The Focal Zone
FUELED BY SONOPATH VETERINARY ULTRASOUND

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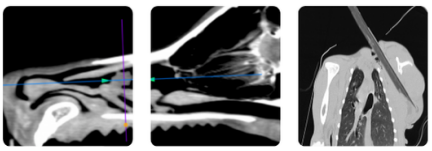

Teleradiology
Educational Teleconsultation Services™

PATIENT

Emmy Duncan

SPECIES

Canine

BREED

Lab X

SEX

Spayed Female

AGE

13 Years

WEIGHT

29.1 kg

INTERPRETED BY

Brittany Sinclair DVM, DACVECC

IMAGING PERFORMED BY

Amanda Stewart

HOSPITAL NAME

Graham AH

REFERRING VET

Dr. Nixon

INVOICE

35543

DATE

11/17/25

PRESENTING CLINICAL SIGNS

History: 1. Progressive hepatopathy (steadily increasing ALP over the past few years). All other liver enzymes wnl. 2. Chronic history of urinary tract infections with clinical signs of PUPD, along with a history of dilute urine. 3. Perianal mass dorsal to anus Current Medications Denamarin 425 mg, Trazodone 150 mg, Gabapentin 300 mg

Abnormal PE/Chem/CBC/UA Results: ABNORMAL Labwork Values ALT - 958 U/L Oct 28th, 2025; 818 U/L Sep 26th, 2025; 685 U/L Nov 2022, 387 U/L Feb 2022 Chronic low specific gravity (below 1.030) Chronic UTIs (pyuria, hematuria and rods) Primary Question to Be Answered in This Exam Evaluate hepatopathy and reason for continuously increasing ALP values, as well as evaluating kidneys/bladder due to recurring UTIs.

ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN

Urinary System

The urinary bladder, trigone, and visible pelvic urethra were of normal thickness. The ureters were not visible which is normal. There was normal wall layering with no masses, uroliths or abnormal thickening visualized. Urine was anechoic. No evidence of inflammatory or neoplastic changes were noted.

The kidneys were both normal size and structure, with smooth capsule and normal corticomedullary definition and ratio (cortex 1/3 of medulla). Medullary structure differed distinctly from that of the cortex. No evidence of pelvic dilation was present. The right kidney measured 6.8 cm in length. The left kidney measured 6.42 cm in length.

Adrenal Glands

Left adrenal gland was 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 left adrenal gland measured 2.12 cm in length and 0.6 cm at the cranial pole and 0.63 cm at the caudal pole.

Right adrenal gland was visualized on still images only. They appear to have normal shape, size, position and echogenicity for this breed and age though this could not be confirmed on cine loops. The right adrenal gland measured 2.63 cm in length and 1.08 cm at the cranial pole and 0.73 cm at the caudal pole.

Spleen

The spleen was normal in size with a slightly mottled parenchyma (consistent with age) and smooth capsule. Normal splenic vasculature with no signs of congestion or thrombosis.

Liver

The liver is subjectively normal in size with normal contours and structure. The parenchyma is heterogenous with a slightly coarse appearance. No specific nodules are visualized. Vascular and biliary tracts are of normal volume with no evidence of congestion. No pathological hepatic lymphadenopathy observed.

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Gallbladder is moderately distended with normal wall thickness and anechoic contents. Common bile duct is non-distended and tapers normally.

Gastrointestinal

The stomach contains minimal luminal contents. It measures at a normal thickness with some variability due to the presence of rugal folds. The distinction of the gastric wall layers is adequate and there is no impression of reduced peristaltic activity. No masses or focal lesions were observed.

The visualized areas of duodenum, jejunum and ileum have a relatively uniform diameter with minimal fluid distension. Wall thickness is normal. Bowel loops follow a curvilinear path with distinct wall layering maintaining the typical 1:3 muscularis: mucosa layer ratio. Visualized peristalsis appears appropriate. There were no focal lesions consistent with obstruction or a mass effect observed.

