



PATIENT

Greta Turowsky

SPECIES

Canine

BREED

Pug

SEX

Spayed Female

AGE

14 Years

WEIGHT

26 Pounds

INTERPRETED BY

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

IMAGING PERFORMED BY

Diane McFadden

HOSPITAL NAME

Millburn Vet Hospital

REFERRING VET

Dr. Turowsky

INVOICE

45987

DATE

3/16/23

PRESENTING CLINICAL SIGNS

Two suspected syncopal episodes after coughing. No murmur ausculted or arrhythmia noted. Thoracic rads unremarkable. not on any meds

ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN

Urinary System

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.

The left kidney has a normal shape and size (4.6 cm). Overall echogenicity is slightly hyperechoic with poor corticomedullary distinction and a typical 1:3 cortex:medulla ratio. There is no evidence of focal perinephric inflammation or effusion. There is no evidence of pyelectasia, nephroliths, infarcts or hydroureter. Renal vasculature is normal.

The right kidney has a normal shape and size (5.64 cm). Overall echogenicity is slightly hyperechoic with poor corticomedullary distinction and a typical 1:3 cortex:medulla ratio. There is no evidence of focal perinephric inflammation or effusion. There is no evidence of pyelectasia, nephroliths, infarcts or hydroureter. Renal vasculature is normal.

Adrenal Glands

The left adrenal gland is normal in size measuring 0.51 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.

The right adrenal gland is normal in size measuring 1.49 cm at the cranial pole, 0.57 cm at the caudal pole, and 2.22 cm in length. It is observed in its normal position between the cranial aspect of the right kidney and the caudal vena cava. It is somewhat atypical in appearance in that there is a hyperechoic nodule at the cranial pole measuring approximately 1.42 cm x 0.99 cm. No evidence of vascular invasion visualized.

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.

Liver

The liver is large in size and irregular. The parenchyma is heterogenous in echotexture with subtle, indistinct focal mottling. The visible portions of the vasculature and biliary tract appear normal. There are too numerous to count ill-defined hypoechoic nodules distributed throughout the hepatic parenchyma.

The gallbladder lumen is moderately distended. The wall of the gall bladder is not thickened and has a smooth mucosal surface. Luminal contents are mild and primarily anechoic. The cystic and common bile ducts are normal/not visible.



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Gastrointestinal

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The stomach contains moderate shadowing ingesta. 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.

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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 measures 0.51 cm. Jejunum wall measures 0.30 cm. Visualized peristalsis appears appropriate. There were no focal lesions consistent with obstruction or a mass effect observed.

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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.

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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.

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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.

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ULTRASONOGRAPHIC FINDINGS

- Decreased corticomedullary distinction in both kidneys – The bilateral renal findings are consistent with age-related change.
- Large, heterogeneous, nodular liver – 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. The nodules observed trend toward a more benign process, but underlying neoplasia cannot be ruled out.
- Hyperechoic nodule at the cranial pole of the right adrenal gland – This lesion could represent a benign or neoplastic lesion (hyperplasia, adenoma, carcinoma, pheochromocytoma, etc.).

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INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

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Today's scan is relatively normal for a 14 year old Pug. The changes in the liver are most consistent with a vacuolar hepatopathy, although underlying neoplasia cannot be ruled out. Correlate with bloodwork. If there is concern, you could consider a liver function test and a fine needle aspirate of the liver.

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There is a hyperechoic nodule visualized associated with the right adrenal. Correlate this with previous ultrasound imaging to determine if the lesion appears to be changing significantly. At this time, it appears relatively quiet, and there is no overt vascular invasion. Recommend a blood pressure evaluation. If hypertension is present, recommend catecholamine measurements, looking for evidence of a pheochromocytoma. If signs of Cushing's are present, you could consider adrenal function testing. If surgical removal is desired, I'd recommend a contrast CT scan to further evaluate for any evidence of metastasis or vascular invasion. Otherwise, continued monitoring with ultrasound could be considered.

There is no obvious cause observed to explain the episodes of collapse noted, although further



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evaluation for the possibility of a pheochromocytoma and hypertension spikes could be considered (as recommended).

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Recommend three view thoracic radiographs to evaluate for possible concurrent thoracic disease/involvement.

