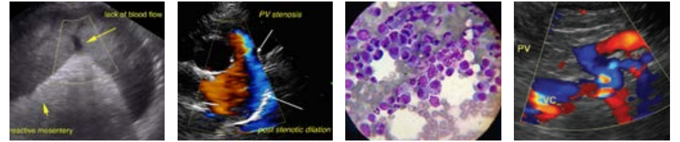


SonoPath.com™
1-800-838-4268 info@sonopath.com

PATIENT

Buddy Nguyen

SPECIES

Canine

BREED

Beagle X

SEX

Neutered Male

AGE

16 Years

WEIGHT

14.3 kg

INTERPRETED BY

Beth Johnson, DVM
DACVIM

IMAGING PERFORMED BY

Dr. Crystal Ebert

HOSPITAL NAME

Wilvet Salem

REFERRING VET

Dr. Crystal Ebert

INVOICE

43815

DATE

7/6/23

PRESENTING CLINICAL SIGNS

Transferred to us for elevated liver values and vomiting on 7/5pm. History of being on carprofen for 1 week, 2 weeks ago. Normal liver enzymes at that time per owner. Vomited once 7/3, normal 7/4, vomited multiple times this afternoon. Week in hind limbs, hard time standing.

Abnormal PE/Chem/CBC/UA Results: T: 100.3F, P: 150, R: 26, obtunded, BCS 2/5, OS has significant amount of mucoid discharge present with some conjunctivitis. Brown exudate and lichenification present AU. Grade 3/4 periodontal disease with gingivitis and gingival recession present. Heart murmur 6/6 holosystolic. Multiple masses present throughout skin on limbs and on trunk. PCV/TS: 40%, 7g/dL

ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN

Urinary System

Urinary bladder is adequately distended. It has a normal uniform wall thickness. Contents include primarily anechoic fluid with a very large amount of echogenic non-shadowing debris, both dependent as well as suspended, most consistent with exfoliated cells, mucous and/or small blood clots. Both sterile inflammation as well as urinary tract infection can also present with echogenic debris. No masses or cystoliths are observed. The trigone and visible pelvic urethra are normal in thickness with a smooth mucosal surface.

Kidneys are overall normal in size and shape with smooth peripheral margination. A normal 1:3 cortex to medulla ratio is maintained. The medulla and cortices are uniform in texture with some mild increased cortical echogenicity and mild loss of corticomedullary distinction, expected in this age patient. There is no evidence of mineral or infarcts observed. The left kidney measures 6.54 cm with pyelectasia of 0.60 cm in the sagittal view. The right kidney measures 6.24 cm.

Adrenal Glands

The right adrenal gland is unable to be well visualized in these images.

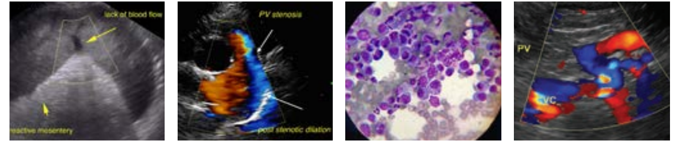
The caudal pole of the left adrenal gland is normal in size (0.70 cm at the caudal pole), shape and contour. Corticomedullary structure is unremarkable. Visible surrounding vasculature appears normal. The cranial pole is unable to be well visualized in these images.

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.

Liver

Diffusely, the liver is subjectively enlarged with mildly irregular margins. Parenchyma is heterogenous characterized by multiple poorly defined hypoechoic nodules within otherwise hyperechoic liver parenchyma. Visible vasculature and biliary tree appear normal without distension or congestion. Focally, in the left liver, there are several more discrete, markedly more heterogeneous, partially cystic, primarily hyperechoic, almost mass-like lesions. One measures 4.4 cm x 5.0 cm in the deep left liver and one measures 2.0 cm x 3.0 cm in the lateral left liver.



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Gallbladder is mildly overdistended with a moderate amount of non-dependent, mildly aggregated/inspissated sludge. Hypo to anechoic cystic areas are noted between the gallbladder sludge and luminal wall. The wall is otherwise smooth without visible thickening. There is no evidence of cystic or CBD dilation. There is no evidence of effusion.

Gastrointestinal

The stomach wall is normal in thickness (canine < 0.5 cm and feline < 0.4 cm) 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 (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.

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

Pancreas

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

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

There is no apparent lymphadenopathy noted in these images.

