



## PATIENT

Hemi Penner

## SPECIES

Canine

## BREED

Chihuahua Mix

## SEX

FS

## AGE

11yr

## WEIGHT

9.6kg

## INTERPRETED BY

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

## IMAGING PERFORMED BY

Dr Caroline Tan

## HOSPITAL NAME

Fish Creek Pet Hospital

## REFERRING VET

Dr Laura McKay

## INVOICE

24501

## DATE

04/13/2026

## PRESENTING CLINICAL SIGNS

Newly diagnosed DM was hospitalized for DKA a few weeks ago. Currently on 4 units caninsulin SQ BID. Concern for underlying Cushings or other co-morbidity that may contribute to poor control. Has been reading HI most of the time on Libre but did have a drop to 12mmol/L the other day. Also has a 4/6 heart murmur.

Abnormal PE/Chem/CBC/UA Results: Bloodwork was performed and revealed a leukocytosis (19.27), neutrophilia (14.65), monocytosis (3-47), thrombocytosis (503), marked hyperglycemia (28.62), elevated creatinine (207), elevated BUN (17.5), and mildly elevated ALT (167) and ALP (304).

## ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN

### Urinary System

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 no evidence of urine/lumen sediment, mineral, or calculi. The ureteral papillae were normal. The ureters were not visible which is normal. No evidence of inflammatory or neoplastic changes was noted.

Normal size and margination were 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 mild loss of corticomedullary symmetry and definition expected for the age of the patient. Mild bilateral pyelectasia was present. The left kidney measured 5.4 cm in length. The right kidney measured 5.3 cm in length.

The area of the aortic trifurcation was free of pathology.

### Adrenal Glands

The bilateral adrenal glands were mildly enlarged based on caudal pole measurement and body weight. Mild parenchyma heterogeneity and mild capsule asymmetry was present without suspicion for overt neoplasia. The left adrenal gland measured 0.66 cm width. The right adrenal gland measured 0.60 cm width.

### Spleen

The spleen exhibited primarily finely textured and homogenous parenchyma which was hyperechoic to the liver and renal cortical parenchyma. A well-defined, symmetrical, hyperechoic nodule was present in the mid medial spleen to perihilar parenchyma measuring 0.40 cm in diameter. 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 or neoplastic changes were not noted. The echogenic nodules tend to trend benign and are most consistent with benign hyperplasia or myelolipomas.

### Liver/Gallbladder

The liver was subjectively normal in size, structure, and contour. The liver parenchyma was mildly nonuniform and hypoechoic to the spleen with a moderate coarse echotexture and subjective mild to variable lobar non-homogenous parenchymal remodeling. The hepatic and portal vasculature were normal in appearance without signs of congestion. Several to multiple variably sized non-homogenous hyperechoic intraparenchymal hepatic nodules were present. An example measured 1.4 cm in



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diameter. The gallbladder was non-distended in size with thin walls and mild, gravity dependent hyper echoic non-organized debris. 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.

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 mechanical/metabolic 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 remodeled parenchyma compared to adjacent omentum. No signs of active inflammation or neoplasia.

### **Free Abdomen**

No omental masses, overt lymphadenopathy or peritoneal effusion was present.

## **ULTRASONOGRAPHIC FINDINGS**

### **Primary**

- Chronic renal changes exhibiting pyelectasia
- Bilateral mild adrenomegaly
- Hepatopathy exhibiting parenchymal remodeling and hyperechoic intraparenchymal nodules
- Mild gallbladder debris (non-mucocele)
- Hyperechoic splenic nodule
- Pancreatic remodeling

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

Given adrenomegaly and potential diabetic dysregulation, adrenal work-up with ACTH stimulation test given diabetes is warranted. The hepatosplenic nodules, although non-specific, are suggestive of benign criteria, i.e. nodular hyperplasia, granulomas, or myelolipomas, with emerging to low-grade hepatosplenic neoplastic nodules thought less likely. Age-related or benign pancreatic remodeling or chronic pancreatitis is possible. Correlation with a spec CPL is recommended. A urine C/S assuming glucosuria is indicated.

Hepatosupportive medications with sonographic monitoring of the hepato-splenic nodules for evidence of progression is recommended



