



PATIENT

Romeo Stefanelli

SPECIES

Canine

BREED

Shih Tzu

SEX

Neutered Male

AGE

14 Years

WEIGHT

N/A

INTERPRETED BY

Lisa Carioto, DVM,
DVSc, Diplomate
ACVIM

IMAGING PERFORMED BY

Diane McFadden

HOSPITAL NAME

All Creatures Great &
Small Denville

REFERRING VET

Dr. Mitrovic

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DATE

4/22/22

PRESENTING CLINICAL SIGNS

history of liver hepatocellular carcinoma (lobe removed and biopsied in 2016). Today assessing the progression . liver support : vit B, denamarin
Abnormal PE/Chem/CBC/UA Results: AST, ALT, ALKP elevated; LDH , amylase elevated

ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN

Urinary System

The **urinary bladder** is adequately 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, polyyps or a mass.

Prostate

The prostate is homogenous and measures 6.78 mm, which is within normal limits for a neutered male.

Kidneys

The **left** kidney measures 4.28 cm. The capsule is smooth, however, the cortex is mildly hyperechoic and a mild loss of the normal definition of the cortico-medullary junction is present. Mineralizations of the diverticulae are present, without evidence of nephroliths or pyelectasia. Fat is present within the pelvis. Blood flow is considered within normal limits. The surrounding mesentery is not hyperechoic.

The **right** kidney measures 4.03 cm. Findings are similar to the left kidney, however, the surrounding mesentery is mildly hyperechoic, in association with the liver.

Aortic bifurcation/trifurcation

No abnormalities observed.

Adrenal Glands

The **left** adrenal gland measures 0.63 cm at the cranial pole, 0.44 cm at the caudal pole and 1.65 cm in length. The cranial pole is rounded and nodular, but similar in appearance compared to his previous ultrasound from March 25, 2020. No abnormalities are noted with the gland's echogenicity or echotexture. The phrenico-abdominal vein and surrounding vasculature and mesentery are unremarkable.

The **right** adrenal gland measures 0.89 cm at the cranial pole, 0.37 cm at the caudal pole and 2.29 cm in length. These measurements are similar to those from 2020. The phrenico-abdominal vein and surrounding vasculature do not show obvious signs of metastases or thrombi.

Spleen

A splenic mass, measuring 2.70 cm in diameter x 2.68 cm in length is observed. The mass is similar in echogenicity to the normal splenic parenchyma, however, multiple hyperechoic nodules of variable size are noted scattered throughout the mass, as well as the rest of the spleen. A number of the hyperechoic nodules are, in fact, perivascular cuffing, i.e. consistent with myelolipomas. The spleen is hypoechoic to the liver. One of the splenic nodules, measuring 5.34 mm in diameter x 7.65 cm in length, casts an acoustic shadow. No abnormalities are observed with its vasculature, i.e. congestion and thrombi are not identified.

Liver



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Multiple hepatic masses of variable size and echogenicity and echotexture are present.

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The left liver has scalloped, rounded borders. A severely hyperechoic, yet homogeneous mass, with irregular borders is present intrahepatically (within the left liver lobe). It measures 4.0 cm in diameter x 4.34 cm in length. The parenchyma surrounding the primary severely hyperechoic mass is also hyperechoic.

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Adjacent, but medio-ventrally to the above mass is a hyperechoic, yet homogenous, well circumscribed nodule, measuring 1.17 cm in diameter x 4.34 cm in length.

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One mass, which is homogeneous and similar in echogenicity and echotexture to normal hepatic parenchyma, measures 4.37 cm in diameter x 7.51 cm in length.

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A second, heterogeneous mass, with a hypoechoic center and ill-defined hyperechoic regions, of variable echogenicity, measures 2.29 cm in diameter x 3.25 cm in length.

A third, more echogenic mass, is visualized, measuring 3.42 cm in diameter x 3.43 cm in length.

A fourth, heterogeneous mass, measuring 2.93 cm in diameter x 2.79 cm in length, is noted, with anechoic lacunae.

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Several masses have multiple anechoic lacunae; it measures 2.99 cm in diameter x 2.90 cm in length.

Multiple hyperechoic nodules are visualized within the liver, one of which 1.53 cm in diameter x 1.53 cm in length.

WEIGHT

N/A

The mesentery surrounding the liver is hyperechoic.

