



PATIENT

Diego Smart

SPECIES

Canine

BREED

Terrier Mix

SEX

Neutered male

AGE

15 years

WEIGHT

15.8 lbs

PRESENTING CLINICAL SIGNS

- P presented for lethargy and p is icteric
- ALKP and ALT too high to read, CPL 645 consistent with pancreatitis, GGT 257, T bili 14

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 **kidneys** revealed largely normal size and structure, corticomedullary definition and ratio (cortex 1/3 of medulla) were essentially maintained with some age-related loss of curvilinear patterns regarding the capsule and C/M junction. The cortices presented largely uniform texture with some increased echogenicity expected for this age patient. Medullary structure differed distinctly from that of the cortex and no evidence of pelvic dilation was present. The right kidney measured 4.8 cm. The left kidney measured 5.2 cm.

The residual prostate measured 0.76 cm.

INTERPRETED BY

Eric Lindquist, DMV
DABVP, Cert. IVUSS

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 2.16 x 0.49 cm at the caudal pole and 0.58 cm at the cranial pole. The left adrenal gland measured 1.67 x 0.47 cm at the caudal pole and 0.52 cm at the cranial pole.

IMAGING PERFORMED BY

Kathleen Byrnes

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.

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Animal Hospital of
Lake Brandt

REFERRING VET

Dr. Mith

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Liver

The **liver** revealed mild, coarse architecture with slight subnormal size and mildly increased portal markings. The gallbladder revealed a moderate amount of excessive debris and mineralization. A grouping of coalesced bile and mineralization was noted in the gallbladder measuring 3.2 cm. There was no evidence of color flow uptake to suggest a mass; however, a mass cannot be completely ruled out given the echotexture of the structure. The cystic duct revealed suspended debris and calculi. The



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common bile duct was followed to the duodenal papilla and was dilated up to 0.6 cm with echogenic debris. The common bile duct revealed calculi with mucous type debris or possible low grade tissue proliferation. Thickening of the duodenal papilla was noted.

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Gastrointestinal

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Examination of the **gastrointestinal tract** revealed a stomach and intestine free of stasis, of normal wall thickness, acceptable curvilinear mural detail, and peristaltic activity. Small and large intestine demonstrated normal luminal chyme and stool consistency respectively. No obstructive or overt infiltrative disease was noted. No associated abnormal lymphatic activity was noted.

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Pancreas

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The **pancreas** was heterogenous with mixed echogenic changes with areas of fibrotic plaques in the right base measuring up to 2.9 x 1.97 cm. Macronodular change was noted in the region of the right pancreatic base. This is consistent with fibrosis and remodeling.

WEIGHT

15.8 lbs

ULTRASONOGRAPHIC FINDINGS

INTERPRETED BY

Eric Lindquist, DMV
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- Biliary calculi.
- Mild gallbladder congestion with coalesced bile and mineralization. Potential low-grade neoplastic process.
- Mucoduct with potential low-grade neoplastic process.
- Pancreatic macronodular change and chronic inflammatory pattern around the common bile duct and pancreatic base with likely duodenal papilla dysfunction.
- Mild cholangiohepatitis liver pattern.
- Age related renal changes.

IMAGING PERFORMED BY

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INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

I cannot completely rule out a neoplastic process, yet there was no color flow uptake within the gallbladder structure, which would suggest coalesced bile and mineralization.

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I recommend concurrent cholangiohepatitis liver protocol and symptomatic treatment for chronic pancreatic changes. I recommend surgical exploratory with objective of cholecystectomy and common bile duct lavage and pancreatic biopsy. Common bile duct deviation procedure may be necessary in this patient. If surgery is absolutely not an option after Leptospiriosis titers and other causes of cholangiohepatitis have been ruled out, then a cortisone injection of Dexamethasone at 0.25 mg/kg could be considered to reduce inflammation and attempt to enhance the bile flow. However, the inflammatory component appears to be minimal. There are significant chronic changes in the pancreas, common bile duct and liver as well as the gallbladder that would suggest that this is more of a physical obstructive issue intrinsically within the common bile duct as well as likely extrinsically from the pancreas and probable duodenal papilla dysfunction as well as periodic calculi obstruction. Prognosis is guarded.

