



PATIENT

Dixie Devlin

SPECIES

Canine

BREED

Papillion

SEX

FS

AGE

11 years

WEIGHT

3.5 kg

INTERPRETED BY

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

IMAGING PERFORMED BY

Donna Markland,
DVM

HOSPITAL NAME

Island Mobile Pawas
VS

REFERRING VET

Chemainus AH

INVOICE

14637

DATE

8/18/22

PRESENTING CLINICAL SIGNS

Presented last week for anorexia and diarrhea. PE was unremarkable. CBC/Chem was normal, as was cPLI. Empiric therapy with mirtazapine, cerenia, and metronidazole was not successful. Still anorexic. Blood pressure measurements were done following this scan. Systolic values ranged from 140-161.

ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN

Urinary System

The urinary bladder, trigone, cystourethral junction, and visible pelvic urethra to a depth of 2.0 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 was noted.

Focal to Intermittent, mildly prominent medial Iliac lymph nodes were present. The lymph nodes were essentially isoechoic to adjacent omentum without evidence of peripheral inflammation and maintaining a normal width: length ratio (<0.5). An example lymph node measured 0.3 cm diameter. These lymph nodes are not consistent with inflammatory or neoplastic criteria and are likely incidental.

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. Scant bilateral pyelectasia was present. The left kidney measured 3.3 cm in length. The right kidney measured 3.8 cm in length.

Adrenal Glands

A non-expansive, discrete, hyperechoic nodule was present in the cranial pole of the left adrenal gland with mild associated symmetrical capsule expansion. The nodule did not exhibit signs of mineralization or vascular invasion. The nodule measured 0.55 cm x 0.52 cm. The overall left adrenal gland measured 1.5 cm length x 0.58 cm width at the cranial pole and 0.39 cm width at the caudal pole.

A mildly expansive, well-demarcated, uniform hyperechoic nonmineralized nodule was present in the mid to cranial right adrenal gland with secondary generalized mild right adrenomegaly. No obvious evidence of vascular invasion or capsule escape associated with the nodule in the right adrenal gland. The right adrenal nodule measured 1.1 cm x 1.0 cm. The overall right adrenal gland measured 2.0 cm length x 1.0 cm width.

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/ 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



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benign parenchymal remodeling. The hepatic and portal vasculature were normal in appearance without signs of congestion. The gallbladder was nondistended in size with mild, nonorganized, hyperechoic gallbladder debris was present. The gallbladder was otherwise normal. The common bile duct was normal.

Gastrointestinal

The stomach presented intact wall layering with a normal wall layer ratio. The lumen of the stomach was empty with mild luminal gas and no signs of ileus, obstruction, or foreign material. The gastric body wall width measured 0.30cm.

The small intestine presented intact yet segmentally prominent duodenojejunal wall layering including segmental mild duodenojejunal mucosal speckling. No evidence of mechanical / metabolic small intestinal ileus was noted. The duodenum wall measured 0.37 cm width. The jejunum wall measured 0.25 cm width.

The colon walls presented intact yet mildly prominent wall layering with mild thickened to echogenic submucosa. The descending colon contained a mild amount of semi formed to soft feces consistent with diarrhea. The descending colon wall width measured 0.25 cm.

Pancreas

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

Free Abdomen

No overt lymphadenopathy or peritoneal effusion was present.

ULTRASONOGRAPHIC FINDINGS

- Mildly expansive, well-demarcated right adrenal nodule, possible emerging mass
- Concurrent discrete left adrenal nodule
- Gastroenterocolitis pattern - possible inflammatory bowel
- Mild chronic renal changes with scant bilateral pyelectasia
- Mild hyperechoic gallbladder debris (non-mucocele)

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

This study revealed bilateral adrenal nodules, more prominent in the right adrenal gland. General considerations may include functional vs. nonfunctional adrenal adenomas, benign hyperplasia, or lipogranulomas, while the possibility of emerging neoplastic criteria, specifically in the right adrenal gland, such as pheochromocytoma, adenocarcinoma, or other, is possible.

Urine catecholamine assessment at Marsh Field Labs could be considered for further assessment. Serial monitoring of systemic BP is suggested, given the potential for mild hypertension. Likewise, and pending additional diagnostics, sonographic monitoring of the bilateral adrenal glands for evidence of progressive nodular changes or right adrenomegaly with initial recheck in 4-6 weeks is recommended.



