

**PATIENT PRESENTING CLINICAL SIGNS**

**Lucy Halko**  
**SPECIES**  
Canine  
**BREED**  
Pekingese

History: Patient presented 5/3/23 on transfer from rDVM due to pancreatitis, with secondary Addison's disease (generally well controlled). On examination, patient was dehydrated, alert, but historical bloodwork showed low albumin, glucose, and potassium. After 48 hours hospitalization with IV fluids (dextrose and KCL additives), IV medications (including Unasyn, Metronidazole, Famotidine, Cerenia, and Ondansetron), oral medications (including Prednisone, Entyce, and Cardalis) patient hasn't improved to where we would like her at this time.

Abnormal PE/Chem/CBC/UA Results: Grade 4/6 systolic, apical heart murmur / ALP: 2968  
Hypoalbuminemia / Hypokalemia / Hypoglycemia

**ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN**

**SEX**  
*Urinary System*

Female Spayed  
The urinary bladder is moderately distended with anechoic urine, and no luminal sediment is present. The ureteral papillae, trigone and pelvic urethra are of normal appearance, and the ureters are not visible (normal). No masses, calculi or mucosal irregularities are noted. Urethra visualized to 2.0 cm.

**AGE**  
9 years  
The kidneys are of normal size and shape and exhibit appropriate corticomedullary differentiation with a normal 1:3 cortex to medulla ratio. There is no evidence of nephrolithiasis, mineralization, pyelectasia, cystic change or hydronephrosis. The proximal ureter is not visible (normal). The left kidney is 3.5 cm in length. The right kidney is 3.5 cm in length.

**WEIGHT**  
*Adrenal Glands*

2.7 kg  
The left adrenal gland is identified in its normal location. It is of normal size and shape with appropriate parenchymal echogenicity and normal phrenic vasculature. The left adrenal gland height is 5.0 mm at the cranial pole and 6.6 mm at the caudal pole. The right is not distinctly visualized, but the region appears unremarkable.

**INTERPRETED BY**

Tam Mengine, DVM,  
DABVP (canine/feline  
practice)

*Spleen*

The spleen is of appropriate size and has a normal, homogenous parenchyma with a smooth, continuous capsular surface. The splenic vasculature is normal with no evidence of congestion or thrombosis, and blood flow through the splenic hilus appears normal.

**IMAGING PERFORMED BY**

Dr. Kuzimski

*Liver*

The liver is diffusely hyperechoic and subjectively enlarged. There are hypoechoic nodules present throughout the parenchyma, measuring up to 1.0 mm. The portal and hepatic vasculature are of normal size and appearance with no evidence of congestion or thrombosis.

**HOSPITAL NAME**

Animal EH Deland

The gallbladder is moderately distended with a large amount of sludge. The wall was thin and continuous with no focal lesions. The cystic and common bile ducts are normal / not visible.

**REFERRING VET**

Dr. Kuzimski

*Gastrointestinal*

The stomach wall is diffusely hyperechoic. The presence of gas in the stomach interferes with the evaluation of wall layering within the fundus. There is also a small amount of hypoechoic fluid present. The gastric wall measures 4.0 mm with normal deviations for rival folds. The pyloric outflow tract appears unremarkable.

**INVOICE**

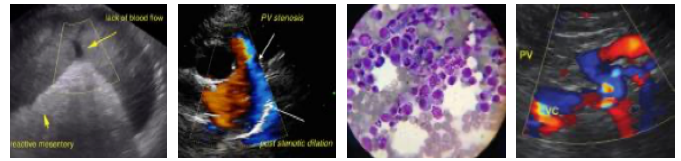
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The visualized portions of the duodenum, jejunum, and ileum are of normal thickness with intact wall layering that exhibits the appropriate 1:3 muscularis to mucosa ratio. The duodenal wall measures 3.5 mm. The jejunal wall measures up to 2.8 mm. Intestinal motility appears normal.

**DATE**

5.6.23

The visible portions of the colon are of normal thickness, up to 1.5 mm, with intact wall layering. The ileocecal junction is visualized and appears normal.



**PATIENT**

Lucy Halko

**Pancreas**

The pancreas is hypoechoic, but of normal size and with no changes to the surrounding mesenteric fat. There is no evidence of peripancreatic inflammation. The pancreatic duct appears normal.

**SPECIES**

Canine

**Free Abdomen**

There is no evidence of free fluid within the peritoneal cavity. The omentum and intra-abdominal fat are of appropriate echogenicity. Enlarged abdominal lymph nodes are not observed. The aortic trifurcation has normal blood flow with no evidence of thrombosis.

**BREED**

Pekingese

**ULTRASONOGRAPHIC FINDINGS**

**Findings**

- Hypoechoic nodules and target lesions in the liver
- Hypoechoic pancreas
- Hyperechoic gastric wall

**SEX**

Female Spayed

**AGE**

9 years

**INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS**

There is no obvious explanation for the ongoing hypokalemia and hypoglycemia on today's ultrasound. One differential diagnosis that could explain both findings is an insulinoma, which is often difficult to detect on ultrasound. If not already performed, a paired glucose and insulin level is recommended.

**WEIGHT**

2.7 kg

The liver nodules may represent either benign or neoplastic disease. One of the lesions has a "target" appearance, which is more typical of a neoplastic process. Fine-needle aspirates of these lesions are recommended for definitive diagnosis.

**INTERPRETED BY**

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DABVP (canine/feline  
practice)

The hypokalemia may also be attributed to treatment for Addison's disease, if the patient has received Percorten. Dose adjustment may be necessary. In the meantime, in addition to the supplemental potassium, instead of Cardalis, spironolactone would be preferred, as the enalapril component in Cardalis can interfere with potassium retention.

**IMAGING PERFORMED BY**

Dr. Kuzimski

The changes in the stomach wall are nonspecific and could be consistent with either gastritis or less likely, a neoplastic process. If clinical signs persist, and another etiology for this illness cannot be found, then endoscopic biopsies would be recommended.

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Animal EH Deland



**REFERRING VET**

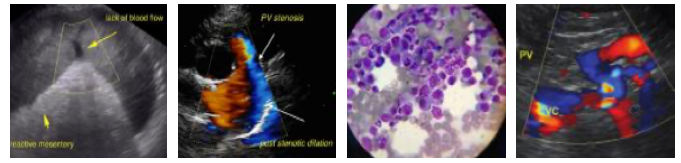
Dr. Kuzimski

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**WEIGHT**

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**DATE**

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The information and recommendations provided are based on the images presented by the referring veterinarian. 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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