**PATIENT**

Stella Heidenreich

**SPECIES**

Canine

**BREED**

Chihuahua

**SEX**

FS

**AGE**

11 yr

**WEIGHT**

16 lb

**INTERPRETED BY**R. McKenzie Daniel,  
DVM, DABVP  
(Canine and Feline)**IMAGING  
PERFORMED BY**

Rachel Runnells RVT

**HOSPITAL NAME**SVS Imaging Kansas  
City**REFERRING VET**

Dr. Doyle

**INVOICE**

11042ag

**DATE**

07/05/2022

**PRESENTING CLINICAL SIGNS**

History: Presented for elevated hepatic enzymes and hepatomegaly on abdominal radiographs. No clinical signs reported at this time.

Abnormal PE/Chem/CBC/UA Results: ALT- 728 6-24-2021= 135 ALKP- 477 6-24-2021 =301  
AMY- 1500 SLIGHT ELEVATIONS AST- 142

**ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN****Urinary System**

The urinary bladder, trigone, cystourethral junction, and visible pelvic urethra to a depth of 2 cm exhibited normal thickness and tone. Anechoic urine was present in the lumen with no uroliths or sediment. The ureteral papillae were normal. The ureters were not visible which is normal. No evidence of inflammatory or neoplastic changes were noted.

Normal size was present in the kidneys. A normal 1:3 cortex / medulla ratio was maintained. The medulla and cortices were uniform in texture with some increased echogenicity and moderate loss of corticomedullary symmetry and definition expected for the age of the patient. Pinpoint areas of medullary mineralization were present bilaterally. The right kidney exhibited mild areas of asymmetrical renal marginal with potential for cortical micro infarcts. No evidence of pelvic dilation was present. The left kidney measured 4.5 cm in length. The right kidney measured 4.5 cm in length.

The area of the aortic trifurcation was free of pathology.

**Adrenal Glands**

The left adrenal gland was uniform in size and contour with a uniformly hypoechoic parenchyma. The left adrenal gland measured 0.49 cm width at the caudal pole and 0.43 cm width at the cranial pole. The right adrenal gland was uniform in size and contour with a uniformly hypoechoic parenchyma. The right adrenal gland measured 0.47 cm width at the caudal pole and 0.76 cm width at the cranial pole.

**Spleen**

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.

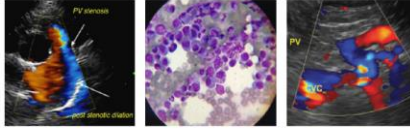
**Liver**

The liver was mildly enlarged size with normal structure and contour. The liver exhibited subtle increased parenchymal echogenicity with mild to moderate coarse echotexture. Intermittent nondisruptive discrete hypoechoic intra parenchymal nodules were noted mid liver an example measuring 0.74 cm in diameter. The hepatic and portal vasculature were normal in appearance without signs of congestion.

The gallbladder was non-distended in size with thin walls and primarily anechoic luminal content with mild nonmineralized luminal debris. No evidence of gallbladder or peripheral inflammatory criteria. The cystic and common bile ducts were normal.

**Gastrointestinal**

The stomach presented intact wall layering with a normal wall layer ratio. The lumen of the stomach was empty with no signs of ileus, obstruction or foreign material.

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The small intestine presented intact wall layering with 1:3 muscularis/mucosa ratio. 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.

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***Pancreas***

The parenchyma of the left limb, body and right limb of the pancreas presented isoechoic to the adjacent omental fat. A normal curvilinear capsule contour of the pancreas was present. The visible pancreatic duct was normal. No signs of active inflammation or neoplastic disease was evident.

**BREED**

Chihuahua

***Free Abdomen***

No overt lymphadenopathy or peritoneal effusion was present.

**SEX**

FS

**ULTRASONOGRAPHIC FINDINGS**

- Hepatopathy with intermittent discrete hypoechoic parenchymal nodules
- Minor gallbladder debris (non-mucocele)
- Bilateral moderate chronic renal changes

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**INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS****WEIGHT**

16 lb

Overall the appearance of the liver was nonspecific with considerations including vacuolar hepatopathy, inflammatory/immune mediated disease, areas of parenchymal hyperplasia, hematopoiesis, small lipogranulomas with neoplastic criteria considered a less likely differential. Some degree of nonobstructive cholestasis is suspected given the ALP elevation and gallbladder debris.

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Assuming normal clotting status a hepatic FNA for screening cytology may be considered. No evidence of active pancreatic inflammation was noted. Hepatosupportive medications including Denamarin and Ursodiol with continued monitoring of liver enzymes may prove beneficial. Core surgical biopsy is likely required for a definitive diagnosis.

