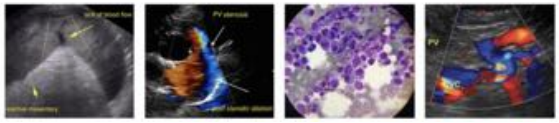


PATIENT

Alli Abrams

SPECIES

Canine

BREED

Puggle

SEX

Intact Female

AGE

10.7.2009

WEIGHT

25.6 lbs

INTERPRETED BY

Andrea Nicastro, DVM, Diplomate ACVIM (*Small Animal Internal Medicine*)

IMAGING PERFORMED BY

Andrea Nicastro, DVM, Diplomate ACVIM (*Small Animal Internal Medicine*)

HOSPITAL NAME

Foxbank VH

REFERRING VET

Ashley Parsons

INVOICE

11266

DATE

7.25.22

PRESENTING CLINICAL SIGNS

Clinical Exam Findings: Has been seen by vet in Virginia for GI issues. Will email records from veterinarian in Virginia
Abnormal lab-work values: Has been seen by vet in Virginia for GI issues. Will email records from veterinarian in Virginia
Current Medications: Metronidazole, Proviable

ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN

Urinary System

The **urinary bladder** wall is normal in thickness and the mucosal surface is smooth. The bladder lumen is moderately distended with anechoic urine. No masses, inflammatory changes or calculi are observed. Ureteral papillae and visualized portion of the proximal urethra, visible to a depth of 2 cm, are normal.

The **left kidney** is normal in size (4.57 cm in length) with a normal shape, smooth peripheral margins, and normal internal architecture. There is mild loss of corticomedullary distinction. Several hyperechoic shadowing diverticular foci are observed. There is no evidence of pyelectasia, infarcts or hydronephrosis. Renal vasculature is normal.

The **right kidney** is normal size (4.43 cm in length); normal shape and architecture with smooth peripheral margins. There is a normal 1:3 cortex to medulla ratio with mild loss of corticomedullary distinction. There is no evidence of pyelectasia, nephroliths, infarcts or hydroureter. Renal vasculature is normal.

Adrenal Glands

The **left adrenal gland** is normal size (0.51 cm at cranial pole) (0.45 cm at caudal pole) (1.91 cm in length); normal shape; homogenous parenchyma. The glandular echogenicity and detail are unremarkable. Capsule, cortex, and medullary definition are normal. The phrenicoabdominal vein and surrounding vasculature are normal.

The **right adrenal gland** is normal size (1.09 cm at cranial pole) (0.45 cm at caudal pole) (1.76 cm in length); normal shape; homogenous parenchyma. The glandular echogenicity and detail are unremarkable. Capsule, cortex, and medullary definition are normal. The phrenicoabdominal vein and surrounding vasculature are normal.

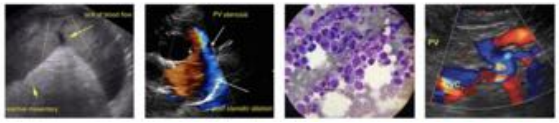
Spleen

The **spleen** is normal in size (1.24 cm in width at the level of the hilus) with a normal capsular contour. There is appropriate echogenicity and echotexture. No focal lesions are observed. Splenic vasculature is normal.

Liver

The **liver** is subjectively prominent in size with normal slightly swollen peripheral contours. The parenchyma is hypoechoic relative to the spleen and subtly heterogenous in appearance, with ill-defined hyperechoic nodules/areas, particularly on the right side. A 3.88 x 2.99 cm ill-defined hypoechoic to mildly heterogenous lesion is observed on the right, adjacent to the diaphragm. Hepatic vasculature and intrahepatic biliary tracts are of normal volume with no evidence of congestion. The portal vein to caudal vena cava ratio is approximately 1: 1.

The **gall bladder** lumen is moderately distended. The wall is thin and smooth. A moderate amount of aggregated, echogenic partially dependent to suspended sludge is observed within the lumen. The cystic and common bile ducts are normal/not seen.



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Gastrointestinal

The **gastric lumen** is not distended. The gastric wall and pylorus are normal in thickness with a normal layering pattern. The proximal duodenum is mildly corrugated in appearance. The proximal duodenal wall is mildly thickened (up to 0.62 cm) with retention of the normal layering pattern. In the remaining small intestinal segments, the lumen is segmentally distended with chyme (mild). The wall is mildly thickened (up to 0.40 cm) with retention of the normal layering pattern. There is evidence of mucosal fogging in some segments. Discreet masses are not identified. One bowel loop, which is thought to be cecum, is fluid distended. The mesentery effacing the serosal surface in this region is hyperechoic. The colonic wall is normal.

