



PATIENT PRESENTING CLINICAL SIGNS

PATIENT Popo Lu
SPECIES Canine
BREED Longhaired Dachshund
SEX Neutered Male

Presented on October 28 for vomiting and lethargy. Bloodwork one week prior at DVM showed mildly increased renal values. Popo has a history of controlled Cushing's disease. Other than a painful cranial abdomen, PE was unremarkable. Repeat bloodwork/UA at the emergency hospital showed higher renal values and possible cocci UTI. Popo was started on 2x maintenance IV fluids but developed a murmur. This was no longer audible once the fluid rate was decreased. Popo was discharged on the 29th (see medications below) and rechecked at the rDVM on October 31st. Popo has been on Vetoryl, 10 mg PO SID. Since discharge from emergency he has also been on omeprazole, 75 mg PO BID, gabapentin, 50 PO BID, clavaseptin, 93.75 mg PO BID, and cerenia, 24 mg PO SID, and mirtazapine (dose not provided). Popo is currently being treated as an outpatient. Bloodwork results from October 31st at referral vet are below. Concurrent echo done and sent to cardiologist, but cardiac function appears to be adequate. Abnormal PE/Chem/CBC/UA Results: October 28th: Creatinine = 252(44 - 159) Urea=33.3 (2.5-9.6) SDMA=31 (0-14) October 31st: HCT=34.1 (37.3-61.7) Creatinine=289 (44-159) Urea=42.6 (2.5-9.6) Phos=2.9 (0.81-2.2) Amylase=2462 (500-1500) Lipase=5644 (200-1800)

ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN

Urinary System

The urinary bladder is moderately distended with anechoic contents. No masses, inflammatory changes, echogenic sediment or cystoliths are observed. The urinary bladder, trigone and visible pelvic urethra are normal in thickness with a smooth mucosal surface.

Prostate is mildly enlarged (1.1 cm wide). Parenchyma is diffusely homogenous and mildly hypoechoic to surrounding tissue, except for a small discrete hyperechoic nodule. Normal distinct margins and symmetrical bilobed shape are maintained. This finding is likely normal patient variant, especially if patient was neutered as an adult; however, if patient was neutered as a puppy, prostatitis or, less likely, infiltrative neoplasia cannot be ruled out. This finding should be interpreted in combination with clinical signs, urinalysis results, etc. and either further investigated or monitored, as indicated.

The right kidney is normal in size (4.03 cm), shape and echogenicity. It has smooth peripheral margination. There is a normal 1:3 cortex to medulla ratio with appropriate corticomedullary distinction. There is no evidence of pyelectasia or infarcts observed. Non-obstructive areas of mineralization/nephroliths are noted.

The left kidney is normal in size (4.2 cm), shape and echogenicity. It has smooth peripheral margination. There is a normal 1:3 cortex to medulla ratio with appropriate corticomedullary distinction. There is no evidence of pyelectasia, mineral or infarcts observed.

Adrenal Glands

Adrenal glands are plump/swollen in size. Normal shape and contour are maintained without evidence of capsular invasion. Corticomedullary structure is unremarkable. Visible surrounding vasculature appears normal. The right adrenal gland measures 1.9 cm long x 0.69 cm at the cranial pole and 0.64 cm at the caudal pole. The left adrenal gland measures 1.9 cm long x 0.64 cm at the cranial pole and 0.61 cm at the caudal pole.

Spleen

The spleen is subjectively normal in size with a normal smooth capsular contour. Parenchyma is appropriately finely textured and homogenous with normal echogenicity relative to surrounding tissue (hyperechoic to liver). No focal nodules or masses are observed. Splenic vasculature appears normal.