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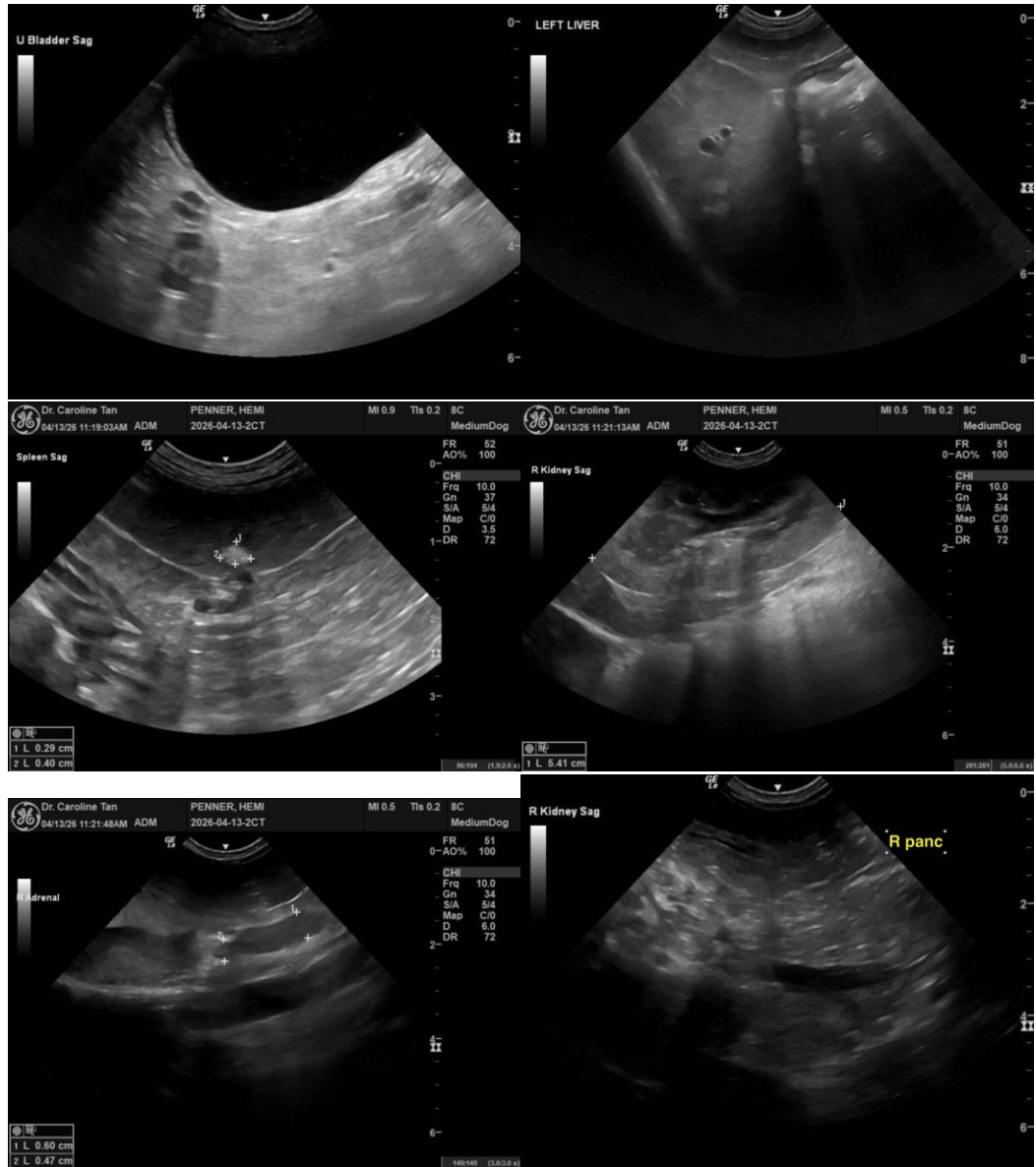
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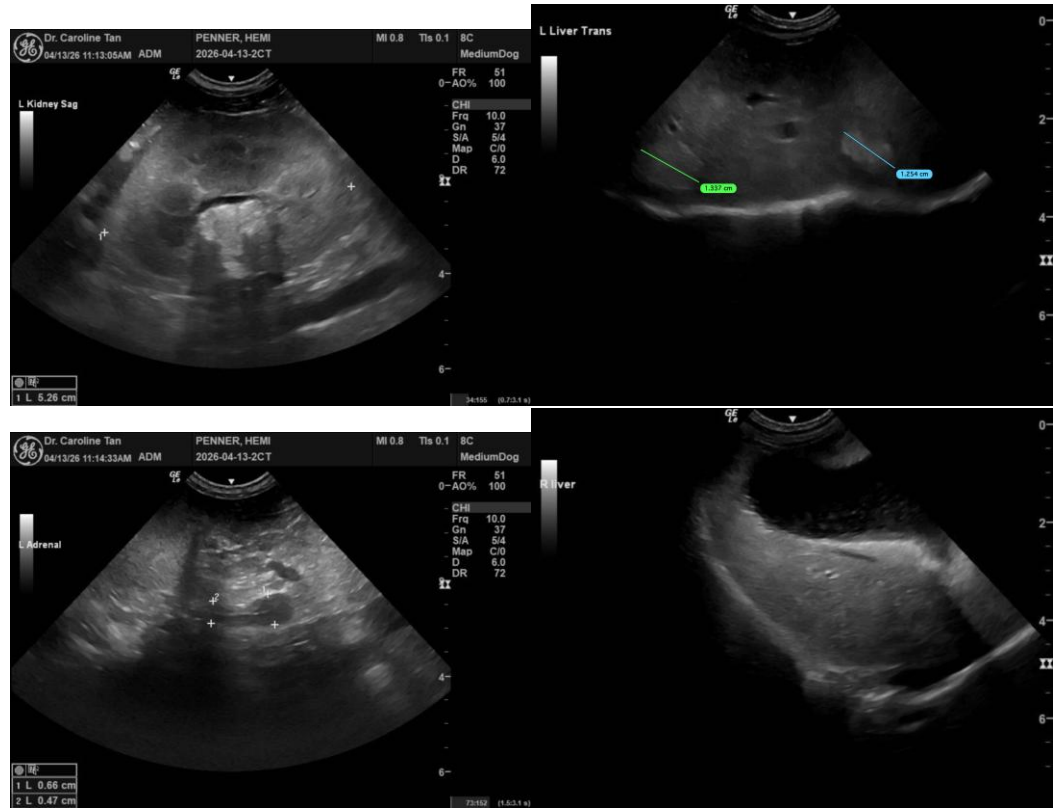
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The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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)  
[info@sonopath.com](mailto:info@sonopath.com)