



PATIENT PRESENTING CLINICAL SIGNS

Buster Coombs History: Elevated ALKP and ALT found on annual wellness bloodwork

SPECIES ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN

Canine

Urinary System

BREED

Jack Russell Terrier

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.

SEX

Neutered male

The kidneys have a smooth capsule and with mild hazing of corticomedullary definition. Pinpoint areas of cortical mineralization. No evidence of pelvic dilation was present. The left kidney measured 4.92 cm and the right kidney measured 4.7 cm.

AGE

13 years

Adrenal Glands

Adrenal glands were not distinctly visualized. The area of the adrenal glands and surrounding vasculature were normal.

WEIGHT

19 lbs

Spleen

The spleen was normal in size with a slightly mottled parenchyma and smooth capsule. Multifocal variably sized hyperechoic nodules are present throughout and are most consistent with benign myelolipomas. Normal splenic vasculature with no signs of congestion or thrombosis.

INTERPRETED BY

Dr Brittany Sinclair, BVSc(hons), DACVECC

Liver

IMAGING PERFORMED BY

Dr. Wiley

The liver is subjectively enlarged with slight rounding of lobes and the parenchyma contains multifocal variably sized hypoechoic nodules and a coarse appearance. No specific masses are visualized. Vascular and biliary tracts are of normal volume with no evidence of congestion. No pathological hepatic lymphadenopathy observed.

HOSPITAL NAME

Petvacx

The gall bladder is moderately distended with anechoic fluid, with hyperechoic non-shadowing gravity dependent debris present. There is no surrounding free fluid or signs of active inflammation.

REFERRING VET

Dr. Kwong

Gastrointestinal

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The stomach contains minimal luminal contents. It measures at a normal thickness of 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 visualized and exhibited normal intact wall layering and is subjectively of normal thickness. 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.

DATE

4/3/23



PATIENT

Pancreas

Buster Coombs

The base and limbs of the pancreas were observed to be largely isoechoic to surrounding omental fat. Pancreatic duct and capsular contour and parenchyma were normal. No overt evidence of active inflammatory or neoplastic disease was noted.

SPECIES

Canine

Lymph Nodes

BREED

No clinically significant lymphadenopathy or abnormalities noted.

Jack Russell Terrier

Free Abdomen

SEX

No masses or free fluid were noted.

Neutered male

ULTRASONOGRAPHIC FINDINGS

AGE

Primary Findings

13 years

WEIGHT

19 lbs

1. Vacuolar hepatopathy
2. Gall bladder debris
3. Splenic parenchymal changes with smooth capsule
4. Degenerative renal changes

INTERPRETED BY

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

Dr Brittany Sinclair,
BVSc(hons), DACVECC

Liver changes are most consistent with a vacuolar hepatopathy, though this diagnosis cannot be definitively made with ultrasound imaging alone. Vacuolar degeneration is a common nonspecific indicator of hepatocyte injury which is most commonly secondary to exogenous steroid exposure, hyperadrenocorticism, or an idiopathic age related change, though other endocrinopathy (hypothyroidism), infectious or inflammatory hepatitis (bacterial, viral, auto-immune other), and neoplasia among other things remain possibilities. In the face of elevated liver enzymes liver aspirate is recommended to further characterize these ultrasonographic changes. Ultimately liver biopsy is generally required for definitive diagnosis and should be considered if significant clinical signs or severe liver enzyme elevations are progressive despite empiric treatments (SAM-E, milk thistle, Vitamin E, ursodiol). Bile acid profile could be considered to assess liver function if clinically indicated. Clinical signs associated with vacuolar hepatopathy often reflect underlying disease. Idiopathic vacuolar hepatopathy may be asymptomatic and treatment is not necessarily indicated or effective at reducing liver enzymes. Imaging should be rechecked on a routine basis (q3-6mo) or if further significant increase in liver enzymes and/or new clinical signs are noted.

IMAGING PERFORMED BY

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Gall bladder debris may be an incidental finding given lack of surrounding inflammation. In the face of elevated ALKP ursodiol could be given as a choleric and empiric treatments (SAM-E, milk thistle, Vitamin E) could be tried. If liver supportive medications do not improve liver enzymes, a course of empiric antibiotics (clavamox, enrofloxacin) could be considered to cover for infectious cholangiohepatitis, though the lack of surrounding inflammation makes this less likely. Imaging should be rechecked on a routine basis for monitoring (q3-6mo) or if further significant increase in liver enzymes and/or new clinical signs are noted.

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Splenic changes are a common benign age related change, or may represent reaction to immune stimulation, 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



PATIENT

be considered to further characterize parenchymal changes if clinically indicated, especially if any weight loss is noted or for baseline cytological assessment.

Buster Coombs

Renal changes are likely age related degeneration. Correlate clinical significance with blood work/urinalysis findings and clinical signs.

SPECIES

Canine

BREED

Jack Russell Terrier

SEX

Neutered male

AGE

13 years

WEIGHT

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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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