The gallbladder wall is within normal limits in size, thickness and echogenicity. A small amount of echogenic material (sludge) is present within the lumen. The sludge is free floating, gravity-dependent, and inspissated, forming nodules, which are adhered to the wall. There are no obvious signs of an obstruction.

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Gastrointestinal

The gastric wall is within normal limits in thickness and the wall layers are well defined. No obvious abnormalities are observed with its peristalsis.

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The small intestinal wall thickness, including the duodenum (0.33 cm), is within normal limits and the definition of the wall layers is preserved. Mild fogging and stippling of the mucosa are present diffusely throughout the small intestines. Some loops of bowel show signs suggestive of very mild striations. No abnormalities are observed with the ileo-cecal-colic junction.

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A large amount of ingesta and gas are present within the transverse colon.

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

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Pancreas

The left limb and body are markedly hypoechoic and surrounded by a severely hyperechoic mesentery.

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The right limb is severely enlarged, measuring approximately 1.78 cm in diameter x 3.78 cm in length. It has irregular contours and a hyperechoic mesentery.

Other

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Lymph nodes



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Lymph node ventral to left limb of pancreas: prominent, but within normal reference range (2.76 mm in diameter x 9.00 mm), with hyperechoic mesentery surrounding it and the pancreas.

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Abdominal effusion

A scant amount of anechoic effusion is visualized in the right cranial abdomen, in between the loops of intestines. However, a mild amount of anechoic fluid, with some echogenic debris, is observed in the region of the stomach.

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Heart

Two videoclips of the heart are submitted. No pericardial or pleural effusion is identified. No obvious signs of a mass is observed on evaluation of the right atrium or auricle. However, a mass may be overlooked in the absence of pericardial effusion.

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ULTRASONOGRAPHIC FINDINGS

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- Multiple, large, hepatic masses of variable size and echogenicity, as well as one that appears cavitory, suggestive of a hepatocellular carcinoma. The hepatic masses may be compressing the stomach and displacing it, thereby affecting Romeo's appetite. A number of the masses that are homogeneous may be due to nodular hyperplasia and regeneration.

WEIGHT

N/A

- A small amount of abdominal effusion is also present, which may be due to portal hypertension, however, paraneoplastic effusion cannot be excluded.
- The pancreatic changes of the left limb and body are suggestive of acute pancreatitis, however, the right limb shows signs of a mass effect. Metastases to the right limb of the pancreas cannot be excluded as the cause of the abnormalities observed with the right limb.
- The splenic mass is suggestive of extramedullary hematopoiesis or nodular or lymphoid hyperplasia with myelolipomas. One of the hyperechoic nodules appears calcified.
- Overt lymphadenomegaly is not observed, however, mild reactive hyperplasia is suggested by a few mildly prominent lymph nodes.
- Mild renal changes suggestive of age-related degeneration are observed.

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INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

A fine needle aspirate of the more cavitory mass and the right limb of the pancreas may be performed to determine if metastases are present.

Referral to a board certified oncologist may provide suggestions regarding possible treatment protocols that are not overly aggressive, for example, toceranib (Palladia).

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Blood work, consisting of a CBC, serum biochemical profile, SDMA, and a urinalysis, are recommended. Additional supportive care for the liver may be suggested depending on the results, for example, vitamin E, zinc, etc.

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Romeo's current treatments should be continued, providing he continues to eat well.



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Monitor his weight, body and muscle condition scores.

