

**PATIENT**

Nina Glain

**PRESENTING CLINICAL SIGNS**

Chief Concern / Provisional Diagnosis: ~Nina has an increasing murmur of 5-6/6 on exam and in addition despite medication, still has a soft cough and the liver values are continuing to increase. Owner desires to have a dental with extractions. ~ Relevant Medical History and Physical Exam findings: ~Heart murmur 5-6/6 and liver enlargement is noted, plus pet has moderate dental issues with a couple painful teeth.~ Recent Diagnostics: Relevant Laboratory Results / Abnormalities: ~BUN= 55 Creat 2.4, ALT=567, ALP=319~ Current medications (include full name, dosage and frequency): ~Spironolactone 10mg SID , Doxycycline 25mg BID, Furosemide 6.25mg BID, Denamarin 225mg chewable ONCe daily, Vetmedin 1.25mg, 1.5tablets BID, Coenzyme Q10 Daily~ Relevant Radiograph Findings(email radiographs if available): ~See radiographs. There should be prior rads and current rads that are post doxycycline and lasix and after starting these medications. Liver enlargement. Added spiroloactone after renal values went up, so could decrease lasix to SID.~

**SPECIES**

Canine

**BREED**

Chihuahua

**SEX**

Spayed Female

**ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN**

**Urinary System**

**AGE**

12 Years

The urinary bladder is moderately distended with anechoic urine. The Bladder wall, trigone, ureteral papillae and visible urethra (to a depth of 2cm) appear normal with no evidence of wall thickening, mucosal irregularities, masses or cystic calculi.

**WEIGHT**

11 Pounds

The left kidney has a normal shape and size (3.56 cm) with too numerous to count small cortical cysts. Overall echogenicity is slightly hyperechoic with poor corticomedullary distinction and a typical 1:3 cortex:medulla ratio. There is no evidence of perinephric inflammation or effusion. There is no evidence of pyelectasia, nephroliths, infarcts or hydroureter. Renal vasculature is normal.

**INTERPRETED BY**

Kathleen Sennello DVM,  
MS, Diplomate ACVIM  
(Small Animal Internal  
Medicine)

The right kidney has a normal shape and size (3.88 cm) with too numerous to count cortical cysts and pyelectasia at 0.2 cm. Overall echogenicity is slightly hyperechoic with poor corticomedullary distinction and a typical 1:3 cortex:medulla ratio. There is no evidence of perinephric inflammation or effusion. There is no evidence of nephroliths, infarcts or hydroureter. Renal vasculature is normal.

**Adrenal Glands**

**IMAGING PERFORMED BY**

Loetitia Saint-Jacques, RVT

The left adrenal gland is normal in size measuring 0.52 cm at the caudal pole. It is observed in its normal position cranial to the left renal artery. It is normal in appearance (uniformly hypoechoic) and shape with no evidence of a mass effect.

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The right adrenal gland is normal in size measuring 0.40 cm at the caudal pole. It is observed in its normal position between the cranial aspect of the right kidney and the caudal vena cava. It is normal in appearance (uniformly hypoechoic) and shape with no evidence of a mass effect.

**REFERRING VET**

Dr. Sarah Kalivoda

**Spleen**

The spleen is subjectively normal in size, echotexture is homogenous, and the splenic capsule is smooth with no irregularities. The blood flow through the hilus and splenic parenchyma appears normal. No focal parenchymal abnormalities are visualized.

**INVOICE**

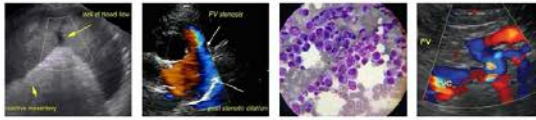
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**Liver**

The liver is subjectively normal in size, and echogenicity with smooth peripheral margins. The parenchyma is heterogenous in echotexture with subtle, indistinct focal mottling. The visible portions of

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Nina Glain the vasculature and biliary tract appear normal. There is a poorly defined 0.99 cm hypoechoic nodule visualized within the parenchyma.

**SPECIES**

Canine

The gall bladder lumen is moderately distended. The wall of the gall bladder is not thickened and has a smooth mucosal surface. There is a large amount of non-organized echogenic debris. The cystic and common bile ducts are normal/not visible.

**BREED**

Chihuahua

**Gastrointestinal**

The stomach contains minimal luminal contents. It measures at a normal thickness of <0.7cm with some variability due to the presence of rugal folds. The distinction of the gastric wall layers is adequate and there is no impression of reduced peristaltic activity. No masses or focal lesions were observed.

**SEX**

Spayed Female

The visualized areas of duodenum, jejunum and ileum have a relatively uniform diameter with minimal fluid distension. Wall thickness is normal. Bowel loops follow a curvilinear path with distinct wall layering maintaining the typical 1:3 muscularis:mucosa layer ratio. Duodenum wall measured 0.41 cm. Jejunum wall measured 0.31 cm. Visualized peristalsis appears appropriate. There were no focal lesions consistent with obstruction or a mass effect observed.

