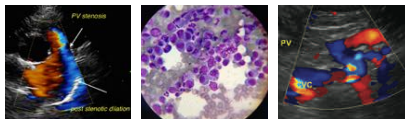
IMAGING PERFORMED BY

IntraPet.com



SonoPath
Clinical Sonography & Telecytology
EDUCATIONAL TELECONSULTATION SERVICES™
1-800-838-4268 info@sonopath.com SonoPath.com

DATE
6/17/22

PATIENT
Mona Holewinski

SPECIES
Canine

BREED
Hound Mix

SEX
Spayed Female

AGE
11/24/12

WEIGHT
41.2 lbs

INTERPRETED BY
Lisa Carioto, DVM, DVSc, Diplomate ACVIM

HOSPITAL NAME
Essex Middle River VC

REFERRING VET
Dr. Hicks

INVOICE
31067

PRESENTING CLINICAL SIGNS

CC- +vomiting, started ~2 days ago, not eating, tries to drink then vomits it all up PE- QAR, moderate dehydration. Grade 3/6 murmur; chest quiet. Abdomen palpation- tense. MM light pink, tacky, CRT ~2 sec.
Current Medications: IV Plasmalyte, Cerenia IV (1.9ml), Metronidazole infusion 15mg/kg (56 ml) 2 x's 6/16/22.
Lab Results: HCT- 60.3 (WNL but at very high end), Neuts- 15.2- slightly elevated, TP- >12, Alb. >6, Amylase- 2500 Lipase- 5131.
Date of Previous IntraPet Ultrasound: No previous.
Sedation: Not required to complete full diagnostic ultrasound.
Stat Report: DVM requested stat.
Imaging Performed By: Andi Parkinson, BS, RDMS.

ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN

Urinary System

The urinary bladder is well distended with anechoic contents. The wall is smooth and regular. No abnormalities are noted with the trigone or proximal urethra, and there is no evidence of sediment, cystoliths, polyps or a mass.

Kidneys

The **left** kidney measures 5.75 cm. The capsule is smooth. The cortex is very mildly hyperechoic and a very mild loss of the normal definition of the cortico-medullary junction is present. Mineralizations and very small nephroliths of the diverticulae and pelvis are present, without evidence of pyelectasia. The surrounding mesentery is hyperechoic.

The **right** kidney measures 5.54 cm. Findings are similar to the left kidney, however, the surrounding mesentery is severely hyperechoic.

Aortic bifurcation/trifurcation

No abnormalities observed.

Adrenal Glands

The **left** adrenal gland measures 0.76 cm at the cranial pole, 0.56 cm at the caudal pole and 2.90 cm in length. No abnormalities are noted with the gland's overall architecture, echogenicity or echotexture. The phrenico-abdominal vein and surrounding vasculature and mesentery are unremarkable.

The **right** adrenal gland is not visualized due hyperechogenicity of mesentery and hypoechogenicity of the pancreas.

Spleen

The spleen is within normal limits in size and overall architecture. The capsule is smooth. Multiple hyperechoic nodules of variable size are observed primarily along its ventral aspect, some of which cast subtle acoustic shadows. The latter are suggestive of calcifications, which may be seen in older individuals. The largest hyperechoic nodule measures 1.1 cm x 1.2 cm. Perivascular cuffing is also observed, which is consistent with myelolipomas. The echotexture and echogenicity of the spleen are otherwise within normal limits. No abnormalities are observed with its vasculature, i.e. congestion and thrombi are not identified. The mesentery ventral to the spleen is markedly hyperechoic.

Liver

There are no obvious signs of hepatomegaly and its borders are smooth and sharp. The liver's echotexture is homogeneous and appears to be within normal limits in echogenicity. The latter may be occurring due to the severe hyperechogenicity of the surrounding mesentery, thereby making it difficult to properly evaluate (the liver's echogenicity). Focal lesions are not observed and no abnormalities are observed with the hepatic vessels.

The gallbladder (GB) wall is mildly thicker than normal (1.7 mm) and hyperechoic. A moderate to large amount of free floating and inspissated echogenic material is present within the GB. The inspissated sludge forms nodules. The cystic and common bile ducts are not visualized, however, there are no obvious signs of an obstruction.

Gastrointestinal

Gas is present within the lumen of the stomach. The gastric wall is within normal limits in thickness and the wall layers are well defined, however, the submucosa is thicker than normal. The surrounding mesentery is severely hyperechoic.

Jejunum and ileo-cecal-colic junction: wall thickness is within normal limits, as is definition of the wall layers. Fogging of the mucosa is present, with very severe hyperechogenicity and loss of contrast of the mesentery surrounding the loops of bowel. A small amount of anechoic fluid is present surrounding the ileocecal colic junction.

