



**PATIENT PRESENTING CLINICAL SIGNS**

Shadow Graham

Two day history of being unwell. Lethargic, anorexia. Had dental in March 2023 and all the blood work was normal. No history of toxins lillies or EG

**SPECIES**

Feline

Abnormal PE/Chem/CBC/UA Results: Renal nephrolithiasis on xrays. Cat is urinating. CBC: WNL  
CHEM: Creat 968 (N 71-212), Urea >46.4 (N 5.7-12.9), Phos 2.73 (N 1-2.42), K 8.3 (N 3.5-5.8), Alb 33 (N 23-39) Snap fPI Normal. USG 1.009 Rest U/A normal

**BREED**

DLH

**ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN**

**SEX**

Neutered Male

**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, or masses. There is a moderate amount of dependent shadowing mineralized debris in the dependent portion of the urinary bladder, most consistent with sandy debris/small stones.

**AGE**

8 Years

The left kidney is small (2.3 cm), hyperechoic, and irregular, with small non-obstructive nephroliths and pyelectasia at 0.25 cm. Overall echogenicity is normal with adequate corticomedullary distinction and a typical 1:3 cortex:medulla ratio. There is a scant amount of free fluid and inflammation surrounding the kidney. There is no evidence of infarcts or hydroureter. Renal vasculature is normal.

**WEIGHT**

6.12 kg

The right kidney is large (5.69 cm) and hyperechoic with decreased corticomedullary distinction, with an occasional small non-obstructive nephrolith and pyelectasia at 0.30 cm. There is a small amount of perirenal fluid and inflammation noted. There is no evidence of infarcts or hydroureter. Renal vasculature is normal.

**INTERPRETED BY**

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

**Adrenal Glands**

**IMAGING PERFORMED BY**

Dr. Brian Barnes

The left adrenal gland is normal in size measuring 0.54 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 0.50 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. Brian Barnes

**Spleen**

The spleen is subjectively normal in size (1.0 cm), 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.

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**Liver**

The liver is subjectively normal in size, and echogenicity with smooth peripheral margins. The parenchyma is homogenous echotexture. The visible portions of the vasculature and biliary tract appear normal. No focal nodules or cystic lesions are observed.

**DATE**

6/27/23

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.



**PATIENT** *Gastrointestinal*

Shadow Graham

The stomach contains minimal luminal contents. It measures at a normal thickness of <0.36cm 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.

**SPECIES**

Feline

The visualized areas of duodenum, jejunum and ileum have a uniform diameter with minimal fluid distension. Wall thickness is normal to slightly increased. Bowel loops follow a typical curvilinear path with distinct wall layering, but some areas display a prominent muscularis layer which does not display the typical 1:3 muscularis:mucosa layer ratio. Duodenum wall measures 0.30 cm. Jejunum wall measures 0.27 cm. Visualized peristalsis appears appropriate. There were no focal lesions consistent with obstruction or a mass effect observed.

**BREED**

DLH

**SEX**

Neutered Male

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.

**AGE**

8 Years

*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.

**WEIGHT**

6.12 kg

*Free Abdomen*

There is a scant amount of free abdominal fluid, particularly around the kidneys. No lymphadenopathy noted. The omentum is hyperechoic around the kidneys.

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**ULTRASONOGRAPHIC FINDINGS**