**AGE**

12 Years

The ileocecal junction was visualized and exhibited normal intact wall layering and is subjectively of normal thickness. Sections of colon are visualized with formed fecal material and gas shadowing distally. There is no observed focal or generalized colon wall thickening or loss of layering.

**WEIGHT**

11 Pounds

**Pancreas**

The pancreas is normal and isoechoic to surrounding mesentery. There is no evidence of nodules or cystic lesions. There is no evidence of regional mesenteric inflammation or fluid.

**INTERPRETED BY**

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MS, Diplomate ACVIM  
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**Free Abdomen**

Evaluation of the peritoneal cavity did not reveal any evidence of effusion, or subjective lymphadenomegaly. The Medial iliac nodes appear normal and there was no evidence of a caudal aortic thrombus at the bifurcation. The omentum is of normal uniform echogenicity.

**IMAGING PERFORMED BY**

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**ULTRASONOGRAPHIC FINDINGS**

- Decreased corticomedullary distinction in both kidneys with cortical cysts and right-sided pyelectasia – Mild loss of corticomedullary distinction in both kidneys could be consistent with chronic degenerative disease or interstitial nephrosis. Pyelectasia of the right kidney could be consistent with pyelonephritis, chronic renal disease, secondary to PU/PD or fluid therapy (if applicable), other.
- Heterogeneous liver with hypoechoic nodule – The diffuse hepatic changes are non-specific and could be consistent with vacuolar hepatopathy, nodular hyperplasia, inflammatory/immune-mediated disease, fibrosis, extramedullary hematopoiesis, toxic hepatopathy (e.g., copper), infiltrative neoplasia (less likely) or other hepatopathy.
- Large gallbladder sludge – The significance of the aggregated gallbladder sludge is unclear. This could represent an early mucocele, cholestasis, or may be secondary to fasting.

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**INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS**

The changes observed in the kidneys are most consistent with chronic renal disease. There is right-sided

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Nina Glain pyelectasia as well, so pyelonephritis is possible, but this could also be due to diuresis and diuretic use. Recommend blood pressure, urinalysis and culture to further evaluate the renal disease present.

**SPECIES**

Canine

The liver is large and mottled with a small hypoechoic nodule. Additionally, the gallbladder is distended with a large amount of gallbladder sludge. The wall appears relatively healthy. I would consider:

**BREED**

Chihuahua

- Consider starting Ursodiol as a preventative measure and continue to monitor the gallbladder closely.
- Consider liver function test
- If clinically appropriate, consider testing for Leptospirosis
- Evaluate for medications that can cause elevations in liver enzymes (Doxycycline can do this)
- If liver function is abnormal and/or this patient is not feeling well to possible liver disease, then recommend a fine needle aspirate of the liver.
- Recommend continued monitoring of the liver nodule observed.
- If not already done, consider starting Denamarin.