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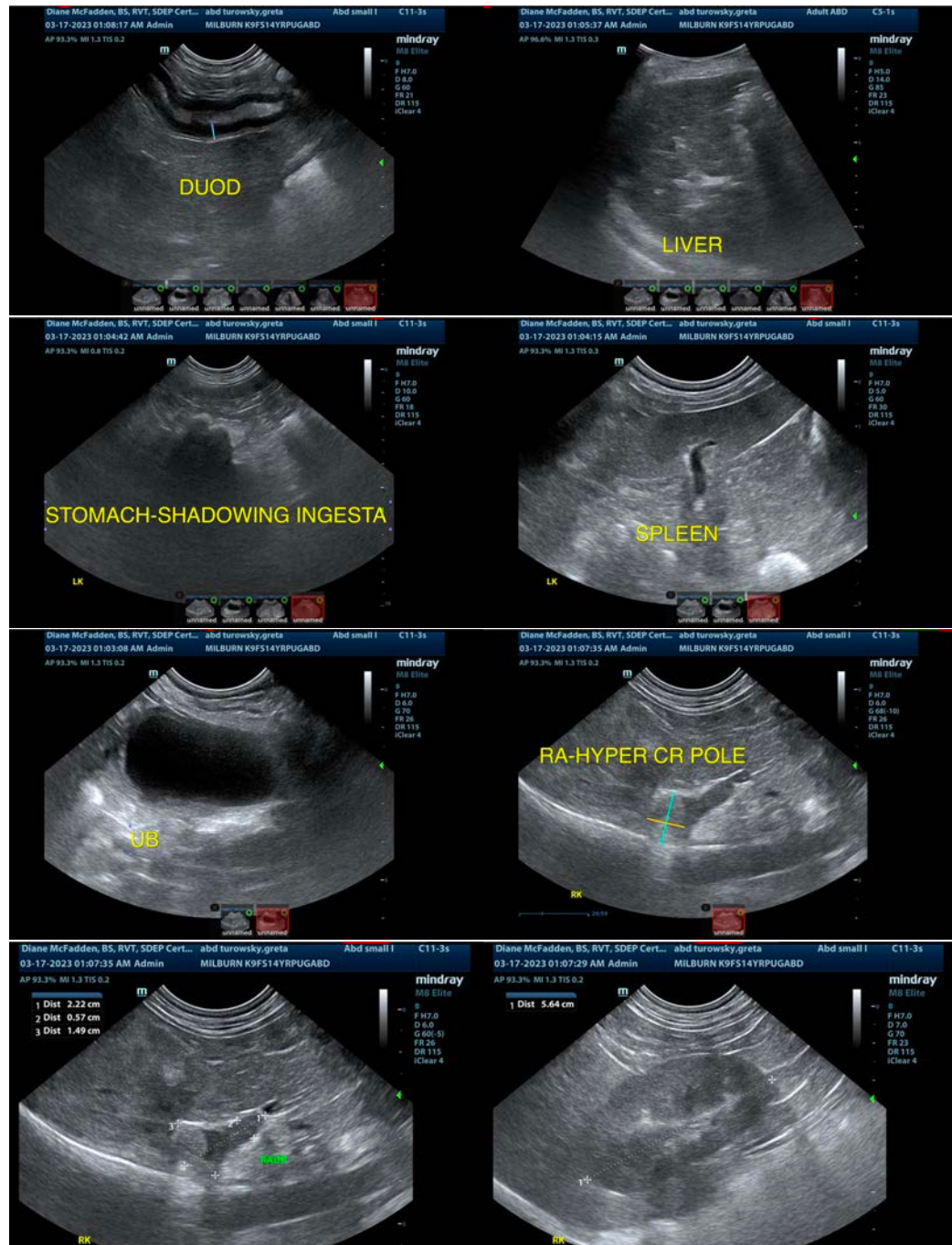
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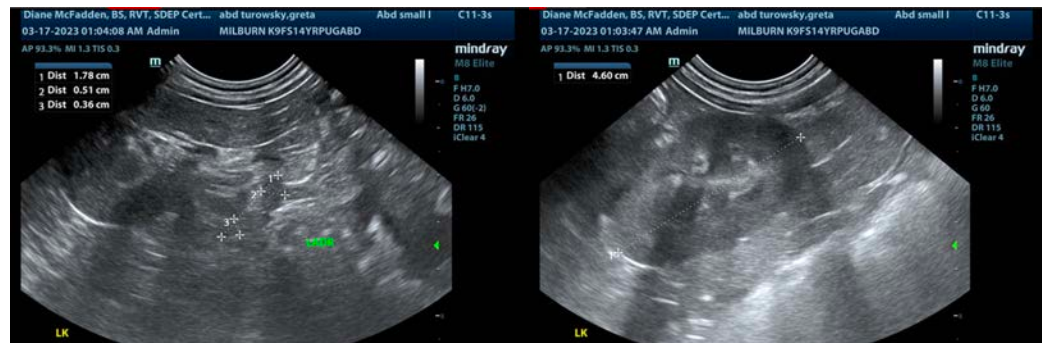
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The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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.

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

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