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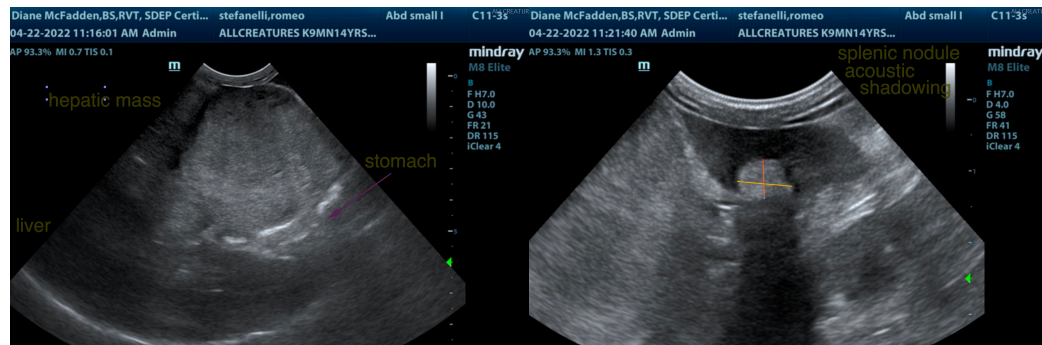
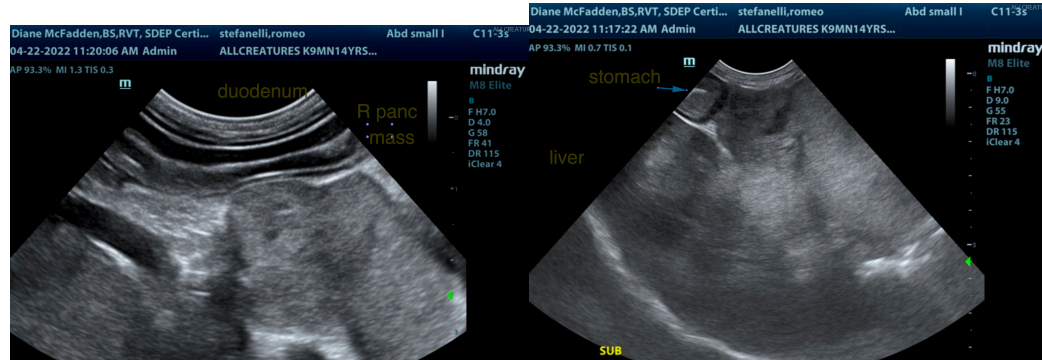
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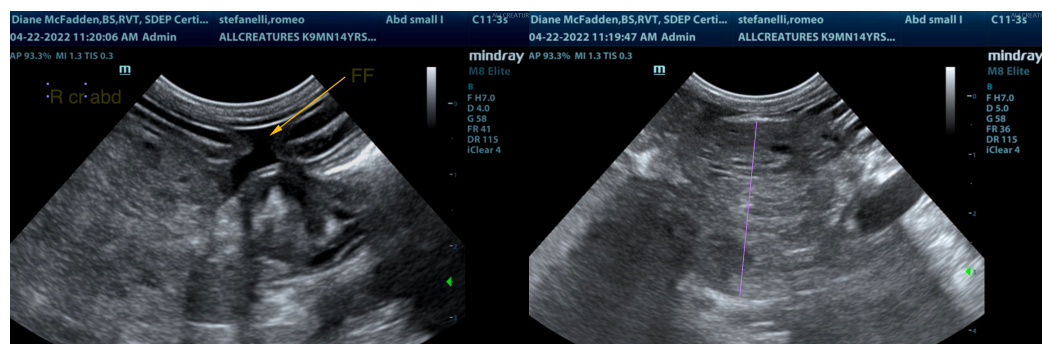
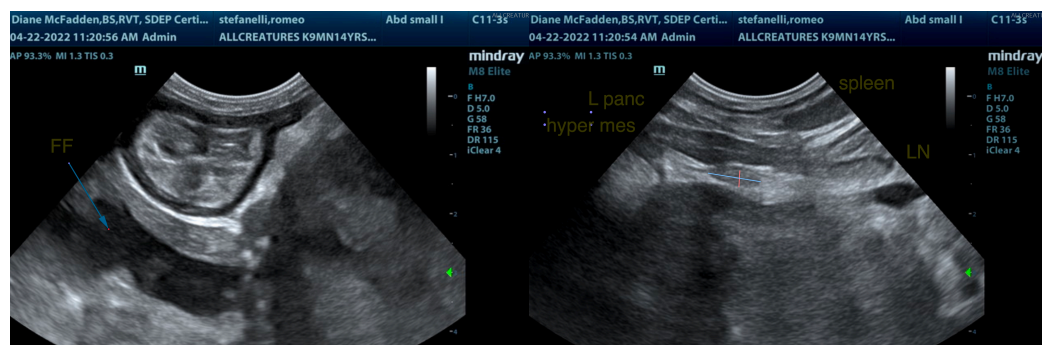
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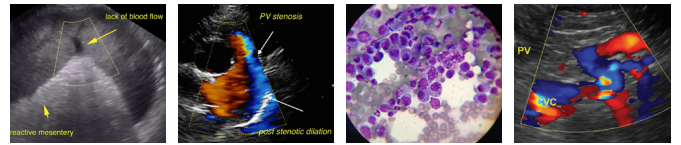