Pancreas

The base and left limb of the pancreas are visible with normal curvilinear peripheral contours. The parenchyma is largely isoechoic relative to surrounding omental fat and slightly mottled in appearance. The pancreatic duct is visible but not overtly dilated. There is no evidence of peripancreatic inflammation or effusion.

Free Abdomen

The **mesentery** throughout the abdomen is mildly hyperechoic. Trace free fluid is observed. A few prominent mesenteric **lymph nodes** are visualized, the largest measuring 1.29 cm in length.

Other

A **brief echocardiogram** reveals no evidence of pericardial effusion or obvious right atrial/auricular mass.

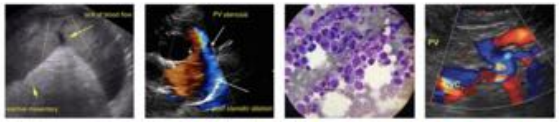
ULTRASONOGRAPHIC FINDINGS

Primary Findings

- Given the patient's clinical history and sonographic changes, a protein-losing enteropathy is suspected (i.e., inflammatory bowel disease, lymphangiectasia, infectious/parasitic disease, lymphoma). However, a partial intestinal obstruction cannot be completely excluded.
- The cecal changes are suggestive of typhlitis.
- Diffuse peritonitis is present, likely secondary to bowel pathology.
- The right liver lesion could be consistent with a tumor (i.e., adenoma, adenocarcinoma) or a benign process (i.e., excessive regenerative nodular hyperplasia). The diffuse hepatic parenchymal changes are more consistent with a benign process (i.e., nodular hyperplasia).

Secondary Findings

- The gall bladder changes could be consistent with cholestasis, early mucocele, or fasting.
- The pancreatic changes are most consistent with age-related parenchymal remodeling, potentially secondary to a prior inflammatory episode, early fibrosis or chronic pancreatitis.
- Bilateral, chronic, age-related renal changes
- The prominent abdominal lymph nodes are most consistent with reactive lymphadenitis or lymphoid hyperplasia. Neoplastic infiltration is considered less likely.



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INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

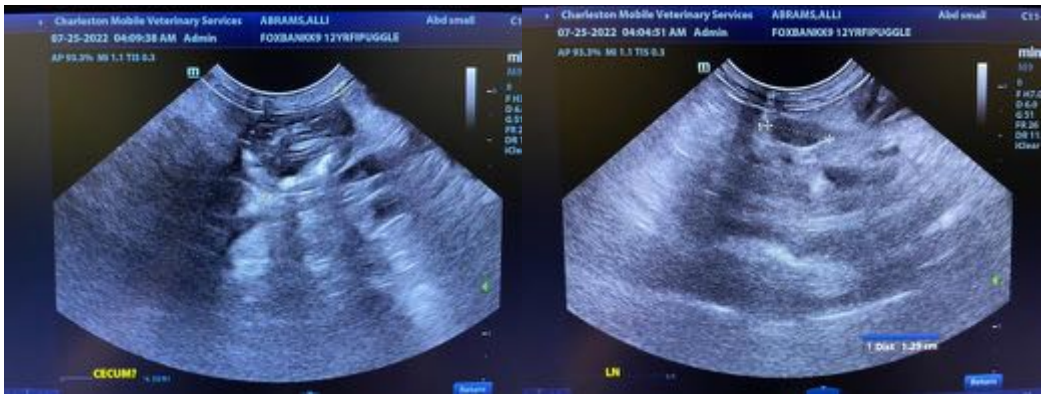
Regarding the intestinal changes, consider the following:

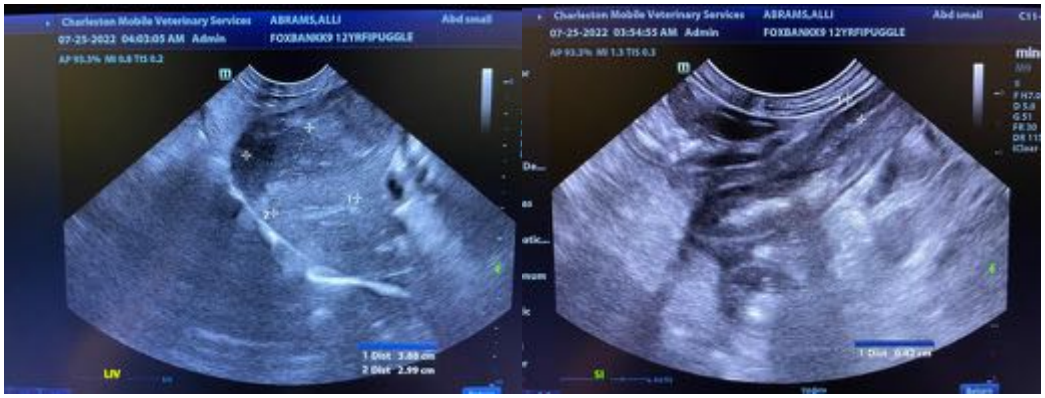
1. Fecal evaluation for ova and Giardia
2. Prophylactic deworming with fenbendazole
3. Malabsorption panel, including serum cobalamin and folate, TLI and PLI (send to Texas A&M)
4. Gastrointestinal biopsies (i.e., endoscopic, or surgical). Surgical biopsies are more likely to yield a definitive diagnosis.
5. A low-dose fat limited antigen diet should also be considered, when the patient is eating. Consider a nutritional consultation (i.e., University of (University of TN).
6. Also consider broad-spectrum antibiotic therapy as empirical treatment for typhlitis as well as symptomatic care (i.e., antiemetics, proton-pump inhibitor, tylosin, probiotic).