Ringdowns are noted at the level of the diaphragm as well as suspicion for pleural effusion.

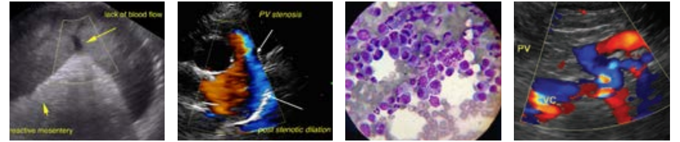
ULTRASONOGRAPHIC FINDINGS

- Diffusely 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.

- More focal, almost emerging mass-like lesions in the left liver – These could also represent nodular hyperplasia, steroid vacuolar hepatopathy, etc., or even a more focal variation of a chronic inflammatory disease. However, infiltrative neoplasia such as sarcoma, infiltrative round cell neoplasia, metastatic neoplasia, etc. is also a differential and can't be ruled out without tissues sampling.

- Emerging mucocele – Cholecystic debris is of unknown clinical significance. It can be seen with biliary stasis from fasting or illness. Cholecystic debris is not necessarily related to hepatobiliary disease. The non-dependent nature of this sludge combined with the cystic areas are suggestive, however, of possible emerging cystic mucosal hyperplasia or early gallbladder mucocele.

- Ringdowns at the level of the diaphragm and a suspicion for pleural effusion – both suggestive of concurrent thoracic/pulmonary pathology.



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- Large amount of urinary bladder debris.
- Left kidney pyelectasia – Differentials for pyelectasia include pyelonephritis, diuresis, congenital malformation or ureteral or lower urinary tract obstruction.

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

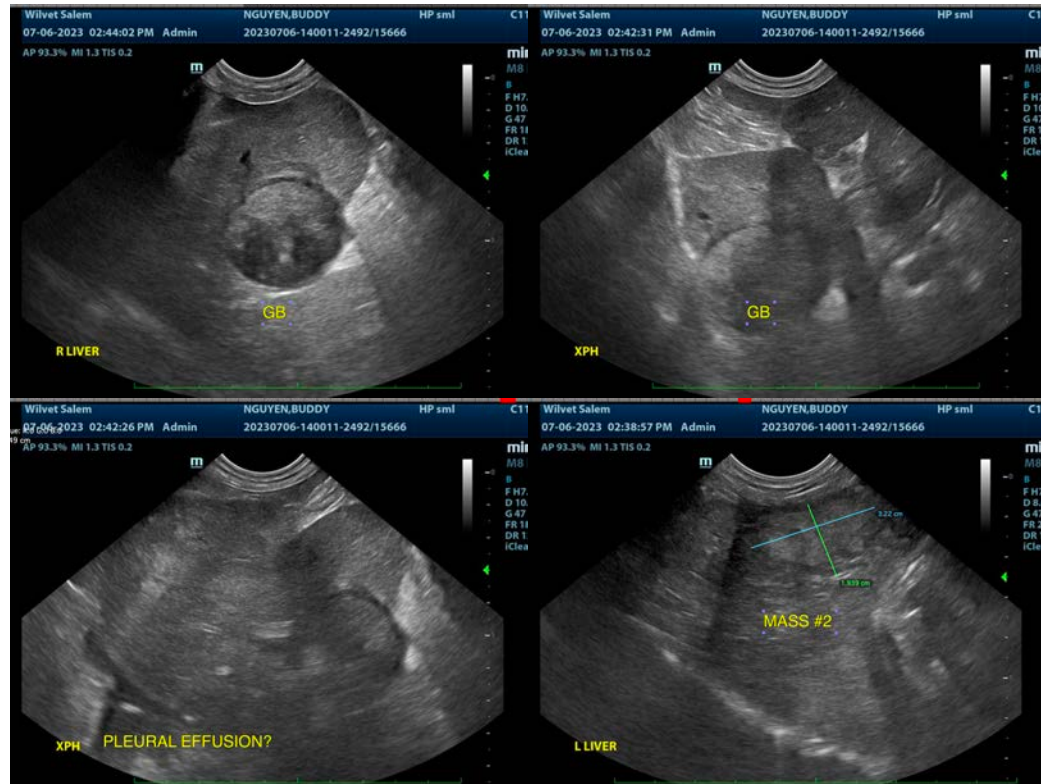
If not recently evaluated, a urinalysis and, if indicated based on urinalysis results, urine culture are recommended. If protein is present in an otherwise quiet sediment, protein quantification with a urine protein to creatinine ration is recommended.

