



PATIENT PRESENTING CLINICAL SIGNS

Annie Hughes History: Presented end of June as ADR. Has not been gaining weight like her littermates. BCS 3/9 but otherwise unremarkable exam. Has been on Cerenia and Mirtazipine.

SPECIES

Canine

Abnormal PE/Chem/CBC/UA Results: June 26 - SDMA 26, Creatinine 365, Urea 53.7, K 3.9, Na/K ratio 39, TP 50, Alb 25, ALT 357 4dx neg, fecal neg. June 30 Lepto Elisa and PCR neg. July 18 - Creatinine 438, Urea 66.1, ALT 205. July 19 - after fluid therapy - Creatinine 358, Urea greater than 46.4, Alb 21, ALT 286.

BREED

Mini AussieX Sheltie

ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN

SEX

Spayed Female

Urinary System

The **urinary bladder** wall is normal in thickness and the mucosal surface is smooth. The bladder is moderately distended. A scant amount of suspended, echogenic debris is observed within the lumen. No masses, inflammatory changes or calculi are observed. The region of the trigone is normal.

AGE

1 year

The **left kidney** is normal size (3.99 cm in length); normal shape and with smooth peripheral contours. The cortex is mildly thickened. There is mild to moderate loss of corticomedullary distinction. The cortex is mildly hyperechoic. There is no evidence of pyelectasia, nephroliths, infarcts or hydroureter. Renal vasculature is normal.

WEIGHT

10.5 kg

The **right kidney** is normal size (3.75 cm in length); normal shape and architecture with smooth peripheral margins. There is a normal 1:3 cortex to medulla ratio mild to moderate loss of normal corticomedullary distinction. The cortex is mildly hyperechoic. There is no evidence of pyelectasia, nephroliths, infarcts or hydroureter. Renal vasculature is normal.

Adrenal Glands

The **left adrenal gland** is normal size (0.40 cm at cranial pole) (0.42 cm at caudal pole) (1.39 cm in length); normal shape; homogenous parenchyma. The glandular echogenicity and detail are unremarkable. Capsule, cortex, and medullary definition are normal. The phrenicoabdominal vein and surrounding vasculature are normal.

The **right adrenal gland** is normal size (0.99 cm at cranial pole) (0.55 cm at caudal pole) (1.44 cm in length); normal shape; homogenous parenchyma. The glandular echogenicity and detail are unremarkable. Capsule, cortex, and medullary definition are normal. The phrenicoabdominal vein and surrounding vasculature are normal.

INTERPRETED BY

Andrea Nicastro, DVM,
Diplomate ACVIM
(Small Animal Internal
Medicine)

IMAGING PERFORMED BY

Crystal Hill

HOSPITAL NAME

Norwich VC

Spleen

The **spleen** is contracted (0.52 cm in width at the level of the hilus) with with normal curvilinear peripheral contours. There is appropriate echogenicity and echotexture. No focal lesions are observed. Splenic vasculature is normal.

Liver

The **liver** is subjectively normal in size with normal contours and structure. There is appropriate echogenicity and echotexture. No overt structural evidence of inflammatory, infiltrative, or regenerative pathology is evident. Vascular and biliary tracts are of normal volume with no evidence of congestion. No pathological hepatic lymphadenopathy observed.

REFERRING VET

Dr. Saturno

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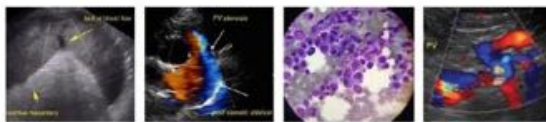
The **gall bladder** lumen is moderately distended. The wall is thin and smooth. Several irregular, varying-sized choleliths are observed within the lumen. The cystic and common bile ducts are normal/not seen.

DATE

7.21.22

Gastrointestinal

The **stomach and intestine** are free of stasis and exhibit normal peristaltic activity. The gastric lumen is not distended. The gastric wall and pylorus are normal in thickness with a normal layering


PATIENT

Annie Hughes

pattern. The pyloric outflow tract is patent. The small intestinal lumen is not dilated. The small intestinal wall thickness is normal with a normal layering pattern and appropriate mural detail. Discreet masses are not identified. The colonic wall is normal. There is no evidence of an obstructive pattern.

SPECIES

Canine

Pancreas

The region of the **pancreas** is isoechoic relative to surrounding omental fat. No obvious parenchymal abnormalities are observed. There is no evidence of regional inflammation or effusion.

BREED

Mini AussieX Sheltie

Free Abdomen

The **peritoneal cavity** is normal. There is no evidence of inflammation or effusion. The abdominal **lymph nodes** are normal/not visible.

SEX

Spayed Female

ULTRASONOGRAPHIC FINDINGS
Primary Findings

- Nonspecific chronic renal changes. Given the patient's young age, previous infection or toxic insult are considerations.
- An obvious cause for the elevated liver enzymes is not identified in the study. However, a microscopic hepatopathy (i.e., bacterial cholangiohepatitis, Leptospirosis, chronic active hepatitis, copper-associated hepatotoxicity, reactive hepatopathy, infiltrative neoplasia (less likely)) cannot be excluded.
- Choleliths, nonobstructive. Although choleliths are typically an incidental finding, they can sometimes be a nidus for infection, resulting in cholecystitis.

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Secondary Findings

- The splenic contraction is suggestive of dehydration. However, the spleen size may be a normal variant for this patient.