Regarding the right hepatic lesion, consider fine-needle aspirate or surgical biopsy. A cytologic evaluation, however, may be inconclusive. Therefore, surgical biopsies are preferred, particularly if the patient is to undergo gastrointestinal biopsies. Referral to a board-certified surgeon is recommended due to the potential for perioperative complications.

Three-view thoracic radiographs are recommended to assess cardiopulmonary status, especially if the patient is to undergo anesthesia.

Regarding the gall bladder changes, consider a recheck ultrasound in 4-6 weeks, preferably 2-hours post small meal, to assess for progression. Depending on the results, Ursodiol therapy may be warranted.





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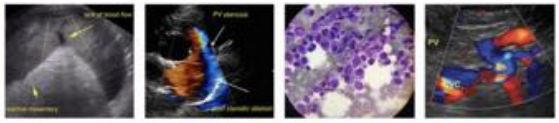

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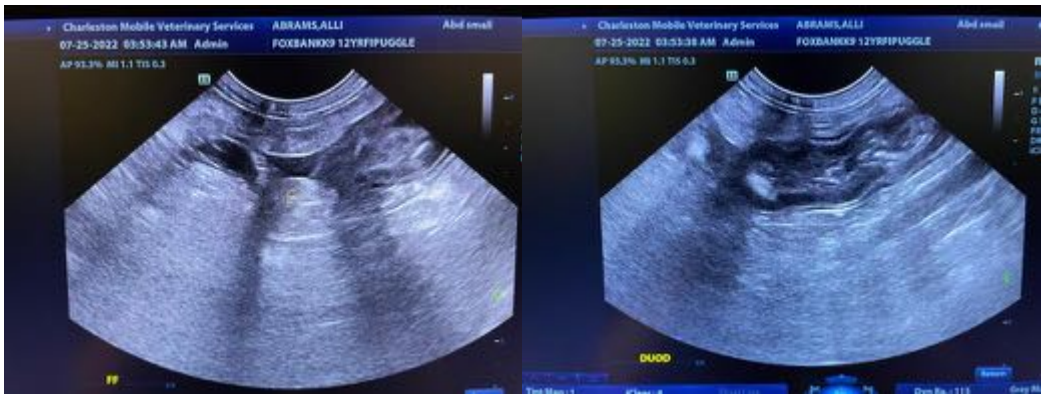