INTERPRETED BY

Beth Johnson, DVM
DACVIM

IMAGING PERFORMED BY

Dr. Donna Markland

HOSPITAL NAME

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Emergency Hospital

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Liver

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The liver is subjectively normal in size with normal smooth curvilinear peripheral contour. Parenchyma is appropriately hypoechoic to the spleen in echogenicity and appropriately mildly coarse and homogenous in echotexture. No focal lesions are observed. Visible vasculature and biliary tree appear normal without distension or congestion.

SPECIES

Canine

Gallbladder is moderately overdistended with organized, aggregated and centralized non-gravity dependent sludge. Striations of sludge separated by anechoic areas are noted extending from the lumen to the luminal wall. The wall is mildly thick, irregular and hyperechoic. There is no evidence of CBD dilation.

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Gastrointestinal

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The visible stomach wall is normal in thickness and layering. The lumen of the stomach is mildly distended with echogenic non-shadowing luminal contents and gas consistent with normal ingesta. There is no evidence of obstruction, foreign material or infiltrative disease. Pyloric outflow tract appears patent.

AGE

14 Years

The visible small intestines are normal in wall thickness and layering (canine duodenum < 0.5 cm and feline duodenum < 0.4 cm; other < 0.3 cm). Small intestinal motility appears adequate (1-3 contractions per min). The lumen of the small intestine is empty with no evidence of obstruction, foreign material or infiltrative disease.

WEIGHT

6.8 kg

The visible colon is normal in wall thickness (< 0.2 cm) and layering. Contents are consistent with normal formed feces and gas.

Pancreas

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The pancreatic parenchyma is appropriately isoechoic to surrounding tissue. Visible capsule is smooth and normal in contour. There is no visible pancreatic duct dilation. There is no evidence of active peripancreatic inflammation.

Free Abdomen

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There is no evidence of free peritoneal effusion noted in these images.

There is no apparent lymphadenopathy noted in these images.

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PRIMARY FINDINGS

- Gallbladder mucocele
- **Bilateral adrenomegaly** – consistent with this patient’s reported history of hyperadrenocorticism.

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SECONDARY FINDINGS

- Small non-obstructive nephrolithiasis in the right kidney

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INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

Given this patient’s reported azotemia and the visible prostate changes described above, combined with the reported bacteriuria, a urine culture is recommended, but since the patient is currently receiving antibiotics, recommendations are to culture the urine a week to 10 days after finishing antibiotics to ensure that there is not a persistent infection.

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A blood pressure is recommended if not recently evaluated.



PATIENT

Testing for Leptospirosis is also indicated, given this patient's azotemia.

Popo Lu

It is unknown based on the history provided whether isosthenuria was present at the same time as the initial azotemia prior to fluid therapy, etc., which would support renal azotemia versus prerenal azotemia. If that information is unknown, it is possible that at least some of this patient's azotemia is prerenal, caused by the vomiting/gastrointestinal signs, which may all be related to the gallbladder mucocele, especially given the reported cranial abdominal pain. In that case, once the patient is stable, recommendations are most likely cholecystectomy.

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If a more conservative approach is elected and patient is doing well, in addition to empirical antibiotics, Ursodiol could be administered with close monitoring of the gallbladder as well as the gastrointestinal signs, abdominal pain, etc. for improvement. However, if clinical signs do not improve, and certainly if they progress and/or liver enzymes progress, a cholecystectomy may be necessary despite starting with medical management.