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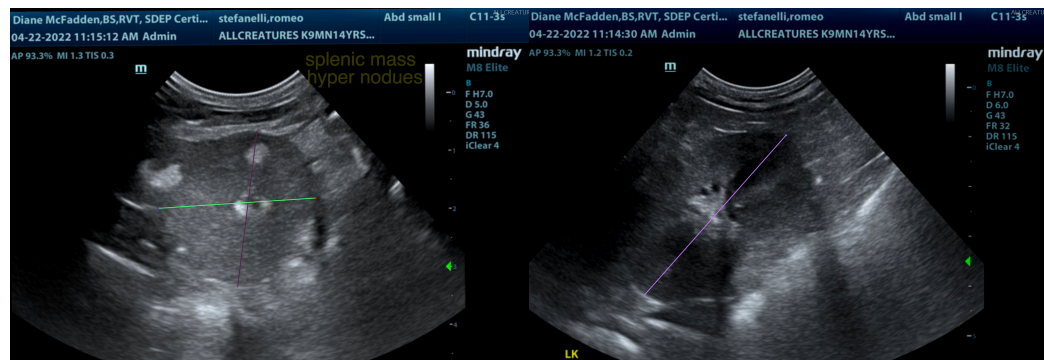
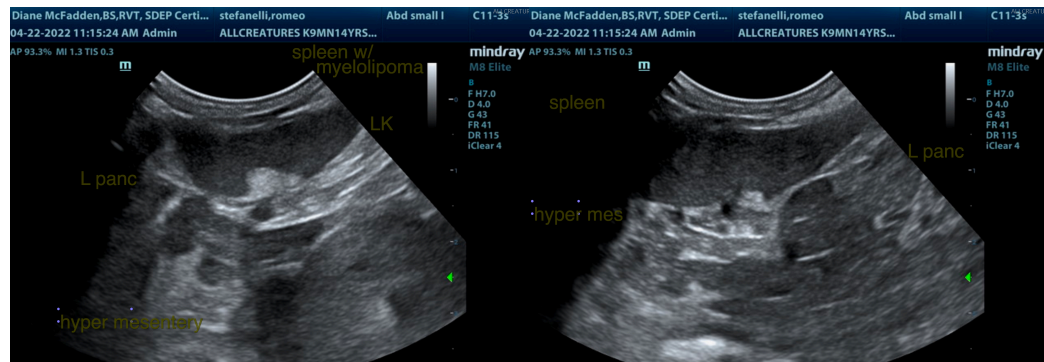
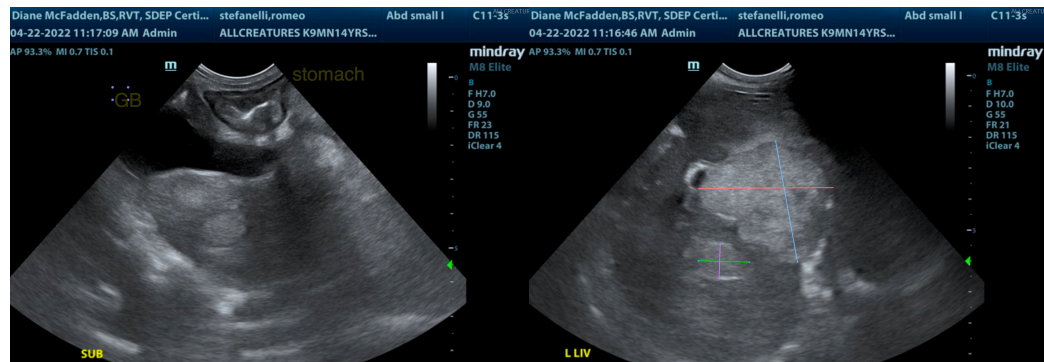
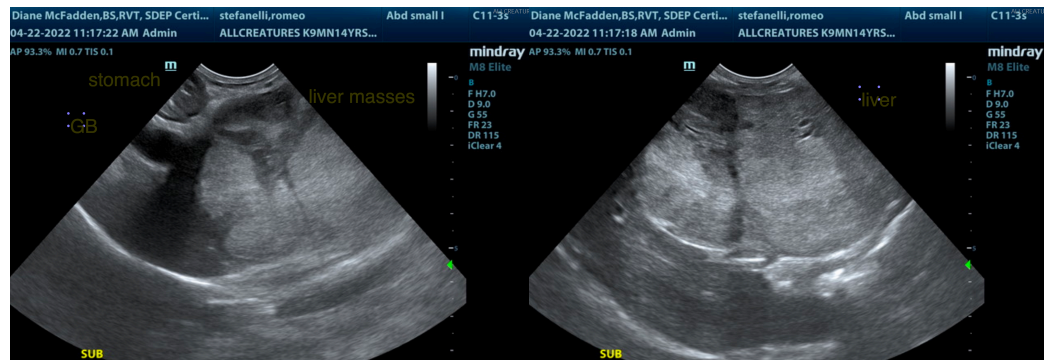
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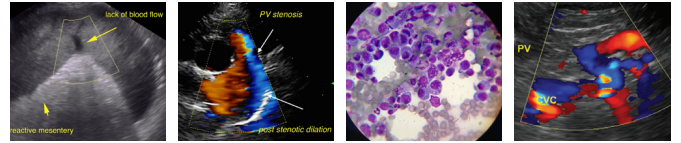
