



PATIENT

Skye Steele

SPECIES

Canine

BREED

Lab Mix

SEX

FS

AGE

8 years

WEIGHT

60.4 lbs.

PRESENTING CLINICAL SIGNS

Skye, a 7yr old FS Lab, came in a few days ago for straining, discolored urine and low energy. With her history of hematuria, struvite crystalluria, and a UTI with an abnormally thickened bladder wall- I assumed it was a relapse of a UTI/struvite crystalluria (the bladder wall is still uniformly thickened- more at the proximal wall). We sent out a urinalysis, while pending- I started a short, high dose course of Enrofloxacin (she had a culture previously and she was susceptible to this and responded well), as well as carprofen for discomfort. When the urine came back the next day, it was actually bilirubin crystals, a lot of bilirubin, rbc, and wbc in the urine but no signs of infection. I had her discontinue the carprofen and to come back for a blood draw so I could check a CBC-select, CHEM(which included a good amount of liver values). Those values did come back and there are abnormalities on the CBC (borderline anemia) and Chemistry(elevated ALT, AST, ALP, and Tbili). She had no hx of liver disease that we knew of (last bloodwork was done 11/21). She is not acting herself. Current Medications enrofloxacin 136 mg- 3 tb sid for 5 days, triple max otic into ears Radiographic Findings xray in 11-15 to rule out bladder stones, none seen Primary Question/Differential to Be Answered in This Exam concerned for liver issue AND concerned about bladder thickening, any relation?

Abnormal PE/Chem/CBC/UA Results: - hct 40.3, hemoglobin 12.9, mch 18.8, mchc 32, reticulocyte hemoglobin 22.4, platelets 114 (slightly decreased on blood film but clumps seen), fibrin strands noted, slight anisocytosis. - chem alt 573, ast 314, alp 870, Tbili 0.9, uncon bili 0.5, con bili 0.4 - UA (cysto) - orange, opaque, sg 1.038, protein 2+, blood 3+, wbc 2-5, rbc 75-100, occasional bilirubin crystals, amorphous urates present

INTERPRETED BY

R. McKenzie Daniel,
DVM, DABVP
(Canine and Feline)

IMAGING PERFORMED BY

Jenna Walsh, CVT

ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN

Urinary System

The urinary bladder was subnormal in size owing to lack of urine distension which prohibited full evaluation of the urinary bladder walls. No evidence of bladder wall thickening with homogenous mural echogenicity. No bladder tumors. The urinary bladder, trigone, cystourethral junction, and visible pelvic urethra to a depth of 3 cm exhibited normal thickness and tone. Anechoic urine was present in the lumen with pinpoint to focal areas of dependent lumen mineral. The ureteral papillae were normal. The ureters were not visible which is normal. No evidence of inflammatory or neoplastic changes was noted.

The area of the aortic trifurcation was free of pathology.

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Normal size and margination were present in the kidneys. A normal 1:3 cortex / medulla ratio and mild loss of corticomedullary definition was present. The echogenicity of the cortex was similar to or slightly less than normal liver parenchyma while the medulla echogenicity was hypoechoic to the cortex with no evidence of pelvic dilation. The left kidney measured 7.8 cm in length. The right kidney measured 7.9 cm in length.

Adrenal Glands

The left adrenal gland was uniform in size and contour with a uniformly hypoechoic parenchyma. The left adrenal gland measured 0.56 cm width at the caudal pole and 2.9 cm length. The right adrenal gland was uniform in size and contour with a uniformly hypoechoic parenchyma. The right adrenal gland measured 0.80 cm width at the caudal pole and 3.1 cm length.

Spleen



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The spleen exhibited a finely textured and homogenous parenchyma which was hyperechoic to the liver and renal cortical parenchyma. The capsule was smooth and regular without apparent expansion. The splenic vasculature at the hilus was normal in volume with no evidence of congestion or thrombosis. Acute to chronic inflammatory, neoplastic, or benign parenchyma changes were not noted.

Liver/ Gallbladder

The liver was borderline to mildly enlarged with symmetrical contour and non-homogenous to mildly non-uniform increased parenchymal echogenicity. The hepatic and portal vasculature were normal in appearance without signs of congestion. The gallbladder was distended in size with thin walls and primarily anechoic luminal content with mild non-organized hyperechoic debris. The area of the common bile duct was indistinctly visualized yet not overtly consistent with post hepatic obstructive criteria.

