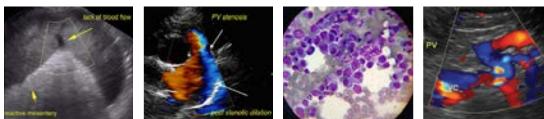

PATIENT

Sissy Engelmann

SPECIES

Canine

BREED

Chihuahua X

SEX

Spayed Female

AGE

14 Years

WEIGHT

6.6 Pounds

INTERPRETED BY

Eric Lindquist, DMV

DABVP, Cert. IVUSS

IMAGING PERFORMED BY

Jenna Walsh, CVT

HOSPITAL NAME

Edgewood AC

REFERRING VET

Dr. Kimball

INVOICE

38082

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PRESENTING CLINICAL SIGNS

Decreased appetite, intermittent vomiting, blood and mucus on stool Thickened loops of bowel on abdominal palpation Current Medications Cerenia Primary Question/Differential to Be Answered in This Exam Pathology of kidneys? Reason for thickened bowels
Abnormal PE/Chem/CBC/UA Results: BUN 101 Creatinine 3.0 ALT-310

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 were noted. Ureteral papillae were normal.

The **right kidney** was severely dystrophic in shape and small in size. The right kidney measured 2.45 cm. Chronic interstitial nephrosis pattern with a 4.0 mm cyst at the caudal pole and embedded calculi disrupting the renal pelvis. It is unlikely that the right kidney is functional. Blood flow to the right kidney was subnormal.

The **left kidney** presented moderate degenerative changes with thickened irregular cortices. Corticomedullary and pelvic calculi noted, non-obstructive. Minor inflammatory pattern noted around the left kidney. The left kidney measured 3.43 cm. Slight infarcts noted at the caudal pole of the left kidney with minor inflammatory pattern. Blood flow to the left kidney appeared to be adequate on color doppler assessment.

Adrenal Glands

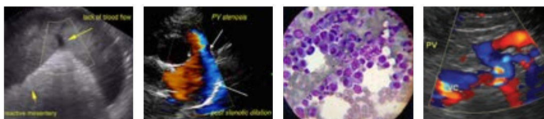
Both **adrenal glands** were visualized and recognized as having normal shape, size, position and echogenicity for this breed. The phrenic vasculature, glandular echogenicity and detail were unremarkable. Capsule, cortex, and medullary definition were normal for this age patient. The right adrenal gland measured 1.5 cm x 0.74 cm at the cranial pole and 0.45 cm at the caudal pole. The left adrenal gland measured 1.76 cm x 0.45 cm at the caudal pole and 0.51 cm at the cranial pole.

Spleen

The **spleen** presented a smooth homogeneous parenchyma hyperechoic to liver and renal cortical parenchyma. The capsule was smooth without noticeable expansion or deviation from within the spleen or adjacent pathology. The splenic vasculature demonstrated normal volume without signs of congestion or thrombosis. No sonographic evidence of acute or chronic inflammatory, neoplastic, or infarctual changes were noted.

Liver

The **liver** images from right and left intercostal as well as subcostal views revealed subjectively normal liver size, contour, and structure. Some age-related parenchymal remodeling was noted but likely not clinically significant at this time. Hypoechoic non-disruptive nodular changes noted. Vascular and biliary tracts were of normal volume and no evidence of congestion was noted. The gallbladder presented some dependent debris with essentially normal contour. The cystic and common bile ducts were normal. No overt evidence of active inflammatory, infiltrative or regenerative pathology was noted but should



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be paired with current or past LE elevations regarding any clinical significance to this presentation. The hepatic lymph nodes were unremarkable.