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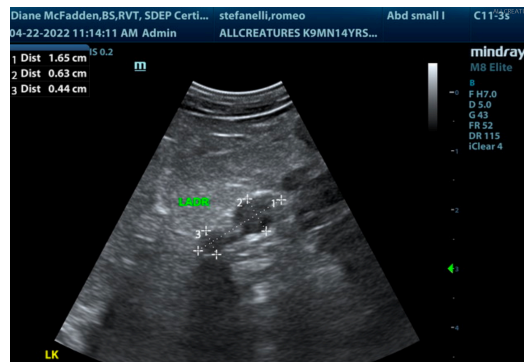
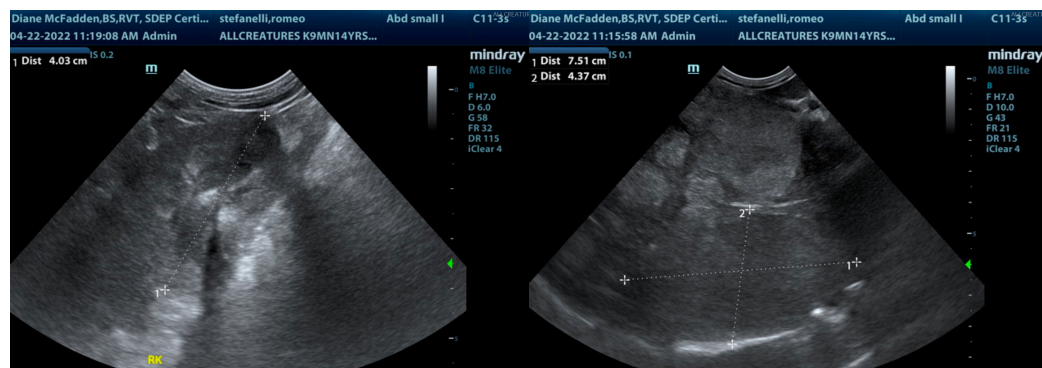
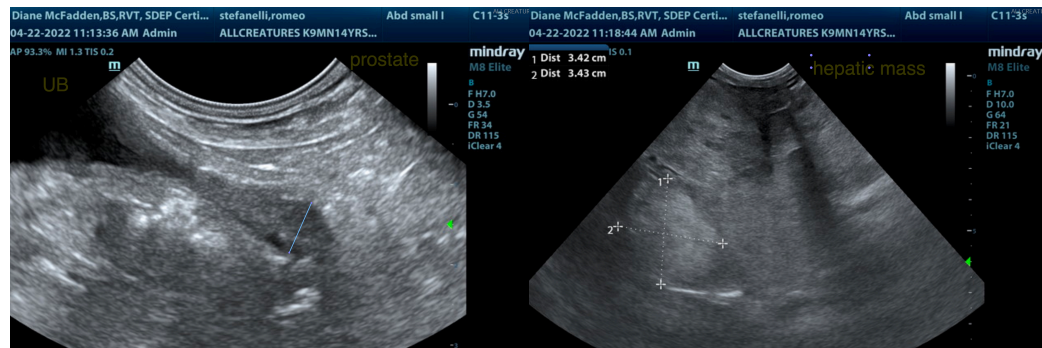
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The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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.

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