The ileocecal junction was not visualized. Sections of colon are visualized with formed fecal material and gas shadowing distally. There is no observed focal or generalized colon wall thickening or loss of layering.

Pancreas

The area of the pancreas was isoechoic to surrounding tissue with no overt inflammation. Pancreatic tissue was not distinctly visualized which is common.

Lymph Nodes

No clinically significant lymphadenopathy or abnormalities noted.

ULTRASONOGRAPHIC FINDINGS

- Slightly coarse liver and spleen, most consistent with mild age-related remodeling.
- Otherwise, normal abdomen.

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

Liver changes are a common benign age-related change, but infiltrative disease (lymphoma, MCT, other) cannot be definitively ruled out. No significant disruption of architecture noted to suggest significant pathology. In the face of elevated liver enzymes, fine needle aspirate is recommended to further characterize parenchymal changes, and bile acid profile to assess liver function, especially if any weight loss is noted or for baseline cytological assessment. Ultimately liver biopsy is often required for more definitive diagnosis. Empiric treatments (SAM-E, milk thistle, Vitamin E, ursodiol if bilirubin elevated or gallbladder sludge) could be tried and liver enzymes re-evaluated, especially if liver FNA does not show significant pathology before more invasive liver sampling is pursued.

Induction phenomena are the most common cause for an elevation in ALP. These are systemic illnesses that 'turn on' the liver enzyme. Causes of this include Cushing's disease, dental disease, arthritis, and numerous others. In many cases the exact cause is unclear but as long as ultrasound and bile acids tests are normal most patients do not have progressive changes in their liver. While liver biopsy is not routinely performed, vacuolar hepatopathy is noted on most biopsies. This is often non-progressive but in rare cases can be more severe and lead to liver failure.

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- If signs of cushings disease are present, recommend endocrine function testing to evaluate for cushing's disease.
- Consider fine needle aspirate to rule out round cell neoplasia.
- If a cause for the ALP elevation is not identified: I recommend recheck general blood work every 6 months, ultrasound once per year, and bile acids test every 1-2 years based on other results. If the ALP continues to climb a biopsy should be considered.
- Consider long term use of denamarin, and monitoring for the signs of cushings developing.

Splenic changes are a common benign age-related change, but infiltrative disease (lymphoma, MCT, other) cannot be definitively ruled out. No significant disruption of architecture noted to suggest significant pathology. Fine needle aspirate could be considered to further characterize parenchymal changes if clinically indicated, especially if any weight loss is noted or for baseline cytological assessment.

No cause of recurrent urinary tract infections are apparent in this study. No urinary bladder stones, mural thickening or signs of inflammation or debris were present. Urine culture of a cystocentesis sample with sensitivity and 2-4 week course of appropriate antibiotic therapy with urinalysis and ideally culture 3 days prior to discontinuation of antibiotics and 3 days after discontinuation is recommended to ensure adequate coverage and length of treatment. Thorough physical exam and historical information gathering to search for presence of predisposing factors for ascending infection such as skin disease, vulvar conformation or husbandry which may be predisposing to ascending infections is important. Thorough investigation for underlying disease which may be predisposing to lowered immunity including chem/lytes/CBC, thyroid testing and baseline cortisol +/- ACTH stimulation test is recommended. Ultimately cystoscopy may be required for more definitive diagnosis. In female dogs with vulvar conformation issues predisposing to ascending infections, once initial urine and skin infections are controlled, maintenance cleaning of the vulvar folds with water wipes after urination or at least twice daily may be enough to prevent recurrence. Maintenance of a healthy weight is also important. Vulvoplasty is a consideration if less invasive measures are ineffective.

