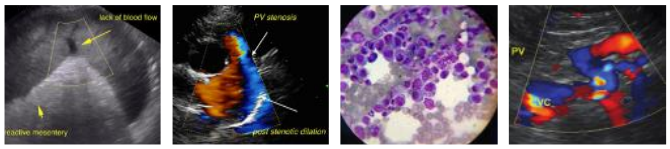
SonoPath
Clinical Sonography & Telecytology
EDUCATIONAL TELECONSULTATION SERVICES™



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

PATIENT

Koda Martin

SPECIES

Canine

BREED

Papillon Mix

SEX

Spayed Female

AGE

15 Years

WEIGHT

14.1

INTERPRETED BY

Tam Mengine, DVM, DABVP (canine/feline practice)

IMAGING PERFORMED BY

Dr. Deml

HOSPITAL NAME

Craig Road AH

REFERRING VET

Dr. Deml

INVOICE

20556

DATE

1/13/23

PRESENTING CLINICAL SIGNS

History: Koda, a 15 yo FS Papillon mix, presented for evaluation after acting uncomfortable and vomiting. O noted P vomited once this afternoon and then later this evening was acting uncomfortable. P was hunched over like she needed to vomit or have diarrhea but did not do either. P then laid in lateral and "stared off into space." P never lost consciousness per O. This just started today. P has also been shaking. O notes P coughs occasionally. Owner reports no diarrhea or sneezing. Eating and drinking behavior has remained unchanged and is normal per the owner. Patient receives an NSAID (O is not sure which one) occasionally for suspect arthritis but has not had it recently. Patient has no recent travel history.

Abnormal PE/Chem/CBC/UA Results: Neutrophilia: 21.08 (3-12) Elevated ALP: 1395 (20-150) Elevated ALT: 1033 (10-118) Elevated T. bili: 0.7 (0.1-0.6)

ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN

Urinary System

The urinary bladder is moderately distended with anechoic urine, and no luminal sediment is present. The ureteral papillae, trigone and pelvic urethra are of normal appearance, and the ureters are not visible (normal). No masses, calculi or mucosal irregularities are noted. Urethra visualized to 1.0 cm.

Both kidneys exhibit poor corticomedullary differentiation. There is focal mineralization present within the renal cortex, as well as several small cortical cysts. There is no evidence of nephrolithiasis, pyelectasia or hydronephrosis. The proximal ureters are not visible (normal). The left kidney is 4.7 cm in length. The right kidney is 4.6 cm in length.

Adrenal Glands

The adrenal glands are both identified in their normal locations. There is a small isoechoic nodule arising from the body of the right adrenal gland, measuring 5.0 mm. They are otherwise normal in size and shape with appropriate parenchymal echogenicity and normal phrenic vasculature. The left adrenal gland height is 6.2 mm at the cranial pole and 5.3 mm at the caudal pole. The right adrenal gland height is 7.3 mm at the cranial pole and 5.6 mm at the caudal pole

Spleen

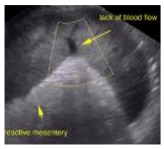
The visualized portion of the spleen is of appropriate size and has a normal homogenous parenchyma with a smooth continuous capsular surface. The splenic vasculature appears normal with no evidence of congestion or thrombosis.

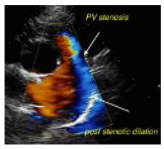
Liver

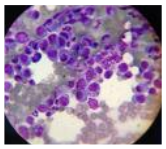
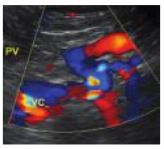
The liver is diffusely hyperechoic and subjectively enlarged. The portal and hepatic vasculature are of normal size and appearance with no evidence of congestion or thrombosis.

The gallbladder is moderately distended with anechoic contents, and what is most likely a large amount of echogenic sludge. The wall is diffusely, mildly thickened to 1.6 mm, with small polypoid lesions. The cystic and common bile ducts are normal/not visible.

