



**PATIENT**

Gadget Markiw

**SPECIES**

Canine

**BREED**

Shep Heeler Mix

**SEX**

FS

**AGE**

13

**WEIGHT**

29kg

**INTERPRETED BY**

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

**IMAGING PERFORMED BY**

Dr. Belan

**HOSPITAL NAME**

DeWinton Animal  
Clinic

**REFERRING VET**

Dr. Pazej

**INVOICE**

13184ag

**DATE**

03/16/2023

**PRESENTING CLINICAL SIGNS**

Previous scan June 15,2022 Invoice 16098- no clinical issues follow up scan to see if previous lesions have progressed. Has been on Ursodol

Abnormal PE/Chem/CBC/UA Results: Continued elevation of ALP and cholesterol. LDDST pending.

**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 uroliths or previously visualized mineral. The ureteral papillae were normal. The ureters were not visible which is normal. No evidence of inflammatory or neoplastic changes were 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. No evidence of pelvic dilation was present. Pinpoint medullary mineral was noted. The left kidney measured 6.1 cm in length. The right kidney measured 6.9 cm in length.

The area of the aortic trifurcation was free of pathology.

**Adrenal Glands**

The left adrenal gland exhibited mild progressive enlargement compared to the previous study with heterogenous mildly progressive nodular parenchyma. The left adrenal gland cranial pole nodule measured 1.2 cm x 1.0 cm. Overall the left adrenal gland measured 1.2 cm cranial pole x 1.1 caudal pole width.

The right adrenal gland appeared to be stasis exhibiting subtle non-homogenous parenchyma. The right adrenal gland measured 0.64 cm width at the caudal pole and 0.60 cm width at the cranial pole.

**Spleen**

The spleen exhibited primarily finely textured and homogenous parenchyma which was hyperechoic to the liver and renal cortical parenchyma. Multifocal, well-defined, symmetrical, hyperechoic nodules were present throughout the cranial to caudal parenchyma, an example measured 1.0 cm in diameter. The nodules appeared to exhibit mild distal acoustic shadowing. 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 hyperechoic nodules tend to trend benign and are most consistent with benign hyperplasia or myelolipomas.

**Liver/Gallbladder**

The liver presented borderline enlarged in size. The parenchyma of the liver was subjectively normal in echogenicity compared to the spleen and renal cortices. The liver parenchyma was uniform with a mildly coarse echotexture. Intermittent discrete mildly hyperechoic nodules were present measuring 1.8 cm in diameter, likely consistent with lipogranulomas or hyperplasia. The capsule of the liver was symmetrically rounded to mildly swollen in margination. The hepatic and portal vasculature were normal in appearance without signs of congestion. The gallbladder was non-distended in size with primarily anechoic luminal content and persistent moderate hyperechoic non-organized debris. No



**PATIENT**

Gadget Markiw

evidence of gallbladder or peripheral gallbladder inflammation was present. The cystic and common bile ducts were normal.

**Gastrointestinal**

**SPECIES**

Canine

The stomach presented intact wall layering with a normal wall layer ratio. The lumen of the stomach contained mild non-shadowing ingesta consistent with food with no signs of ileus, obstruction or foreign material.

**BREED**

Shep Heeler Mix

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.

**SEX**

FS

**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.

**AGE**

13

**Free Abdomen**

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

**WEIGHT**

29kg

**ULTRASONOGRAPHIC FINDINGS**

- Static mild chronic renal changes.
- Static benign splenic nodules-myelolipomas, mineralization possible.
- Mildly progressive nodular left adrenal gland, static right adrenal gland.
- Vacuolar hepatopathy pattern with parenchymal remodeling and focal benign discrete intraparenchymal nodules.
- Persistent static mild gallbladder debris (non-mucocele).

**INTERPRETED BY**

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

**INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS**

The clinical significance of the mild progressive nodular left adrenal gland is unclear given lack of reported clinical signs. Correlation with pending LDDST is suggested. Considerations continue to include adenomatous change, benign hyperplasia, while the possibility of emerging neoplasia i.e., pheochromocytoma cannot be excluded. Continued assessment for evidence of hypertension +/- urine catecholamine level if hypertension is documented is recommended.

**IMAGING PERFORMED BY**

Dr. Belan

Continued monitoring the left adrenal gland for evidence of progression with recheck in 6 weeks would be ideal. The addition of Denamarin to current Ursodiol may prove beneficial.

**HOSPITAL NAME**

DeWinton Animal  
Clinic

**REFERRING VET**

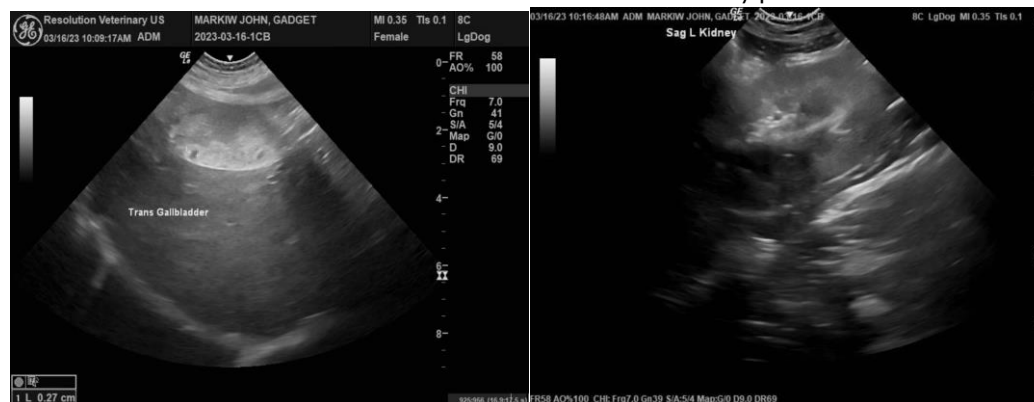
Dr. Pazej

**INVOICE**

13184ag

**DATE**

03/16/2023





**PATIENT**

Gadget Markiw

**SPECIES**

Canine

**BREED**

Shep Heeler Mix

**SEX**

FS

**AGE**

13

**WEIGHT**

29kg

**INTERPRETED BY**

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

**IMAGING PERFORMED BY**

Dr. Belan

**HOSPITAL NAME**

DeWinton Animal  
Clinic

**REFERRING VET**

Dr. Pazej

**INVOICE**

13184ag

**DATE**

03/16/2023



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.



**PATIENT**

Gadget Markiw

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.

**SPECIES**

Canine

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

[mac.daniel@sonopath.com](mailto:mac.daniel@sonopath.com)

**BREED**

Shep Heeler Mix

**SEX**

FS

**AGE**

13

**WEIGHT**

29kg

**INTERPRETED BY**

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

**IMAGING  
PERFORMED BY**

Dr. Belan

**HOSPITAL NAME**

DeWinton Animal  
Clinic

**REFERRING VET**

Dr. Pazej

**INVOICE**

13184ag

**DATE**

03/16/2023