**SEX**

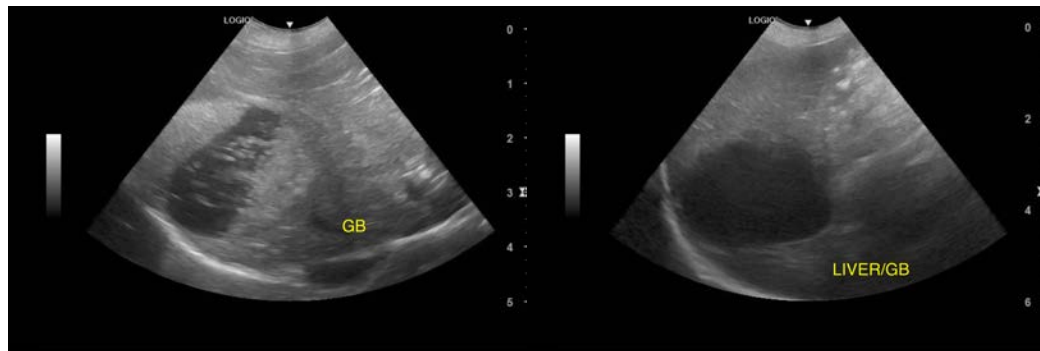
Spayed Female

**AGE**

12 Years

**WEIGHT**

11 Pounds

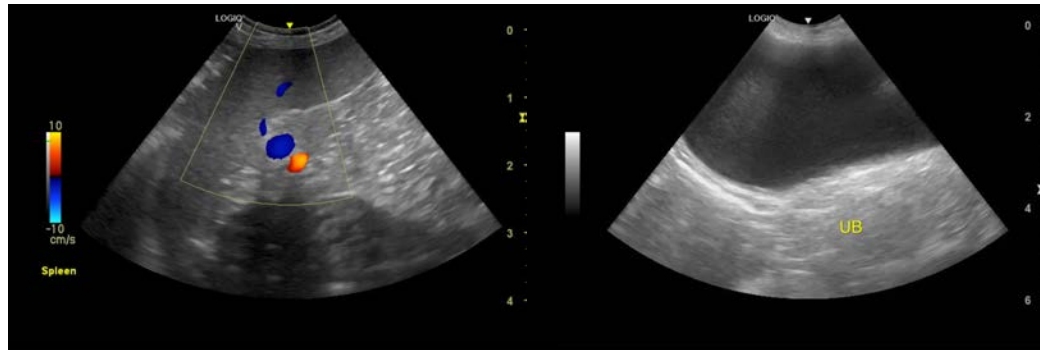


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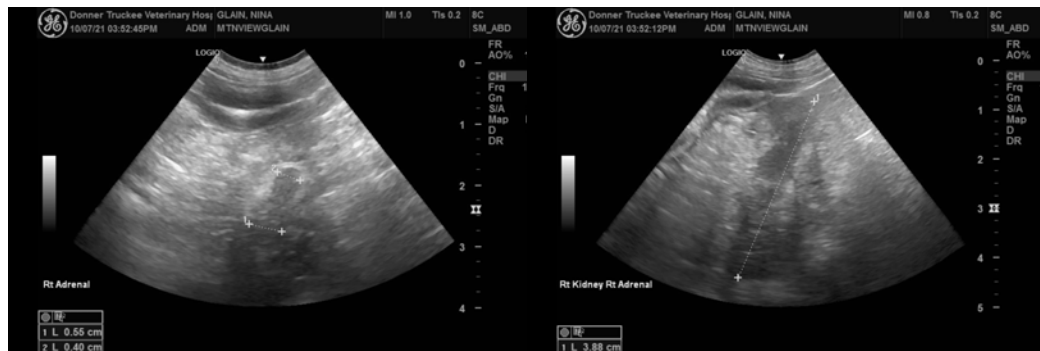
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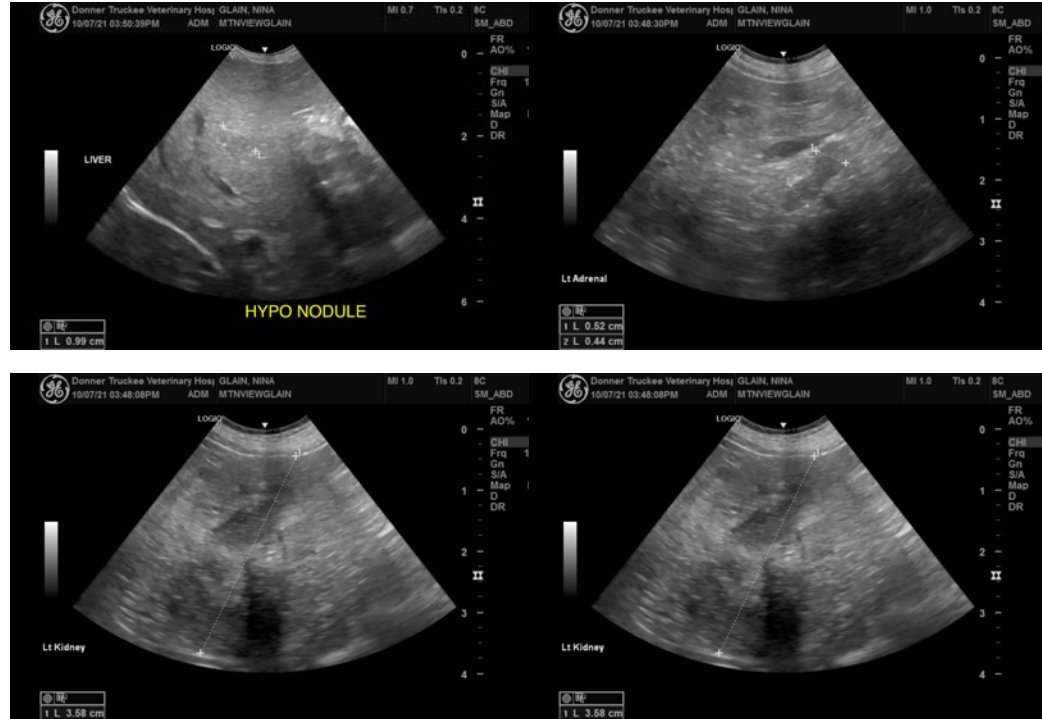
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The information and recommendations provided are based on the images presented by the referring veterinarian. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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.

Kathleen Sennello DVM,MS, Diplomate ACVIM (Small animal Internal Medicine)

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