- Moderate amount of dependent shadowing debris visualized in the urinary bladder – Findings are most consistent with sandy debris/small stones. Recommend urinalysis and culture.
- Small, irregular, hyperechoic left kidney with pyelectasia and occasional small nephroliths – Findings are most consistent with a dysplastic kidney or with a fibrosed/sclerotic kidney from previous injury. Pyelectasia of the kidney(s) could be consistent with pyelonephritis, chronic renal disease, secondary to PU/PD or fluid therapy (if applicable), other.
- Large right kidney with decreased corticomedullary distinction, rare non-obstructive nephroliths, and pyelectasia – Findings are most consistent with compensatory hypertrophy. Mild loss of corticomedullary distinction in the kidney could be consistent with chronic degenerative disease or interstitial nephrosis. Pyelectasia of the kidney(s) could be consistent with pyelonephritis, chronic renal disease, secondary to PU/PD or fluid therapy (if applicable), other.
- Prominent muscularis layer to the small intestine – The small intestinal wall changes could be consistent with an underlying inflammatory process. These types of changes can sometimes be seen in normal older cats. Correlate with clinical signs.
- Scant free abdominal fluid – Much of the inflammation and fluid appears around both kidneys.

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**INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS**

The left kidney appears small and irregular with minimal normal architecture, most consistent with a small sclerotic kidney or a dysplastic kidney. The right kidney is large, likely compensatory, with decreased corticomedullary distinction and pyelectasia. This could be consistent with chronic renal



**PATIENT**

Shadow Graham

failure and an acute on chronic crisis. Recommend a blood pressure, urinalysis and culture. Renal infiltrative disease (neoplasia, etc.) cannot be definitively ruled out, but seems less likely. Recommend diuresis and treatment for renal failure.

**SPECIES**

Feline

There is a moderate amount of sandy debris/mineralized debris in the urinary bladder. Correlate with abdominal radiographs, and urinalysis and culture. No evidence of obstruction is visualized on today's exam. Recommend continued monitoring.

**BREED**

DLH

The muscularis layer of the small intestine appears prominent. This could be an incidental finding or be contributing to the weight loss and some of the inappetence. Consider a GI panel to Texas A&M for a qualitative fPLI, TLI, cobalamin and folate to further evaluate.

**SEX**

Neutered Male

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

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**WEIGHT**

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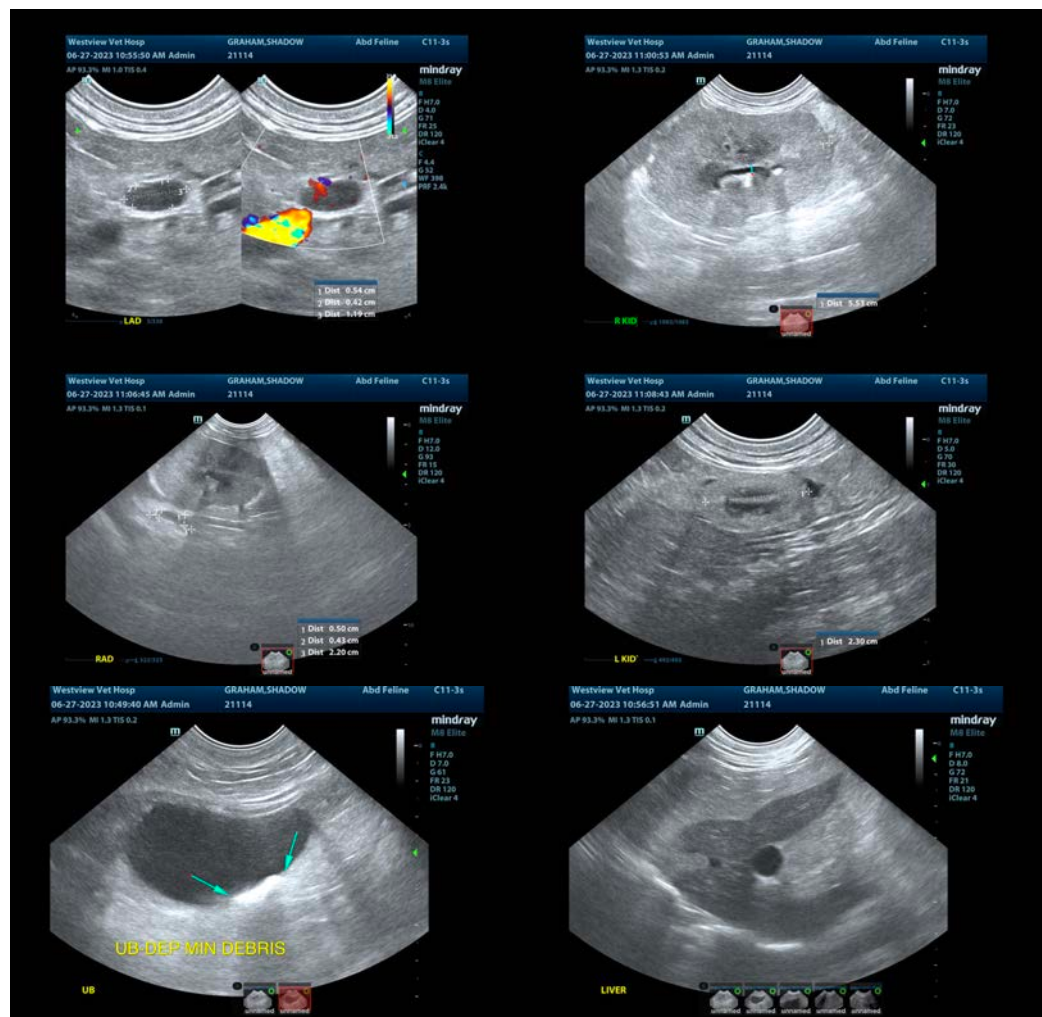
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**SPECIES**