Gastrointestinal





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

PATIENT

Koda Martin

SPECIES

Canine

BREED

Papillon Mix

SEX

Spayed Female

AGE

15 Years

WEIGHT

14.1

INTERPRETED BY

Tam Mengine, DVM, DABVP (canine/feline practice)

IMAGING PERFORMED BY

Dr. Deml

HOSPITAL NAME

Craig Road AH

REFERRING VET

Dr. Deml

INVOICE

20556

DATE

1/13/23

The stomach is empty. The gastric wall is thickened at 7.7 mm with normal deviations due to rugal folds, and exhibits appropriate wall layering, however the submucosal layer is disproportionately thickened relative to other layers. The pylorus is of normal appearance.

The visualized portions of the duodenum, jejunum, and ileum are of normal thickness with intact wall layering that exhibits the appropriate 1:3 muscularis to mucosa ratio. The duodenal wall measures 4.6 mm. The jejunal wall measures up to 3.5 mm. Intestinal motility appears normal.

The visible portions of the colon have a mildly thickened wall, up to 2.3 mm, which is diffusely corrugated. The ileocecal junction is visualized and appears normal.

Pancreas

The visualized portions of the pancreas are hypoechoic and surrounded by hyperechoic omental fat. The pancreatic duct appears normal.

Free Abdomen

There is no evidence of free fluid within the peritoneal cavity. The omentum and intra-abdominal fat are of appropriate echogenicity. Enlarged abdominal lymph nodes are not observed. The aortic trifurcation has normal blood flow with no evidence of thrombosis.

ULTRASONOGRAPHIC FINDINGS

Primary Findings

- Pancreatic changes, typical of pancreatitis
- Polypoid hyperplasia in the gallbladder and most likely sludge
- A diffusely thickened stomach wall, consistent with gastritis

Secondary Findings

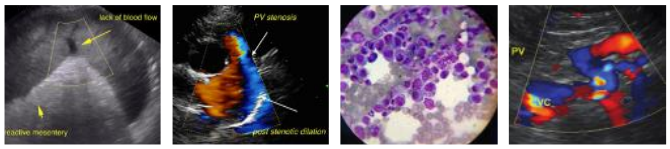
- A diffusely enlarged and hyperechoic liver
- Chronic renal changes
- Small right adrenal nodule

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

The lesion noted in the gallbladder is most likely incidental sludge, however, the application of power or color doppler to this region could definitively rule out the possibility of a mass. The changes to the gallbladder wall are common in dogs of this age, and most likely incidental.

The changes in the liver are non-specific and could be attributed to endocrine disease, other vacuolar hepatopathies, reactive hepatopathy, storage hepatopathy, chronic infectious or inflammatory disease (including leptospirosis), hepatic lipidosis, or less likely neoplasia. Ultrasound-guided or laparoscopic biopsies would be needed for definitive diagnosis. Recommendations include:

- screening for diabetes mellitus and hyperlipidemia if not already performed
- testing for Cushing's disease is recommended only if clinical signs support the diagnosis



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

PATIENT

Koda Martin

SPECIES

Canine

BREED

Papillon Mix

SEX

Spayed Female

AGE

15 Years

WEIGHT

14.1

INTERPRETED BY

Tam Mengine, DVM, DABVP (canine/feline practice)

IMAGING PERFORMED BY

Dr. Deml

HOSPITAL NAME

Craig Road AH

REFERRING VET

Dr. Deml

INVOICE

20556

DATE

1/13/23

- bile acid testing is recommended to further assess severity of hepatic disease - if elevated then liver biopsies should be considered
- if bile acids are normal, but the ALT is increased, then initiation of liver support therapies such as SAMe, Vitamin E and ursodiol, along with serial monitoring of liver enzyme levels every 2-3 months, could be initiated

The changes in the stomach are consistent with chronic gastritis. Recommendations include:

