



PATIENT	PRESENTING CLINICAL SIGNS
Shatzie Hawkswell	elevated bilirubin, ALT, GGT after 2 weeks on doxycycline, reglan, cerenia, misoprostil, and one week of denamarin. Received an unknown amount of double dosing of denamarin. Recently anorexic for 3 days, mild agitation
SPECIES	Abnormal PE/Chem/CBC/UA Results: GGT 94, sudden elevation in tbili. Anaplasma positive.
Canine	
BREED	ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN
German Shepherd	Urinary System
SEX	The urinary bladder is moderately distended with anechoic contents. No masses, inflammatory changes, echogenic sediment or cystoliths are observed. The urinary bladder, trigone and visible pelvic urethra are normal in thickness with a smooth mucosal surface.
Neutered Male	Prostate is normal in size, echotexture and echogenicity for a neutered male.
AGE	The right kidney is normal in size (7.93 cm), shape and echogenicity. It has smooth peripheral margination. There is a normal 1:3 cortex to medulla ratio with appropriate corticomedullary distinction. There is no evidence of pyelectasia, mineral or infarcts observed. A hyperechoic band parallel to the corticomedullary border is present.
7.5 Years	The left kidney is normal in size (7.41 cm), shape and echogenicity. It has smooth peripheral margination. There is a normal 1:3 cortex to medulla ratio with appropriate corticomedullary distinction. There is no evidence of pyelectasia, mineral or infarcts observed. A hyperechoic band parallel to the corticomedullary border is present.
WEIGHT	Adrenal Glands
78 Pounds	The right adrenal gland is unable to be well visualized.
INTERPRETED BY	The left adrenal gland is normal in size (2.5 cm long x 0.70 cm at the cranial pole and 0.70 cm at the caudal pole), shape and contour. Corticomedullary structure is unremarkable. Visible surrounding vasculature appears normal.
Beth Johnson, DVM DACVIM	Spleen
IMAGING PERFORMED BY	Spleen is subjectively large in size with normal smooth margins. Parenchyma is normal in echogenicity with a coarse/heterogenous echotexture. An approximately 1.6 cm round, hypoechoic, mid body non-capsule disrupting nodule is noted. Splenic vasculature appears normal.
Diane McFadden	Liver
HOSPITAL NAME	The liver is subjectively normal in size with normal smooth curvilinear peripheral contour. Parenchyma is appropriately hypoechoic to the spleen in echogenicity and appropriately mildly coarse and homogenous in echotexture. No focal lesions are observed. Visible vasculature and biliary tree appear normal without distension or congestion.
Animal General	INVOICE
REFERRING VET	The gallbladder is non-distended in size. The wall is smooth without visible thickening. Luminal contents are primarily anechoic. There is no evidence of cystic or common bile duct dilation.
Dr. Castimore	Gastrointestinal
INVOICE	The visible stomach wall is normal in thickness and layering. The lumen of the stomach is mildly distended with very echogenic reverberation artifact from intraluminal gas. There is no evidence of
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PATIENT	obstruction, foreign material or infiltrative disease; however, complete visualization of far wall is partially inhibited by gas. Pyloric outflow tract appears patent.
Shatzie Hawkswell	
SPECIES	The visible small intestines are normal in wall thickness and layering. Small intestinal motility appears adequate (1-3 contractions per min). The lumen of the small intestine is mildly distended with echogenic non-shadowing luminal contents and gas consistent with normal ingesta. There is no evidence of obstruction, foreign material or infiltrative disease.
Canine	
BREED	The visible colon is normal in wall thickness (< 0.2 cm) and layering. Contents are consistent with normal formed feces and gas.
German Shepherd	
SEX	Pancreas The pancreatic parenchyma is appropriately isoechoic to surrounding tissue. Visible capsule is smooth and normal in contour. There is no visible pancreatic duct dilation. There is no evidence of active peripancreatic inflammation.
Neutered Male	
AGE	Free Abdomen There is no evidence of free peritoneal effusion noted in these images. There is no apparent lymphadenopathy noted in these images.
7.5 Years	
WEIGHT	ULTRASONOGRAPHIC FINDINGS
78 Pounds	<ul style="list-style-type: none"> • Coarse splenomegaly – can be associated with congestion caused by sedation (if sedated) but can also be associated with diffuse infiltrative disease. Both benign conditions such as extramedullary hematopoiesis, lymphoid hyperplasia, as well as infiltrative neoplastic diseases such as round cell neoplasia should be considered.
INTERPRETED BY	<ul style="list-style-type: none"> • Hypo to anechoic splenic nodule – likely represents a benign lesion such as a cyst, hematoma, nodular hyperplasia, extramedullary hematopoiesis, etc., however while considered less likely, infiltrative neoplasia can mimic benign lesions, and cannot be ruled out.
Beth Johnson, DVM DACVIM	
IMAGING PERFORMED BY	<ul style="list-style-type: none"> • Bilateral medullary rim sign - This finding is of unknown clinical significance and can be a normal variant, often idiopathic. Medullary rim sign can be present with renal disease including FIP, lymphoma, hypercalcemic nephropathy, Leptospirosis, tubular disease, other and should be interpreted in combination with other more specific indications of kidney disease such as isosthenuria, proteinuria, azotemia, etc. This is a common incidental finding in patients with diabetes mellitus.
Diane McFadden	
HOSPITAL NAME	INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS
Animal General	
REFERRING VET	There is no ultrasonographic evidence of post-hepatic cholestasis to explain this patient's recent increase in bilirubin. Differentials include intrahepatic cholestasis secondary to a non-specific hepatopathy, potentially an idiosyncratic drug reaction to the Doxycycline or potentially the herbs that may have been administered, etc., or pre-hepatic cholestasis if this patient could be developing hemolysis secondary to the reported infectious disease.
Dr. Castimore	
INVOICE	Recommendations include testing for Leptospirosis (serology versus PCR given the recent history of antibiotics). A fine needle aspirate of the liver and spleen could be considered if patient's coagulation status is appropriate and pre-hepatic cholestasis is ruled out, indicating a hepatopathy.
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DATE	In the meantime, recommendations include supportive/symptomatic medical management of the infectious diseases, avoiding Doxycycline, if possible, as well as hepatic nutraceuticals, etc. If the liver enzymes and/or total bilirubin continued to increase, ultimately a liver biopsy may be warranted.
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Shatzie Hawkswell