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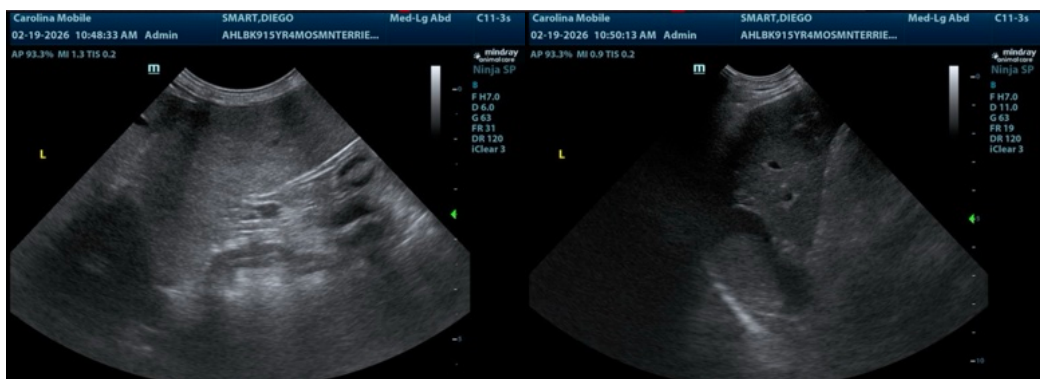
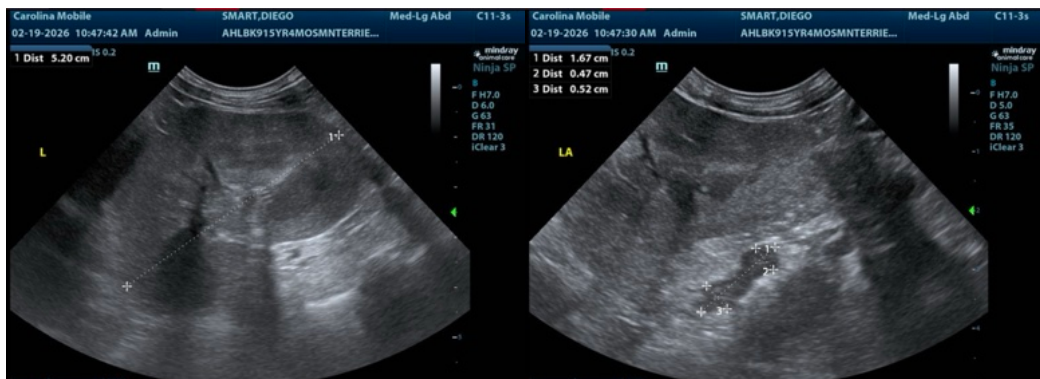
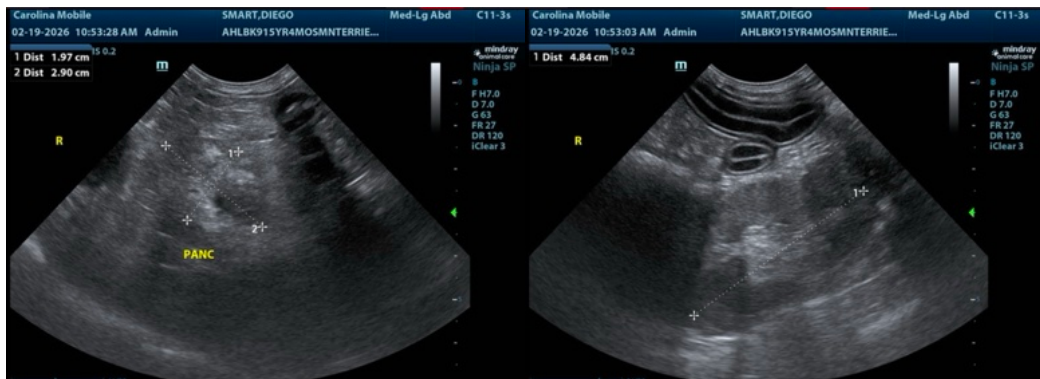
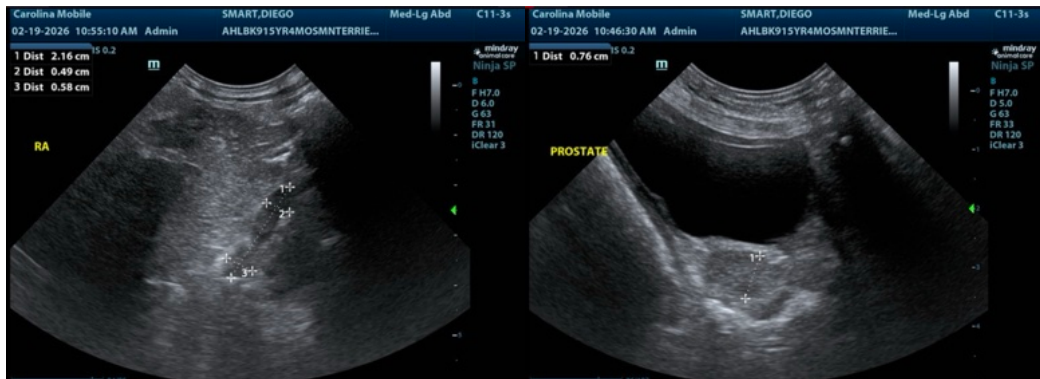
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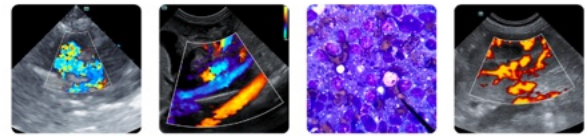
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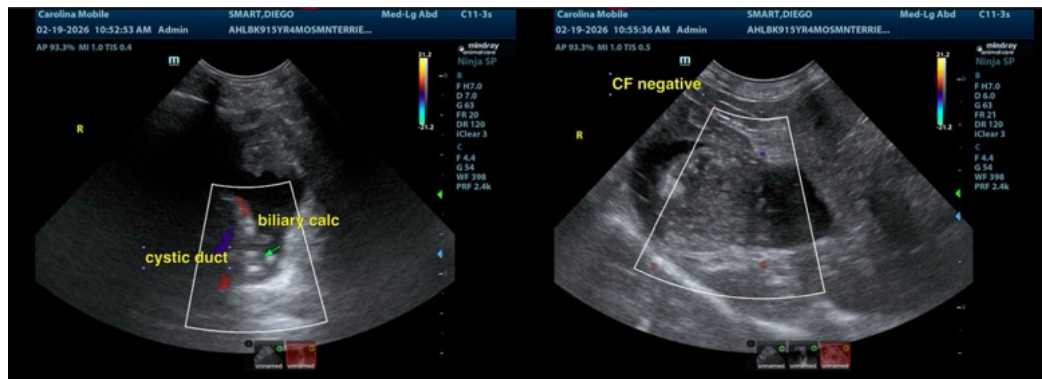
