



**PATIENT PRESENTING CLINICAL SIGNS**

Kyra Chisholm

New or ongoing issue: vomiting and nausea When did these issues start: 11p monday night seemed restless, vomiting at 1a+6a undigested food and mucous, at 7a ate half of her breakfast->vomited mucous right after, o then offered more food and Kyra declined Demeanor seems normal, but not interested in food is highly concerning for o For the past few days Kyra seems to have moments of 'unawareness' when being called by o Bowel Movements: unsure if normal, goes in the backyard Coughing/Sneezing: no Current Food: HP royal canin kibble Current Medications zenrelia 15mg, half tablet SID Last given - monday 4p.

**SPECIES**

Canine

**BREED**

Pug

Abnormal PE/Chem/CBC/UA Results: See attached lab work Primary Question to Be Answered in This Exam acute onset vomiting.

**SEX**

FS

**ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN**

**Urinary System**

**AGE**

12 years

The urinary bladder is adequately 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.

**WEIGHT**

11.7 kg

The right kidney is normal is size (4.9 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.

**INTERPRETED BY**

Beth Johnson, DVM  
 DACVIM

The left kidney is normal is size (4.5 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**

**IMAGING PERFORMED BY**

Amanda Stewart

Adrenal glands are plump/swollen in size. Normal shape and contour are maintained without evidence of capsular invasion. Some likely age related parenchymal heterogenicity is present. Visible surrounding vasculature appears normal. Left adrenal measures 1.0 cm at the cranial pole, and 1.3 cm at the caudal pole. Right adrenal measures 1.3 cm at the cranial pole, and 1.3 cm at the caudal pole.

**HOSPITAL NAME**

West Brandt AH

**Spleen**

**REFERRING VET**

Dr. Balaraju

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.

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**Liver**

**DATE**

12/9/2025

Liver is subjectively enlarged with mildly irregular margins. Parenchyma is mildly heterogenous characterized by multiple poorly defined hypoechoic nodules within otherwise hyperechoic liver parenchyma. Visible vasculature and biliary tree appear normal without distension or congestion.

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. Enhanced hyperechoic fat is noted surrounding the gallbladder.



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**Gastrointestinal**

The visible stomach wall is normal in thickness and layering. The lumen of the stomach is empty with no evidence of obstruction, foreign material or infiltrative disease. Pyloric outflow tract appears patent.

The visible small intestines are normal in wall thickness and layering. 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.

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

**Pancreas**

The pancreas that is observed appears appropriately isoechoic to surrounding omental fat. Visible capsule is smooth and normal in contour. Visible pancreatic parenchyma is homogenous and unremarkable. There is no visible pancreatic duct dilation. There is no evidence of active peripancreatic inflammation.

**Free Abdomen**

There is no visible free peritoneal effusion noted in these images.

There is no apparent pathologic lymphadenopathy noted in these images.

**ULTRASONOGRAPHIC FINDINGS**

- Gallbladder mucocele with ultrasonographic evidence of inflammatory changes i.e. enhanced hyperechoic fat surrounding the gallbladder.
- Bilateral adrenomegaly – In a patient diagnosed with hyperadrenocorticism, this finding is most consistent with adrenal hyperplasia secondary to pituitary dependent hyperadrenocorticism. This finding can also be seen with stress and/or normal patient variant. Interpret in combination with clinical signs of hyperadrenocorticism and/or other adrenal disease.
- Heterogenous Liver – These changes are most consistent with benign processes such as nodular hyperplasia, steroid (vacuolar) hepatopathy, extramedullary hematopoiesis or possibly chronic inflammatory disease and less commonly infiltrative round cell or metastatic neoplasia.

**INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS**

Based on the appearance of the gallbladder and the area surrounding the gallbladder, I suspect the mucocele is the primary contributing factor to patient's reported liver enzyme changes, hyperbilirubinemia, and likely clinical signs. Therefore, if elected, an exploratory laparotomy for planned cholecystectomy could be considered.