Gastrointestinal

The stomach presented intact wall layering with a normal wall layer ratio. The lumen of the stomach contained mild to moderate variably echogenic ingesta containing nonspecific non-shadowing hypoechoic echoes with no signs of ileus or obstruction.

The small intestine presented intact wall layering with 1:3 muscularis/mucosa ratio. No overt pathology at the level of the duodenal papilla. The lumen of the small intestine was empty with no signs of ileus, obstruction, or foreign material.

Normal visible colon wall layers were present with apparent formed feces in lumen.

Pancreas

The pancreas was normal in size and contour with isoechoic to heterogeneous parenchyma compared to adjacent omentum. No signs of active inflammation or neoplasia.

Free Abdomen

No overt lymphadenopathy was present. Scant perihepatic free fluid was present.

ULTRASONOGRAPHIC FINDINGS

Primary Findings

- Nondistended urinary bladder with focal dependent lumen mineral.
- Non-specific mild chronic renal changes.
- Hepatopathy exhibiting mild non-uniform parenchyma-vacuolar hepatopathy, cholestasis, inflammatory/immune mediated disease, or other hepatopathy possible. Neoplastic criteria considered unlikely.
- Distended gallbladder with mild non-organized sludge (non-mucocele).
- Mild heterogenous pancreas- patient/ early age related variant, remodeling owing to previous inflammatory episode or mild to chronic pancreatitis possible.



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- Variably echogenic non-shadowing gastric ingesta-suspect food, treats, medication or similar.

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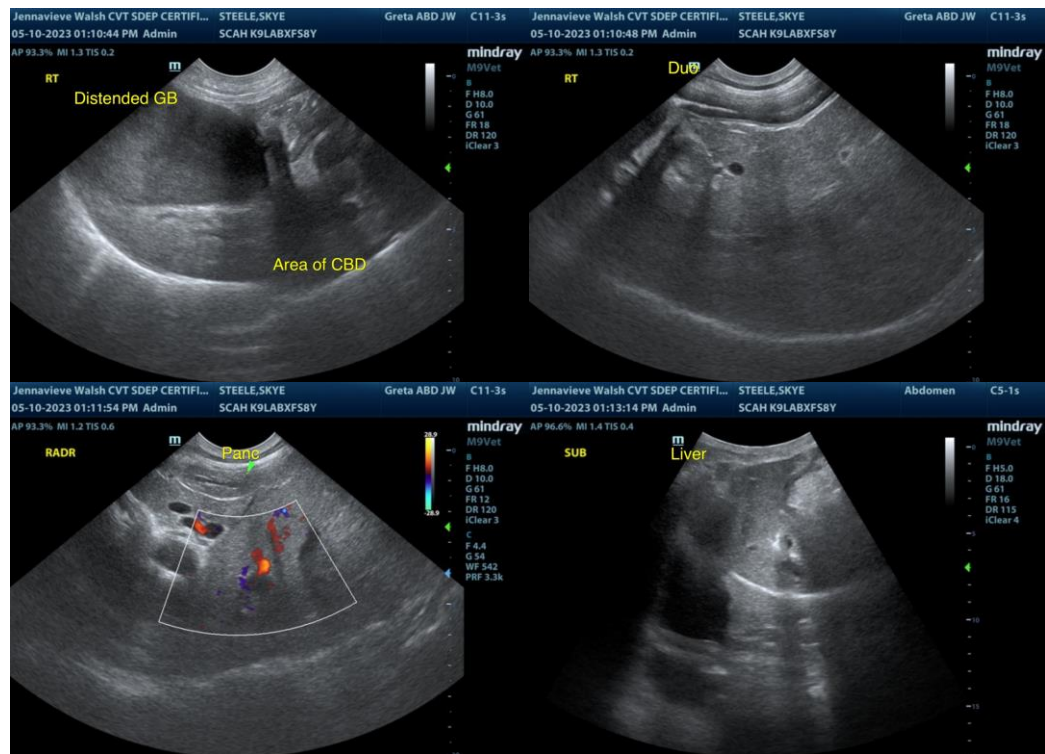
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INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

Definitive evidence of post hepatic obstruction was not obvious, yet emerging post hepatic obstruction given degree of gallbladder distention cannot be definitively excluded. Assuming normal clotting status, a hepatic FNA for screening cytology is warranted to assess for inflammatory criteria and rule out less likely occult infiltrative neoplasia.

No overt evidence of urinary bladder pathology although reassessment of a full urinary bladder would likely be ideal.