- Empiric treatment with antiemetics, such as maropitant and ondansetron, and antacid therapy, such as omeprazole or famotidine, and gastroprotectants such as sucralfate.
- Dietary therapy with either a highly digestible, low fat diet, or a hydrolyzed or novel protein diet is recommended. Feeding frequent small meals is preferred if feasible.
- Fecal parasite testing and empiric fenbendazole treatment
- Endoscopic biopsies are recommended for definitive diagnosis, and to determine whether corticosteroid therapy would be indicated.
- Empiric treatment for helicobacter gastritis could be considered. Repeat ultrasound at the end of therapy can assess response, along with monitoring for resolution of clinical signs. Treatment protocol is as follows, for a duration of 28 days :
  - Azithromycin 5mg/kg PO once daily for 5 days, then every other day thereafter
  - Metronidazole 10mg/kg PO BID
  - Amoxicillin 20mg/kg PO BID
  - Omeprazole 0.7 - 1 mg/kg q24h

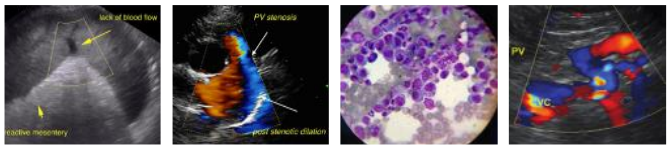
Although ultrasound cannot be used to definitively diagnose pancreatitis, the presence of inflammation throughout the pancreatic region raises suspicion for this. Additional recommendations include:

- a cPLI level is recommended for confirmation and monitoring purposes.
- supportive care including fluid therapy, antiemetics, analgesics, appetite stimulants (if needed) are warranted.
- a highly digestible, low fat intestinal diet should be encouraged as soon as vomiting can be controlled.
- complications such as hypoalbuminemia, hyperglycemia and hypokalemia should be managed as they arise.
- if the patient is not responding to medical management, fine needle aspiration with a 25G needle for cytology could be considered after first checking a coagulation profile.

The changes in the kidneys are consistent with chronic renal disease. Findings should be correlated with laboratory values, IRIS staging and clinical signs.

The nodule on the left adrenal gland most likely represents benign hyperplasia, however, serial monitoring with ultrasound in 6-8 weeks is recommended to ensure that the nodule is not growing. A blood pressure measurement is also recommended to help rule out a pheochromocytoma.

SonoPath
Clinical Sonography & Telecytology
EDUCATIONAL TELECONSULTATION SERVICES™



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

PATIENT

Koda Martin

SPECIES

Canine

BREED

Papillon Mix

SEX

Spayed Female

AGE

15 Years

WEIGHT

14.1

INTERPRETED BY

Tam Mengine, DVM, DABVP (canine/feline practice)

IMAGING PERFORMED BY

Dr. Deml

HOSPITAL NAME

Craig Road AH

REFERRING VET

Dr. Deml

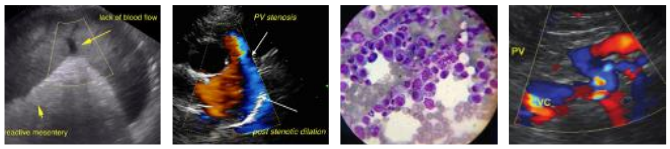
INVOICE

20556

DATE

1/13/23

SonoPath
Clinical Sonography & Telecytology
EDUCATIONAL TELECONSULTATION SERVICES™



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

PATIENT

Koda Martin

SPECIES

Canine

BREED

Papillon Mix

SEX

Spayed Female

AGE

15 Years

WEIGHT

14.1

INTERPRETED BY

Tam Mengine, DVM, DABVP (canine/feline practice)

IMAGING PERFORMED BY

Dr. Deml

HOSPITAL NAME

Craig Road AH

REFERRING VET

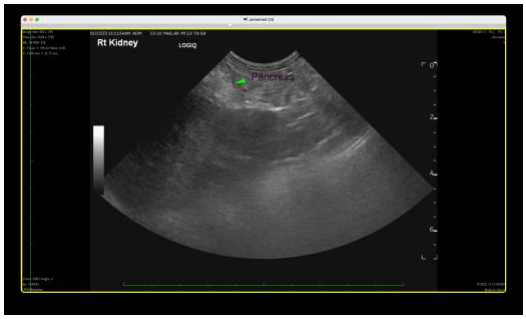
Dr. Deml

INVOICE

20556

DATE

1/13/23



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.

Tam Mengine, DVM, DABVP (canine/feline practice) info@SonoPath.com