Gastrointestinal

The **gastrointestinal** presentation revealed mild uniform prominence of the gastric mucosa as well as areas of "ropey" small intestinal wall with slight disruption of the normal 1:3 muscularis/mucosal ratio. Intestinal wall thickness measured 0.38 cm. Areas of muscularis hypertrophy noted. The intestinal submucosa was slightly irregular, thickened and hyperechoic suggestive of low grade, chronic disease. No concerning lymphadenopathy was visible. No evidence of obstruction was present. Chronic inflammatory bowel disease is likely with a low possibility of an early neoplastic event such as lymphoma. Full thickness tissue biopsies via open laparotomy, ideally guided by intraoperative ultrasound in order to obtain the most representative mural sample, would be necessary to rule out this possibility.

Pancreas

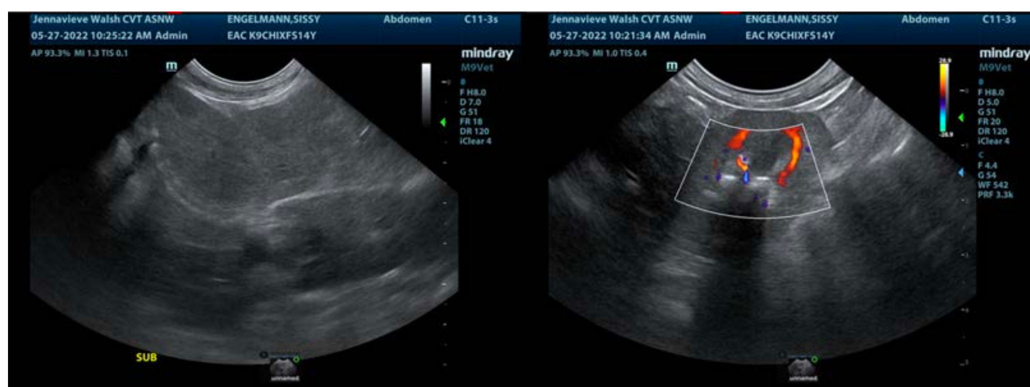
The base and limbs of the **pancreas** were observed to be largely isoechoic to surrounding omental fat. Some parenchymal remodeling, however, with mild deviation from curvilinear normalcy was observed. Pancreatic duct and capsular irregularities were present consistent with age related changes. If pain upon imaging (+ Murphy sign) was present or if the patient is focally painful in subxyphoid palpation then low-grade smoldering chronic pancreatitis should be suspected.

ULTRASONOGRAPHIC FINDINGS

- End stage dystrophic right kidney with low-grade chronic nephritis pattern in the left kidney
- IBD GI pattern.

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

I'm most concerned about long-term viability of the kidneys in this patient, particularly that of the left kidney. 72-hour IV fluid protocol, GI protectants, urine culture and sensitivity (if any inflammatory sediment is present) as well as blood pressures all recommend and reassessment of the clinical status. Prognosis long-term is guarded.



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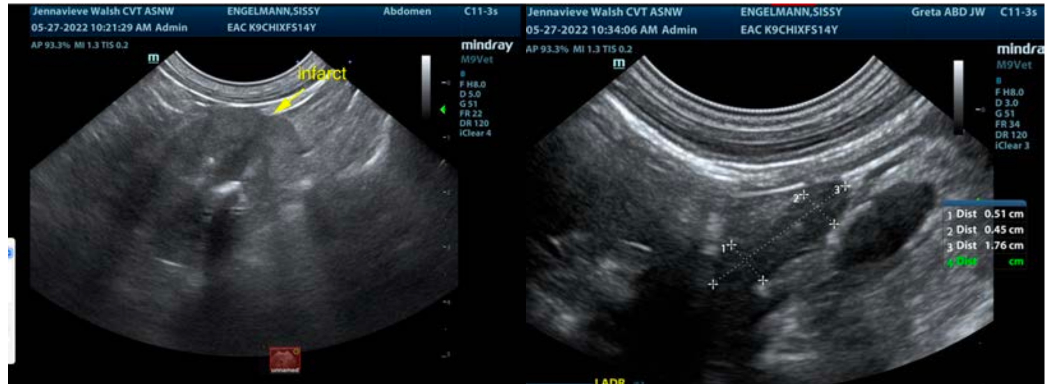