Having said that, if clinical history is at all suggestive of hyperadrenocorticism, based on the appearance of the adrenal glands it's possible that underlying hyperadrenocorticism could have, or maybe contributing to the gallbladder debris and if diagnosed, while treating hyperadrenocorticism, does not always result in improvement of the gallbladder sludge. It could potentially help, especially if



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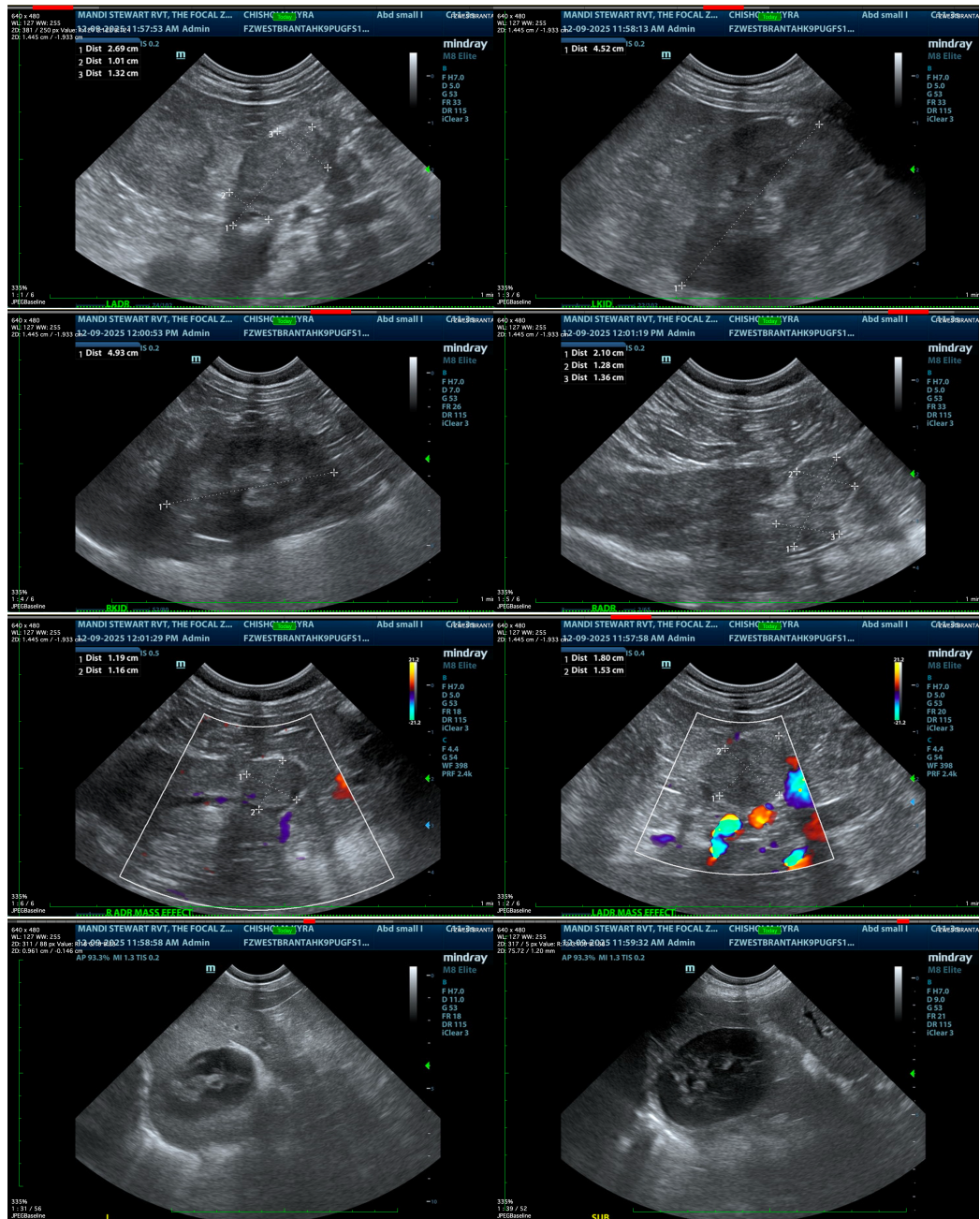
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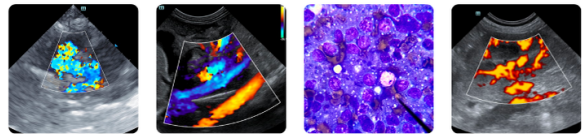
12/9/2025

concurrently administering hepatic nutraceuticals such as ursodiol, etc.

Therefore, this option should only be pursued if surgery is declined based on risks of rupture, etc., but working up and, if indicated, treating hyperadrenocorticism and medically managing the gallbladder could be considered as a backup approach while monitoring for improvement versus progression. In this scenario, a low dose dexamethasone suppression test could be considered.

Additionally, a blood pressure is recommended.





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Kyra Chisholm

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.

**SPECIES**

Canine

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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