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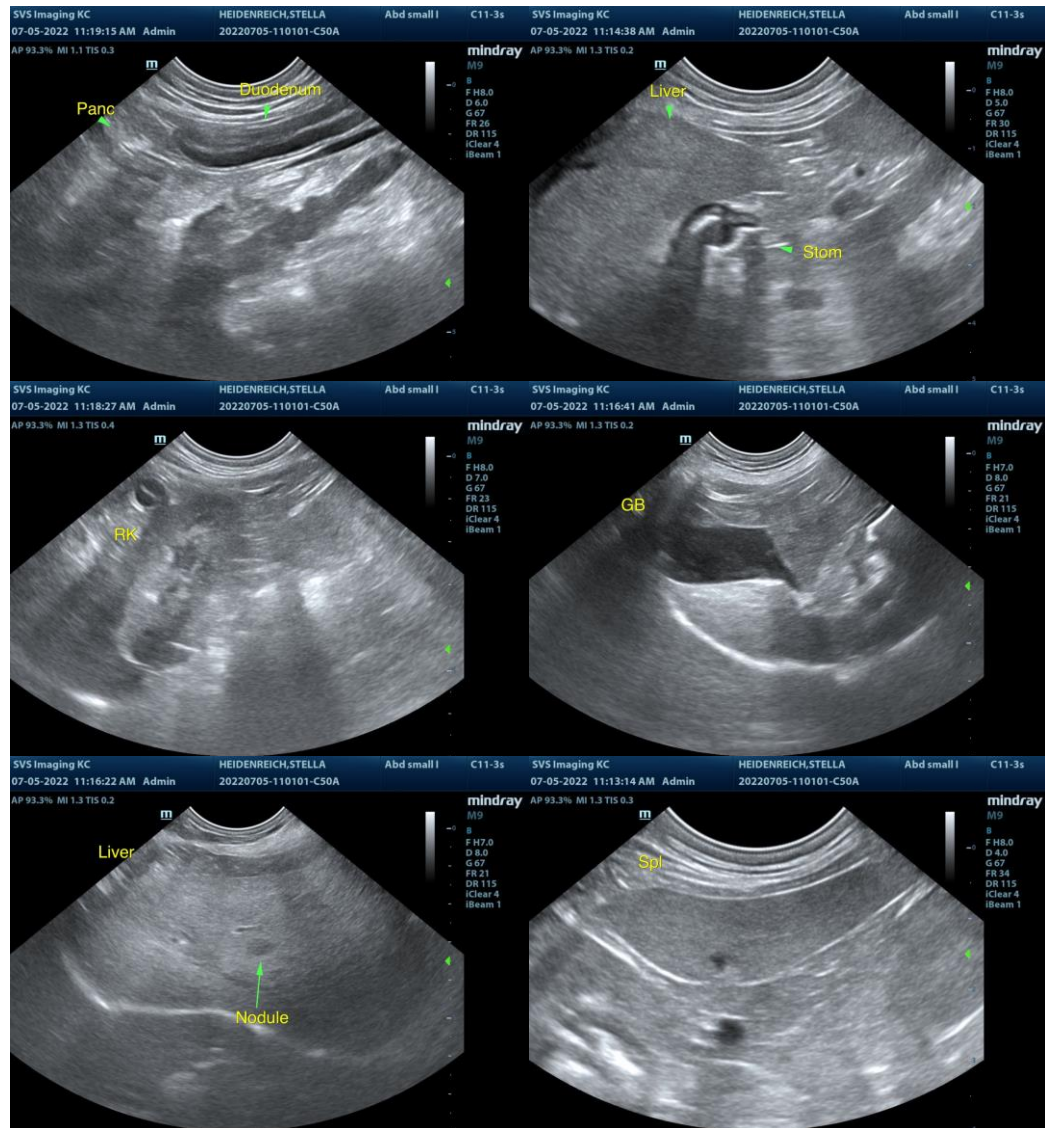
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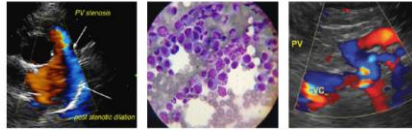
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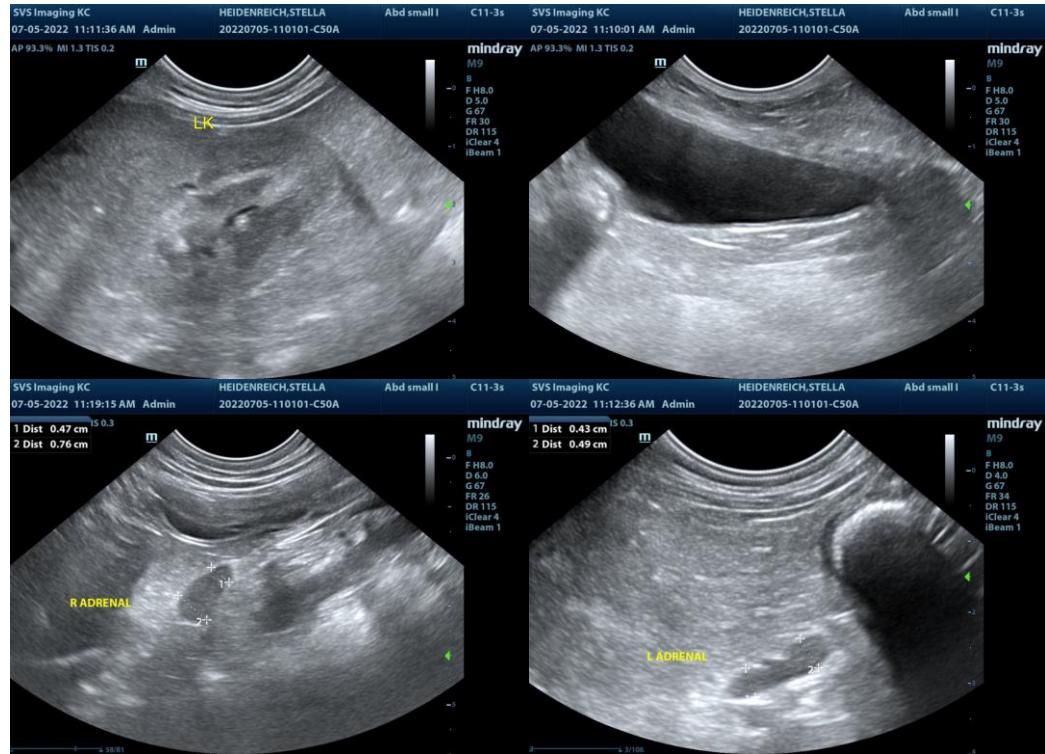
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The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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.

R. McKenzie Daniel, DVM, DABVP (Canine / Feline Practice)

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