ulcerative disease, pythiosis, and viral GI disease. The most common signs associated with gastric neoplasia are chronic vomiting (particularly post-prandial), hematemesis weight loss, and



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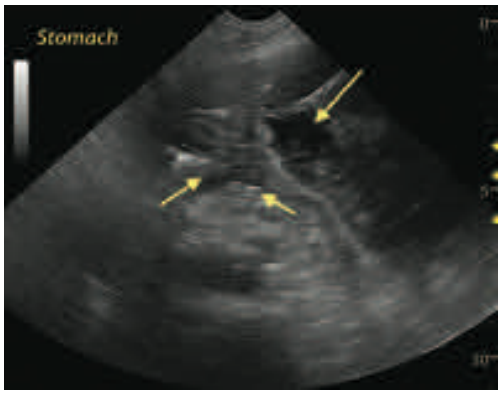
anorexia; diarrhea and melena are also typical. Tenesmus and hematochezia may be observed in cases of large bowel involvement. Abdominal pain may also occur.

Diagnostics: Blood analysis results may be normal or indicate a spectrum of abnormalities. Gastric neoplasia may present with hypochromic microcytic anemia due to chronic blood loss; the latter can be confirmed by the presence of occult blood in the feces. Icterus may occur due to infiltrative post hepatic obstruction of the bile duct where it enters the duodenum. Hypochloremia and hypokalemia may be present in cases of protracted vomiting. Hypoproteinemia may occur if there is protein loss due to small bowel involvement or secondary to chronic blood loss in the stomach. A preliminary diagnosis of gastric neoplasia can be achieved by utilizing contrast radiography, ultrasonography, and endoscopy. Contrast radiographic studies may reveal mural thickening, filling defects, loss of normal rugal folds, and delayed pyloric outflow.

To achieve a definitive diagnosis, one must obtain a biopsy via laparotomy, an ultrasound-guided procedure, or endoscopy. Laparotomies are considered to be the most reliable means of arriving at a definitive diagnosis as they produce full thickness samples of the abnormal tissue. Less invasive sampling can frequently provide adequate tissue for a diagnosis via an ultrasound-guided needle biopsy or fine needle aspiration (FNA).

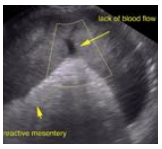
Treatment: Specific treatment of gastric neoplasia depends on the diagnosis of the underlying tumor. Medical management should be oriented toward correcting the acid/base disturbances with fluid support, gastric protection (famotidine 0.5 mg/kg PO or IV BID, or omeprazole 0.7 mg/kg PO Q24hr as well as sucralfate 1 g PO TID at least 1 hour prior or after the ingestion of food and other medication), and anti-emetic therapy (maropitant citrate 1 mg/kg SC once daily for up to 5 days). Severe regenerative anemia secondary to ulcerative lesions is rare but may, when present, necessitate transfusion therapy. If a surgical bypass or partial gastric resection is performed, post-operative nutritional support should entail a bland, low-fat diet for the 24 hours following surgery in conjunction with anti-emetics and fluids comprised of a balanced electrolyte solution. Broad-spectrum antibiotics that are effective against *Helicobacter*, a common complicating factor, are indicated and may also be necessary during neutropenic episodes secondary to chemotherapy. Once a firm diagnosis of gastric neoplasia has been made, referral to a veterinary oncologist is appropriate.

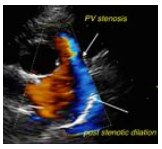
Conclusion: Gastric adenocarcinoma carries a poor to grave prognosis; the disease is usually advanced by the time a diagnosis has been made. Gastric LSA has a variable prognosis, as do the other tumors that can occur in the stomach.

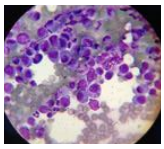
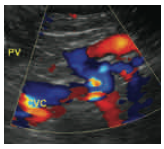


Long axis oblique view of the stomach (pyloric outflow) in a dog with gastric adenocarcinoma. Note the severe focal wall thickening with pseudolayering typical of adenocarcinoma (middle arrow). Also note the presence of hyperechoic gas (small arrow) outside the stomach and scant peritoneal effusion consistent with perforation as a sequel to the neoplastic infiltrate. Long arrow: gastric lumen and fluid accumulation.

References:





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