SPECIES

Canine

BREED

German Shepherd

SEX

Neutered Male

AGE

7.5 Years

WEIGHT

78 Pounds

INTERPRETED BY

Beth Johnson, DVM
DACVIM

IMAGING PERFORMED BY

Diane McFadden

HOSPITAL NAME

Animal General

REFERRING VET

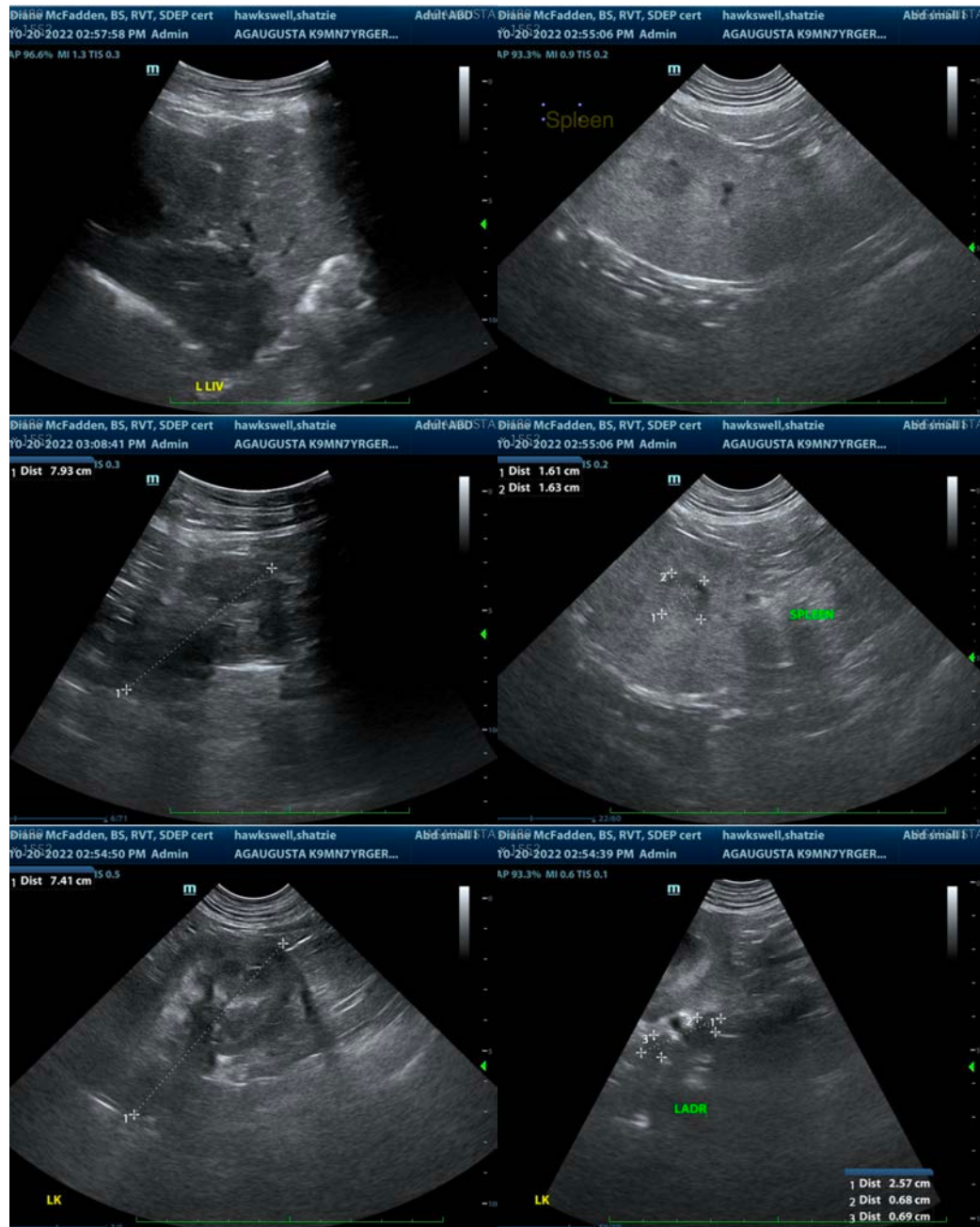
Dr. Castimore

INVOICE

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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.

Beth Johnson, DVM, DACVIM
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