Empirical therapy for cholangiohepatitis with close monitoring of hepatic response or for progressive hepatic enzyme elevation/cholestasis and potential sonographic reassessment would be reasonable.





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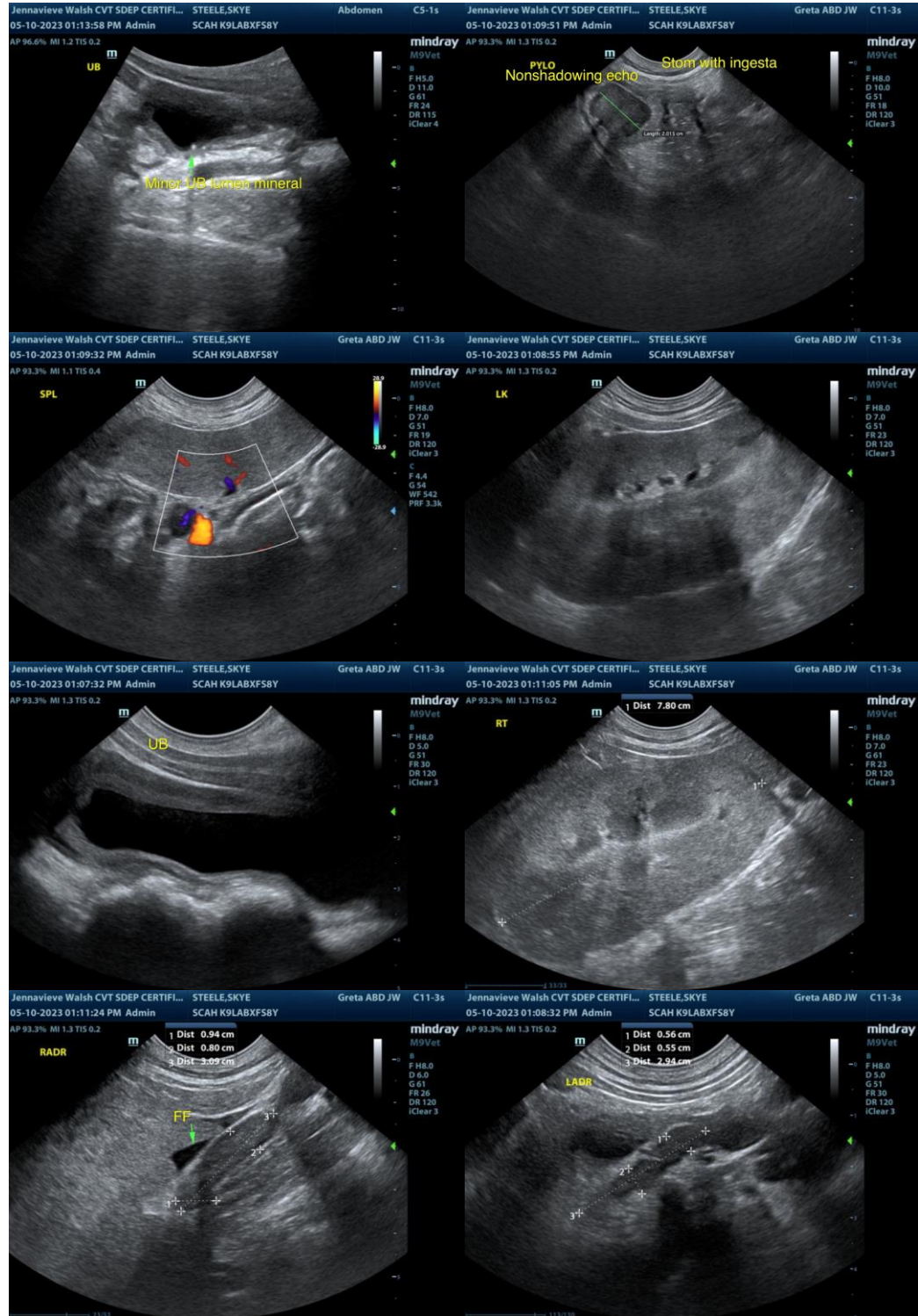
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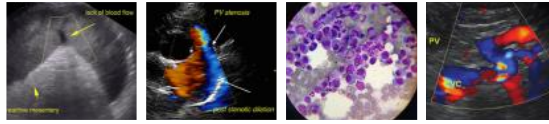
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The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology



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that was not visible in the image/video clips provided.

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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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