Three view thoracic radiographs are recommended for further assessment of cardio-pulmonary status as well as to further evaluate for any evidence of metastatic disease, if not recently evaluated.

Additional recommendations depend partly on the degree and pattern of the reported liver enzyme increase (for example more of a cholestatic pattern versus a hepatocellular pattern). Having said, regardless of the enzymes, a fine needle aspirate of the liver, both the diffuse changes as well as the nodules/masses in the left liver could be considered if patient's coagulation status is appropriate.

In the meantime, supportive/symptomatic medical management of clinical signs and a hepatopathy, as well as the emerging gallbladder mucocele, etc. is recommended in the form of fluid therapy, antiemetics, gastroprotectants, pain management if clinically indicated, appetite stimulants if necessary, broad-spectrum antibiotics, etc.

Ultimately, pending liver enzyme values and patient response to supportive care, cytology results, etc., an exploratory laparotomy for further evaluation of the gallbladder, possible cholecystectomy, and excisional biopsies of the liver masses/liver lobectomies could be considered.



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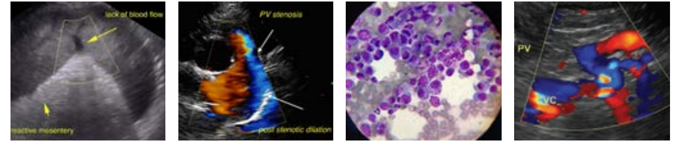

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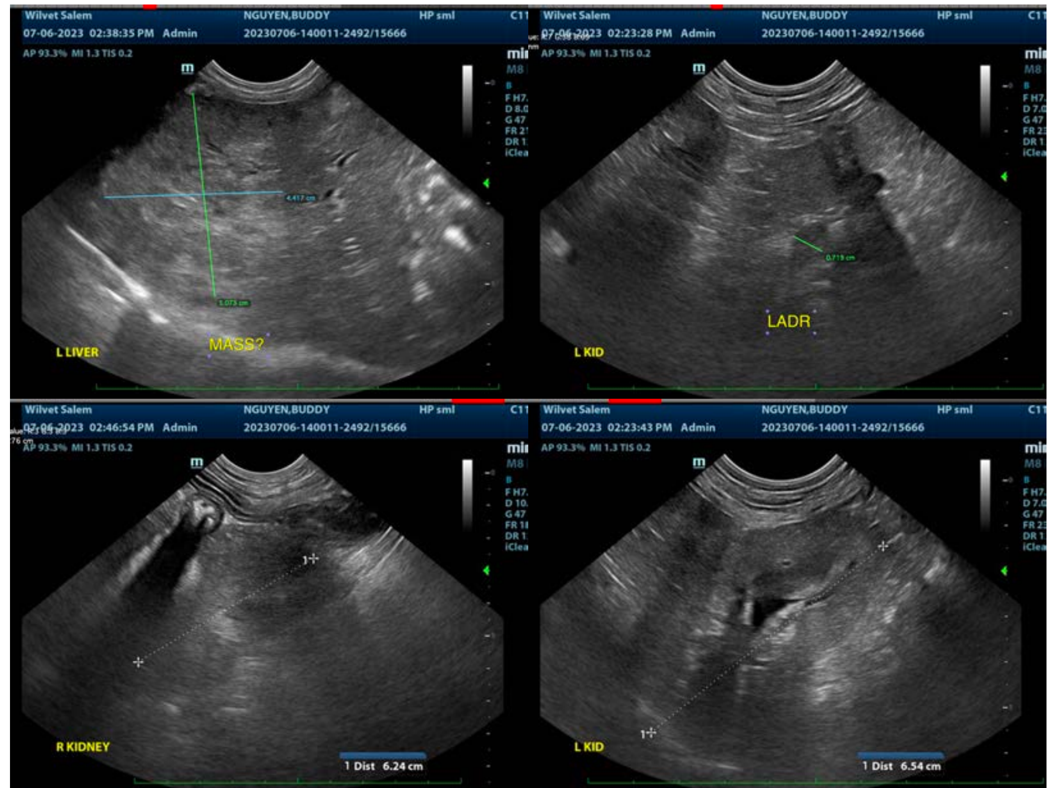

The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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.

Beth Johnson, DVM, DACVIM
info@sonopath.com