SEX

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WEIGHT

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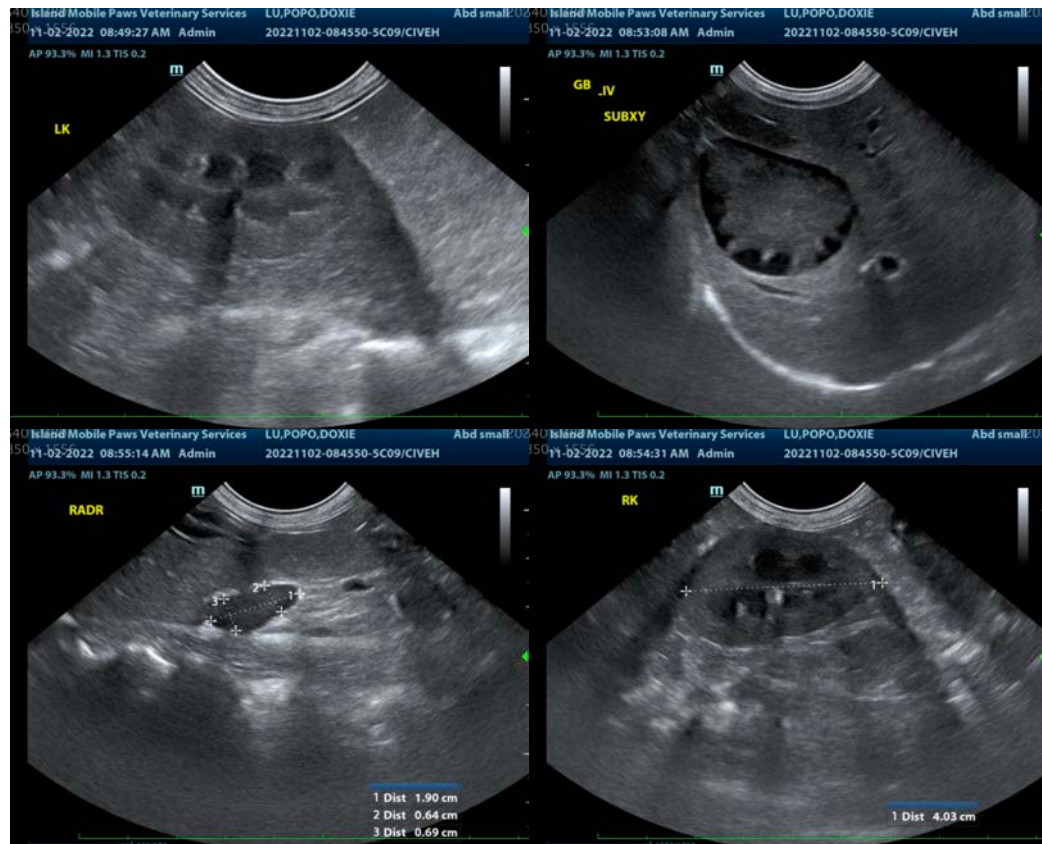
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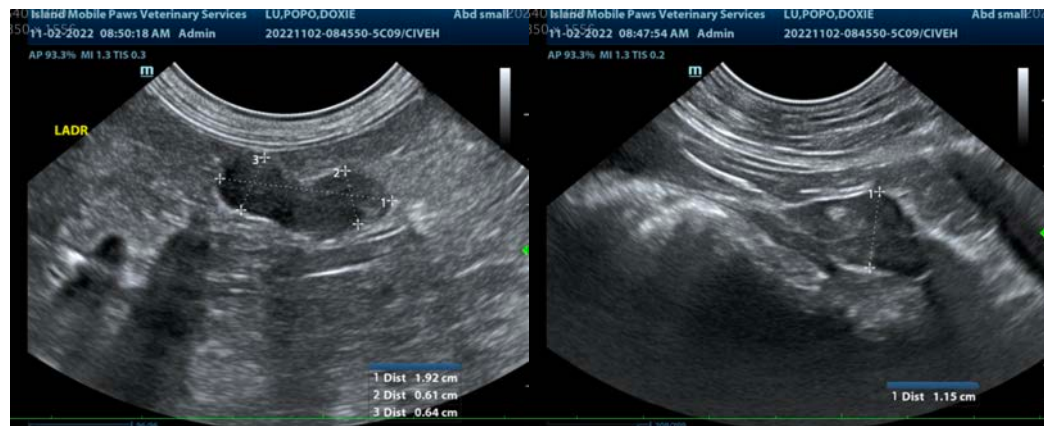
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The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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.

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