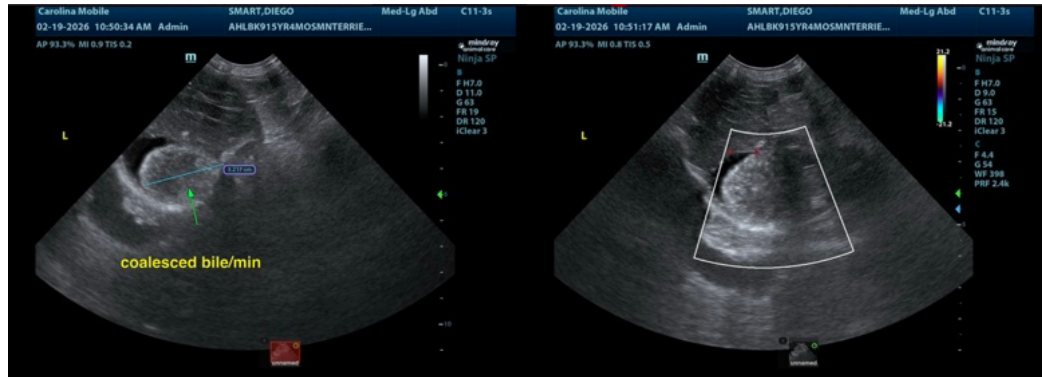
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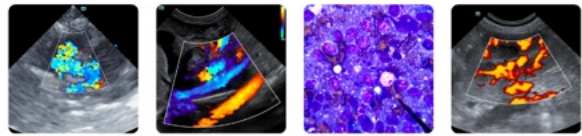
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The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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

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