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Pending additional assessment, or if evidence of progressive nodular changes or adrenomegaly, right adrenalectomy may be indicated.

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Further assessment of the gastrointestinal signs may include a full GI panel to include PLI/TLI/Cobalamin/Folate as well as fresh fecal analysis to rule out parasitic ova / Giardia. No overt evidence of gastrointestinal neoplastic criteria was noted. Continued GI support with potential hydrolyzed diet trial, high colony count probiotic, +/- prophylactic deworming, even if fecal testing is negative, may prove beneficial.

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Marsh Field labs:

<https://www.marshfieldlabs.org/labnews/Documents/Pheochromocytoma%20Diagnosis%20Update%20BF.pdf>

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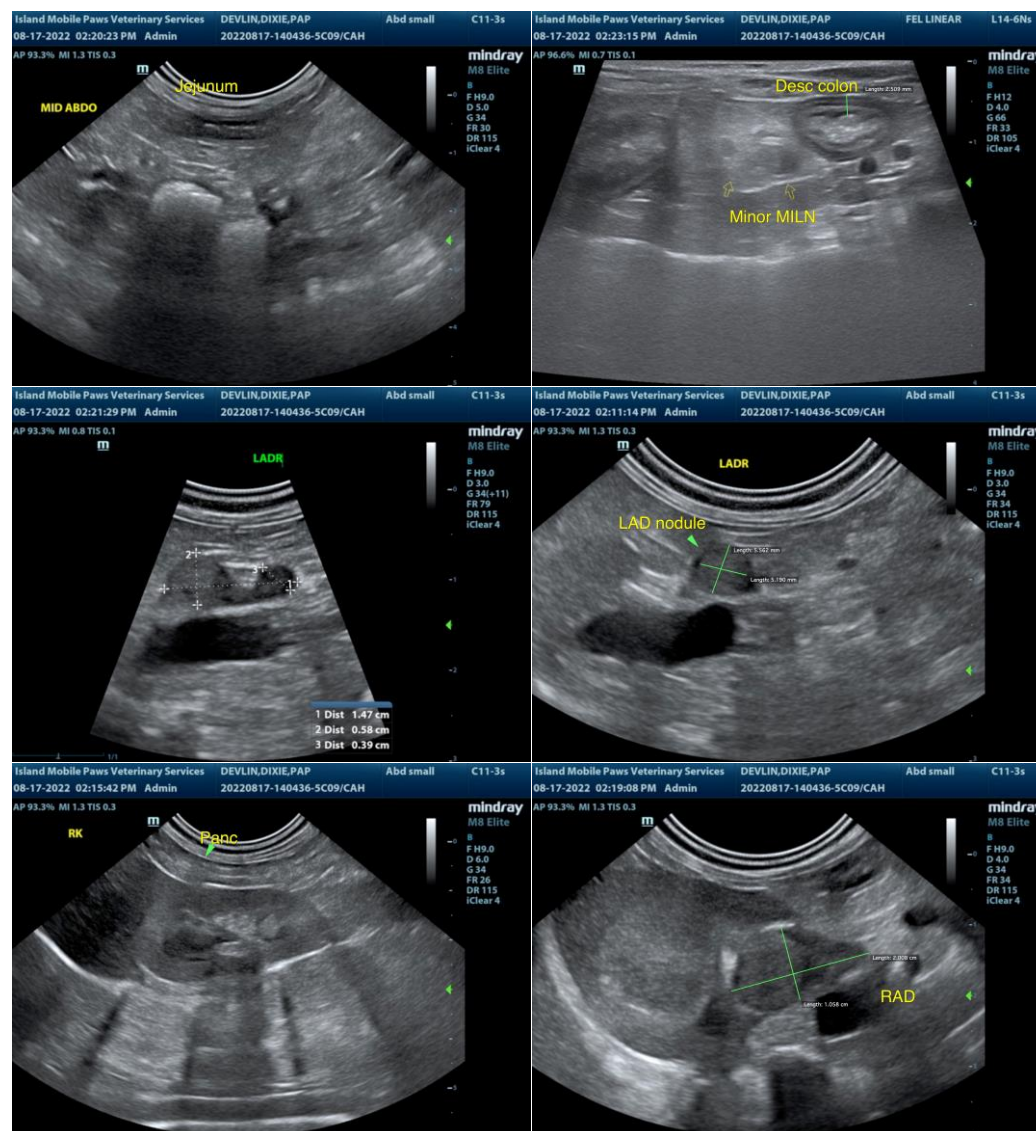
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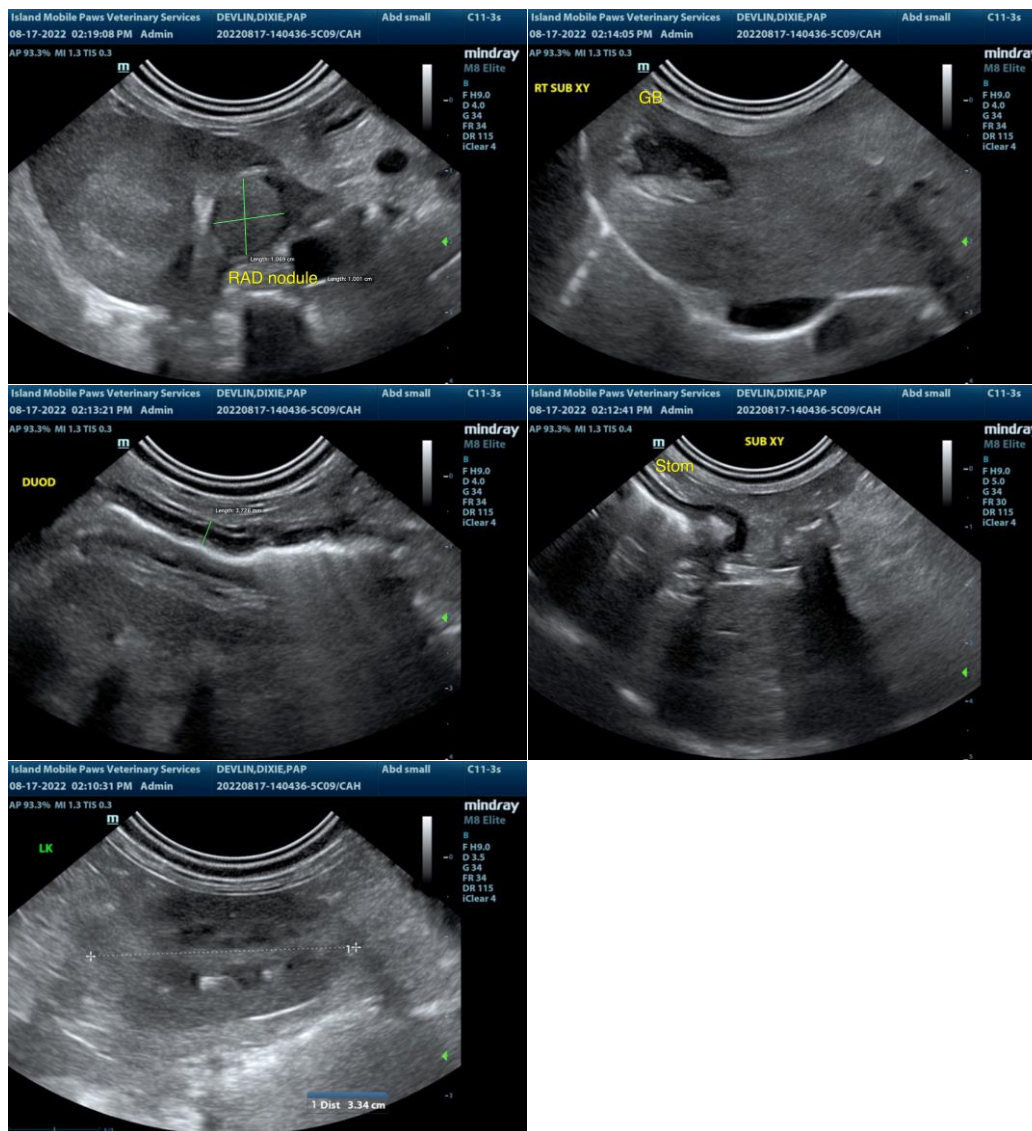
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The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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