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INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

Regarding the azotemia, consider the following:

1. A repeat urine culture 5-7 days following the last antibiotic dose
2. A UPC when the urinary tract infection has cleared (if proteinuria is still present).
3. Baseline blood pressure measurement
4. Fluid therapy (IV or subcutaneous, depending on the patient's clinical status).
5. Consider transitioning to prescription renal diet if the patient will tolerate it.

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Regarding the elevated liver values, consider the following:

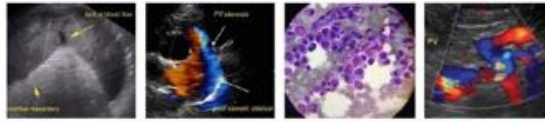
1. Repeat Leptospirosis serology, as serial conversion can sometimes take 1-2 weeks
2. Pre-and postprandial serum bile acids
3. Hepatic tissue sampling (i.e., fine-needle aspirate or surgical biopsy). When considering hepatic tissue sampling, the risk of putting the animal under anesthesia must be weighed against the benefit of obtaining tissue samples. If surgical biopsies are pursued at any point,

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aerobic and anaerobic bile cultures as well as acquisition of additional hepatic tissue samples for potential copper quantitation are recommended.

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While awaiting test results, supportive care is recommended, including broad-spectrum antibiotics to cover for pyelonephritis and Leptospirosis (i.e., fluoroquinolone and amoxicillin-clavulanic acid), gastric protectants, fluid therapy and symptomatic care as needed.

BREED

Mini Aussie X Sheltie

SEX

Spayed Female

AGE

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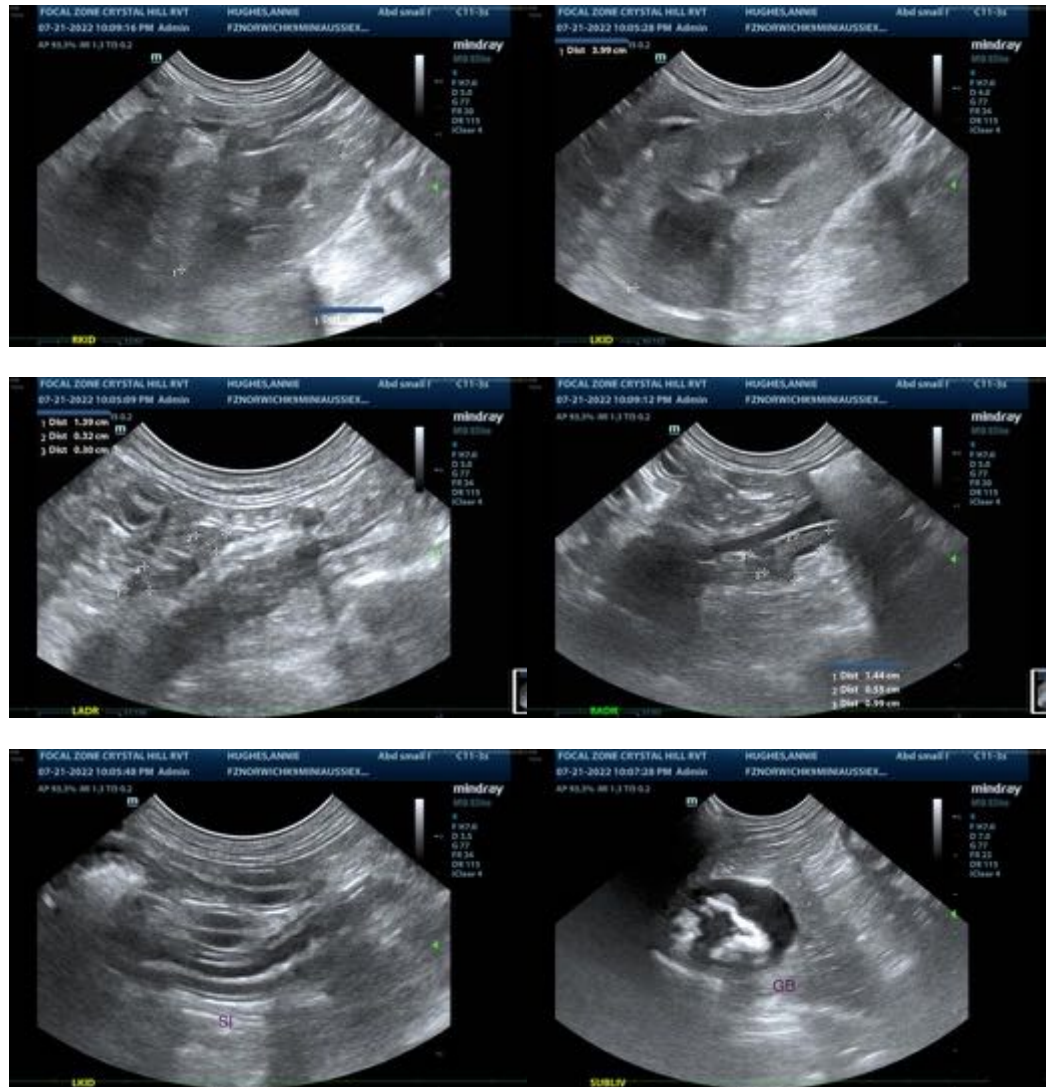
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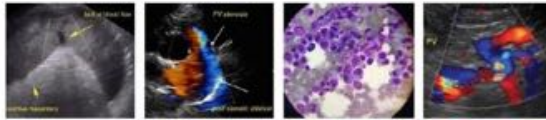
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The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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.

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