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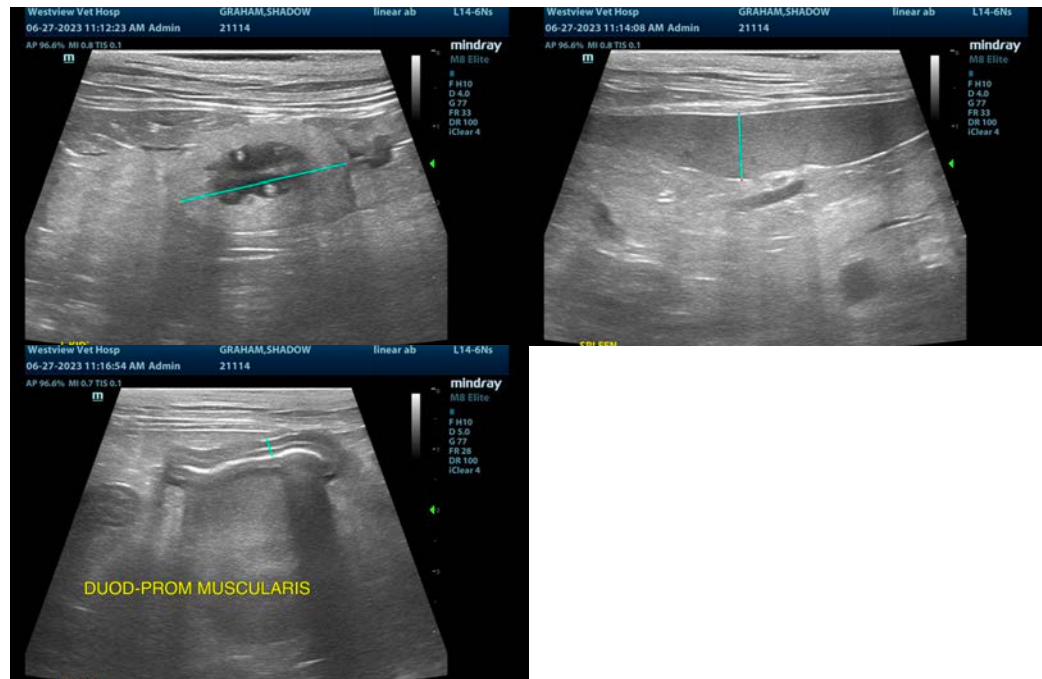
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**AGE**

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**WEIGHT**

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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.

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