A moderate amount of fluid and gas are present in the lumen of the loops of bowel.

Decreased peristalsis is observed throughout the GI tract.

The colonic wall is not thickened and mural detail is considered normal.

Pancreas

The **left limb** is enlarged, diffusely hypoechoic and has irregular contours. Punctate hyperechoic foci are scattered throughout the parenchyma, likely due fibrosis. Fibrosis may be an age-related change, secondary to previous episodes of pancreatitis, mineralization and amyloid deposition. The surrounding mesenteric fat is moderately to severely hyperechoic, suggestive of saponification. These findings are highly suggestive of active pancreatitis. Overt signs of neoplasia are not noted.

The **right limb**: Findings are similar to the left limb.

Other

Lymph nodes

No abnormalities are observed.

Abdominal effusion

A moderate amount of anechoic fluid is visualized throughout the abdomen, for example, surrounding the spleen.
A small amount of anechoic fluid is visualized ventral and cranial to the urinary bladder.

Mesentery

The mesentery surrounding the GI tract is diffusely hyperechoic (acoustic enhancement), which is consistent with diffuse steatitis.

Heart

A brief video clip of the heart was submitted. Pericardial and pleural effusion are not identified, nor is pulmonary edema. A mass is not observed on evaluation of the cardiac chambers. Note, a mass may be overlooked in the absence of pericardial effusion. No obvious abnormalities with contractility (sedated and measurements not performed). The left atrium may be slightly decreased in size, which is suggestive of hypovolemia.

ULTRASONOGRAPHIC FINDINGS

- **Pancreas:** Severe, diffuse pancreatitis.
- **Gallbladder:** High index of suspicion of cholecystitis. Although obvious abnormalities of the liver are not appreciated, cholestasis, cholangitis and cholangiohepatitis are most likely present.
- **Mesentery**: Diffuse steatitis and saponification
- **Ascites:** Vasculitis secondary to pancreatitis and severe inflammation is suspected, in addition to increased permeability of the GI tract. There are no signs of an obstruction or portal hypertension.
- **Gastrointestinal tract**: Gastroenteritis due to vomiting as a result of Mona's pancreatitis is suspected based on the gastric and duodenal changes. A mild, diffuse ileus is present. Some of the other GI changes may be secondary to underlying inflammatory bowel disease (jejunal changes).
- **Adrenal glands**: the right gland is not available for comparison, however, the cranial pole of the **left** is very mildly enlarged. This is most likely secondary to adrenal hyperplasia as a result of stress (illness).
- High index of suspicion of *hypovolemia* based on blood work and the left atrium appears slightly small in size.

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

The following are suggested/recommended

Transfer to a 24-hour emergency hospital would be ideal for 24 care

Mona's blood work showed evidence of dehydration; a bolus of 10 ml/kg over 20 minutes is suggested. Her hydration status should be reassessed and an additional bolus of 10 ml/kg over 20 minutes may be administered, if necessary.

Monitor weight twice a day (due to heart murmur); helps monitor ins and outs to maintain hydration and avoid volume overload.

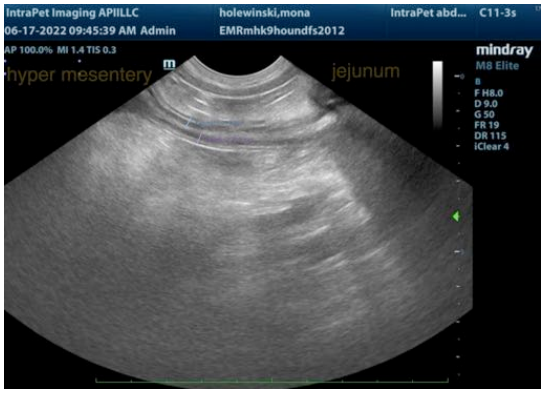
Analgesia – IV, ideally a CRI of an opioid, or CRI of lidocaine and ketamine. Not sure if she will tolerate gabapentin orally, in addition to IV analgesics.

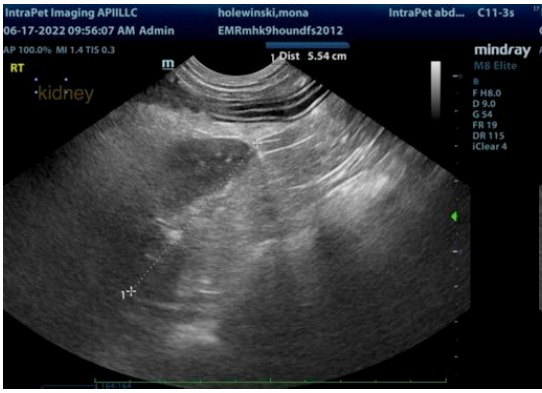
Cerenia intravenously, at 1 mg/kg. If it is ineffective, you could try combining it with metoclopramide as a CRI. Ondansetron is another option (IV), although it is more expensive.