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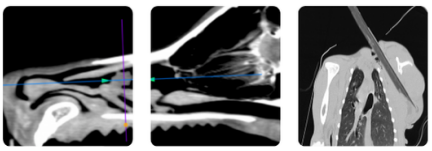

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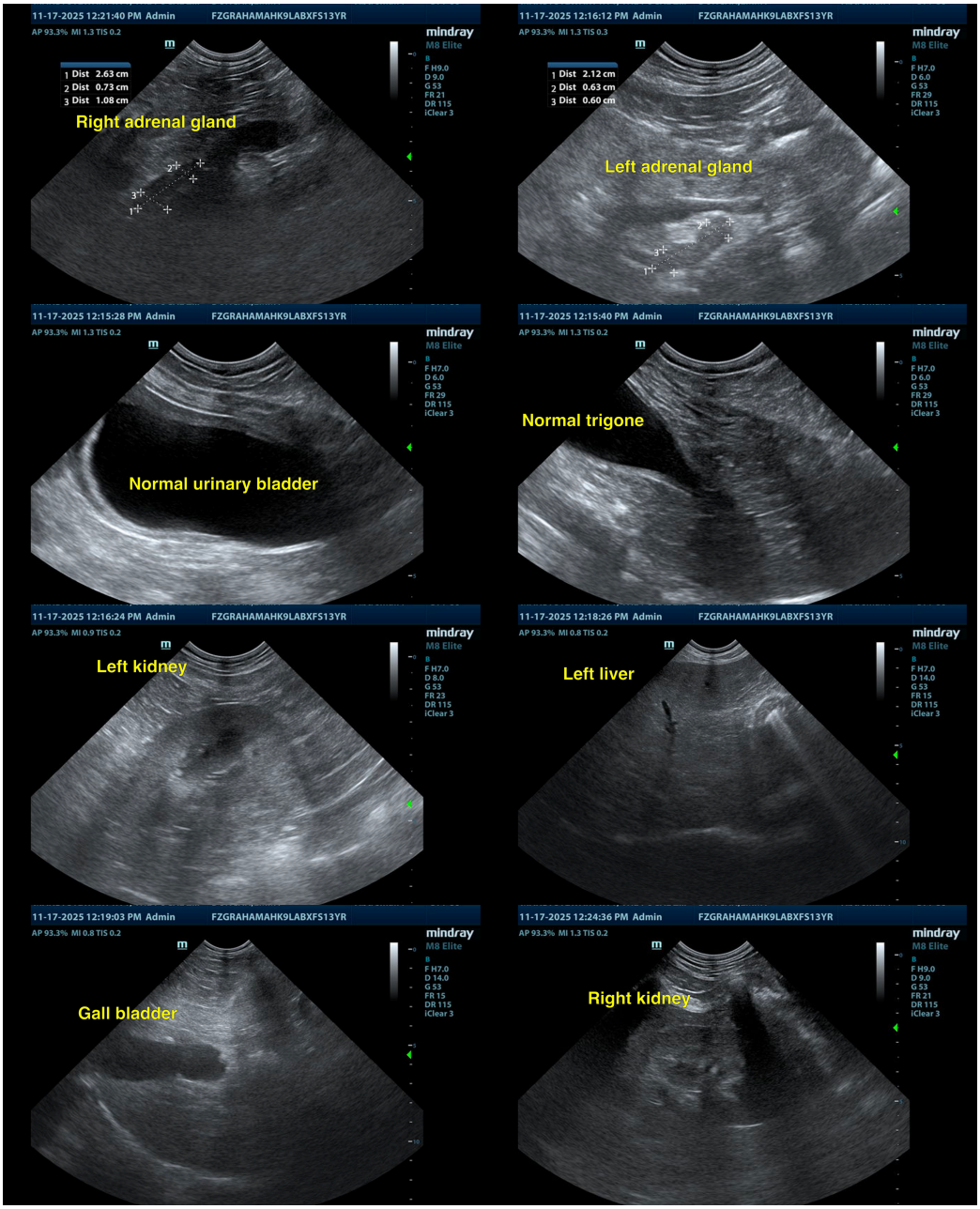
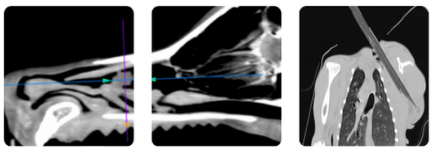


The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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.

Dr Brittany Sinclair, BVSc(hons), DACVECC



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