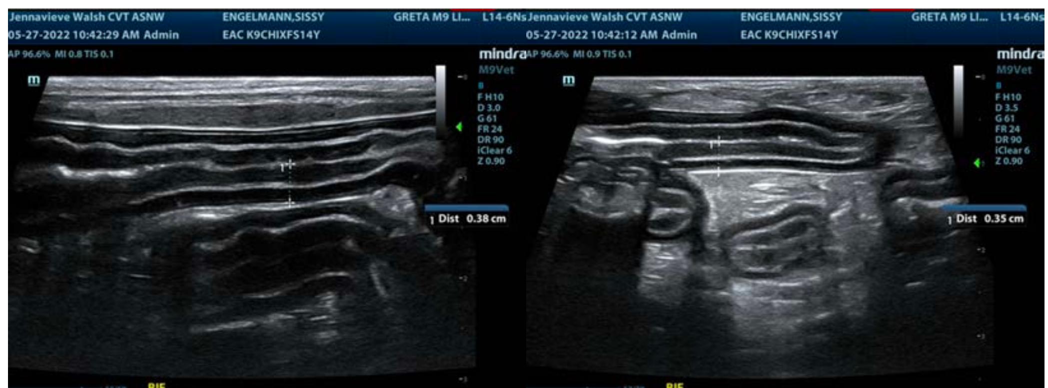

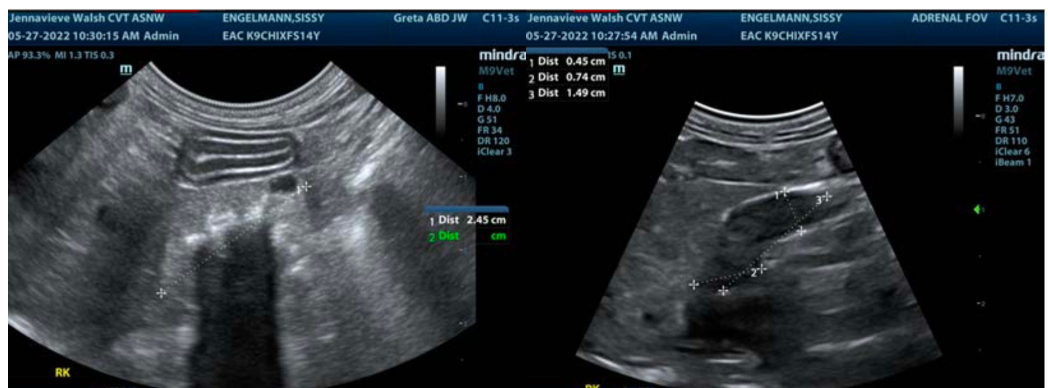

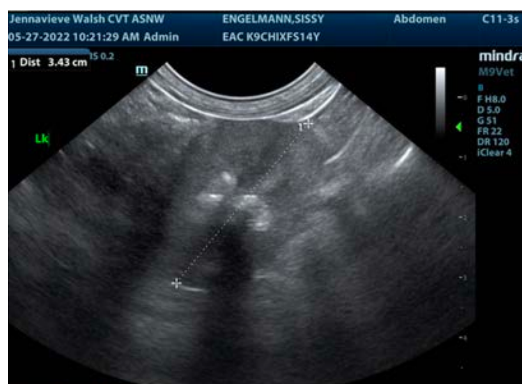

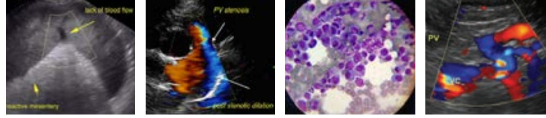

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The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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.

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

info@SonoPath.com