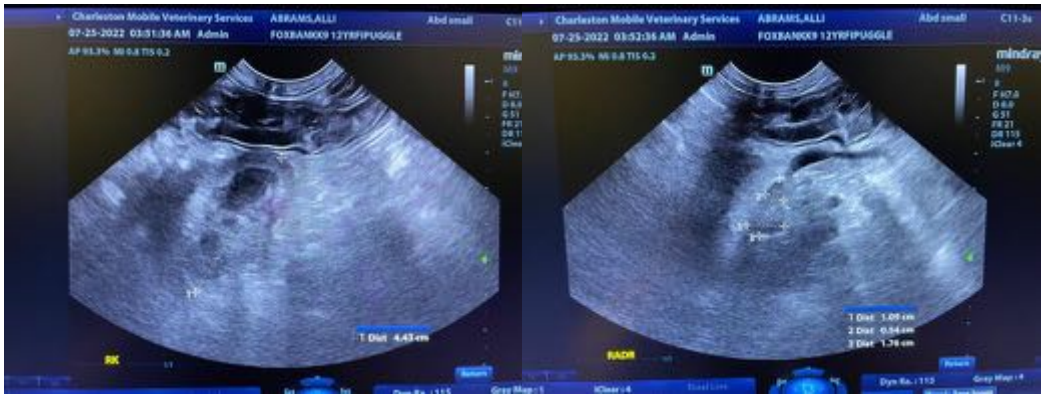

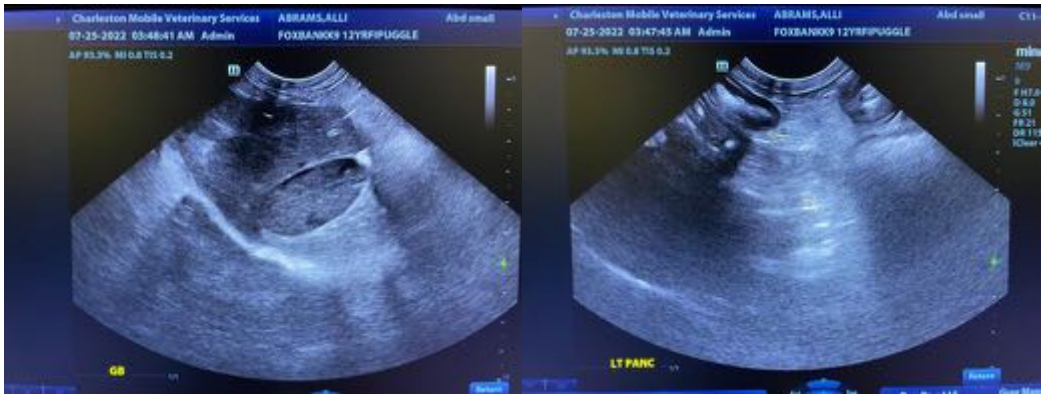

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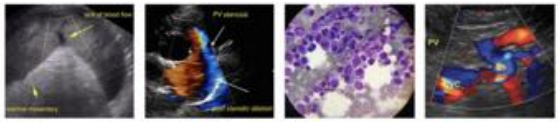

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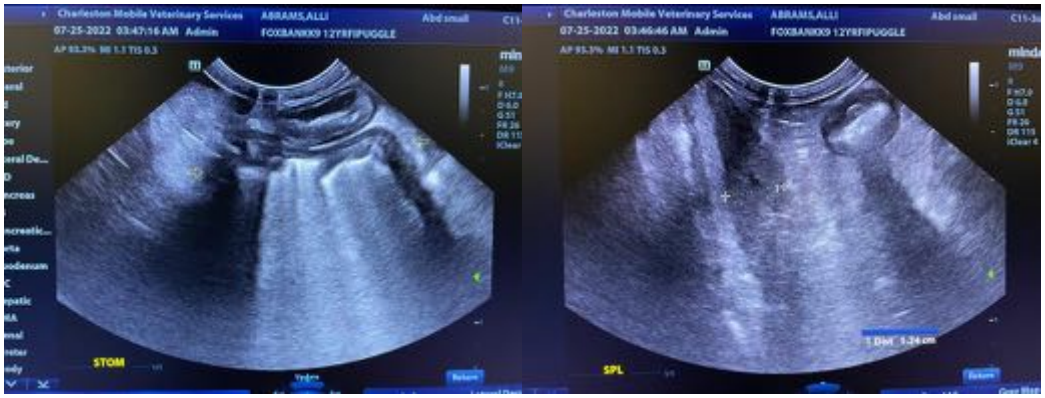

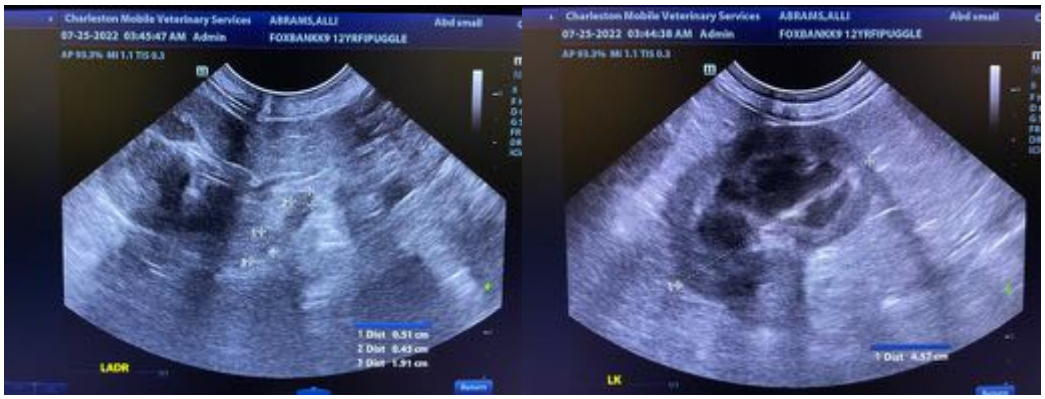

The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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.

Andrea Nicastro, MPH, DVM, Diplomate DACVIM (Small Animal Internal Medicine)
info@SonoPath.com