Once she is ready to eat, a bland, easily digestible, low fat, moderately restricted fibre diet is recommended to help decrease bloating and cramps.

If not febrile, a warm (not hot) towel or heating blanket placed on his abdomen can help soothe his abdominal pain. Laser therapy is also helpful, if available.

Fresh frozen plasma or a colloid would be ideal due to ascites.

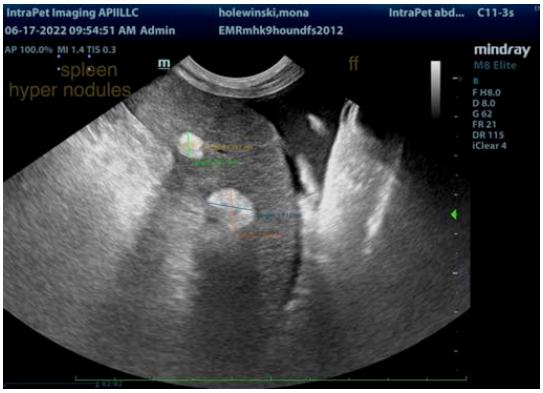


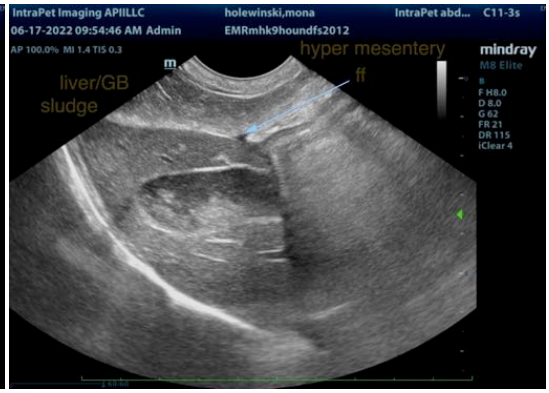

IntraPet Imaging APIILLC
holewinski,mona
IntraPet abd...
C11-3s
06-17-2022 09:56:07 AM Admin
EMRmhk9houndfs2012
AP 100.0% MI 1.4 TIS 0.3
1 Dist 5.54 cm
RT
kidney
mindray
M8 Elite

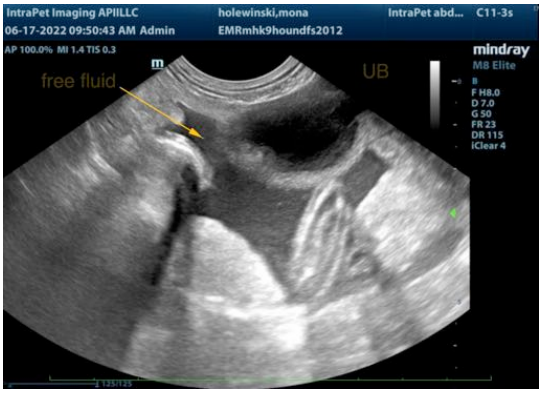

IntraPet Imaging APIILLC
holewinski,mona
IntraPet abd...
C11-3s
06-17-2022 09:55:36 AM Admin
EMRmhk9houndfs2012
AP 100.0% MI 1.4 TIS 0.3
1 Dist 2.35 cm
Pancreas
mindray
M8 Elite


IntraPet Imaging APIILLC
holewinski,mona
IntraPet abd...
C11-3s
06-17-2022 09:55:07 AM Admin
EMRmhk9houndfs2012
AP 100.0% MI 1.4 TIS 0.3
1 Dist 2.90 cm
2 Dist 0.56 cm
3 Dist 0.76 cm
LT
LADr
mindray
M8 Elite


IntraPet Imaging APIILLC
holewinski,mona
IntraPet abd...
C11-3s
06-17-2022 09:55:16 AM Admin
EMRmhk9houndfs2012
AP 100.0% MI 1.4 TIS 0.3
1 Dist 5.75 cm
LT
mindray
M8 Elite


IntraPet Imaging APIILLC
holewinski,mona
IntraPet abd...
C11-3s
06-17-2022 09:54:51 AM Admin
EMRmhk9houndfs2012
AP 100.0% MI 1.4 TIS 0.3
spleen
hyper nodules
ff
mindray
M8 Elite


IntraPet Imaging APIILLC
holewinski,mona
IntraPet abd...
C11-3s
06-17-2022 09:54:46 AM Admin
EMRmhk9houndfs2012
AP 100.0% MI 1.4 TIS 0.3
hyper mesentery
liver/GB
sludge
ff
mindray
M8 Elite



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.

Lisa Carioto, DVM, DVSc, Diplomate ACVIM
Lisa.Carioto@sonopath.com