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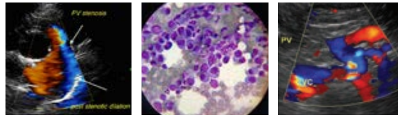


SonoPath
Clinical Sonography & Telecytology
EDUCATIONAL TELECONSULTATION SERVICES™
1-800-838-4268 info@sonopath.com SonoPath.com

DATE
6/3/22

PATIENT
Penny Calligan

SPECIES
Canine

BREED
Labrador X

SEX
Spayed Female

AGE
7/15/13

WEIGHT
68.6 Pounds

INTERPRETED BY
Lisa Carioto, DVM, DVSc, Diplomate ACVIM

IMAGING PERFORMED BY
Andi Parkinson RDMS

HOSPITAL NAME
Belvedere Vet Center

REFERRING VET
Dr. Moulder

INVOICE
38346

PRESENTING CLINICAL SIGNS

P presented for evaluation of trouble walking and loss of appetite. O reports periodic weakness since a long walk on sunday. Appetite decrease over last ~3-4 weeks. Weight loss of 4-5# since February.
PE- pale mm, abnormal abdominal palpation.

Current Medications: None.
Lab Results: See attached.
Radiographs: large mass effect pushing abdominal viscera caudally.
Date of Previous IntraPet Ultrasound:
Sedation: Not required to complete full diagnostic ultrasound.
Stat Report: Not requested.

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, polyps or a mass.

Kidneys
The **left** kidney measures 6.96 cm. The capsule is smooth. The cortex is mildly hyperechoic, i.e., it is isoechoic to the spleen. A mild loss of the normal definition of the cortico-medullary junction is present. Mineralizations of the diverticulae and pelvis are present, without evidence of nephroliths or pyelectasia. An accumulation of intrapelvic fat is noted. The surrounding mesentery is very mildly hyperechoic.

The **right** kidney measures 6.75 cm. Findings are similar to the left kidney.

Aortic bifurcation/trifurcation
No abnormalities observed.

Adrenal Glands
The **left** adrenal gland measures 1.55 cm at the cranial pole, 1.11 cm at the caudal pole and 4.17 cm in length. The adrenal gland is severely heterogeneous, with multiple hyperechoic areas, suggestive of ischemia and/or fibrosis, and possibly fat. Multiple hypoechoic nodules of variable size and shape area also observed. The phrenico-abdominal vein and surrounding vasculature and mesentery are unremarkable.

The **right** adrenal gland measures 1.80 cm at the cranial pole, 0.72 cm at the caudal pole and 3.91 cm in length. The cranial pole is hyperechoic and in the form of a well delineated nodule. The nodule measures 1.43 cm in diameter x 2.08 cm in length. The phrenico-abdominal vein and surrounding vasculature and mesentery are unremarkable.

Spleen
The spleen is within normal limits in size, architecture, echotexture, and echogenicity. The capsule is smooth. Perivascular cuffing, consistent with myelolipomas, is observed. The latter are not considered clinically significant. No abnormalities are observed with its vasculature, i.e. congestion and thrombi are not identified.

Liver
Hepatomegaly of the right liver is present, particularly adjacent to the diaphragm. The right liver is replaced by a heterogeneous mass with round margins. The mass is characterized by hyper and hypoechoic areas in the form of ill-defined "patches". A well-defined hypoechoic encapsulated oblong region is noted dorsally. This latter area measures 2.6 cm in diameter x 5.5 cm in length. The entire mass (liver lobe) measures

approximately 13.5 cm in diameter x 15.6 cm in length. A "smaller", well-circumscribed mass, which measures 10.27 cm x 10.89 cm, is noted within the larger right liver lobe mass. The mass is avascular. A scant (less than 5 mm) amount of anechoic fluid is visualized between liver lobes.

A large portion of the remainder of the liver is hyperechoic and heterogeneous, with hyperechoic nodules of variable size.

An anechoic to hypoechoic structure is observed in the left liver. Areas within the structure appear cystic. It measures 2.8 cm in diameter x 4.2 cm in length and is avascular. The surrounding parenchyma is hyperechoic. No abnormalities are observed with the hepatic vessels.
The gallbladder is not well visualized.

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.

The small intestinal wall thickness is within normal limits and the definition of the wall layers is preserved. Abnormally dilated loops of bowel are not observed.

The colonic wall is not thickened and mural detail is considered normal. Stools are well formed. There are no obvious signs of a mass, foreign body, infiltrative disease or an obstruction in the gastrointestinal tract.

Pancreas

The **left** and **right** pancreas have a mildly coarse echotexture. Hypoechoic nodules of variable size and pinpoint hyperechoic foci are scattered throughout the parenchyma. These changes are suggestive of nodular hyperplasia and fibrosis, respectively. Signs of active pancreatitis or neoplasia are not appreciated.

Other

Lymph nodes

Possible hypoechoic, well defined, hepatic lymph node noted adjacent to the cystic mass in the right liver. It measures 1.86 cm in diameter x 1.79 cm in length. The mesentery surrounding the lymph node is hyperechoic.

Abdominal effusion

A scant amount of anechoic fluid is visualized between liver lobes.

ULTRASONOGRAPHIC FINDINGS

- **Liver**: The right liver is replaced by a heterogeneous mass. Differential diagnoses include an adenoma with necrotic regions, however, certain areas have a disorganized architecture, which is more suggestive of malignancy, therefore, a carcinoma or adenocarcinoma, cannot be excluded. The structure in the left liver may be an adenocarcinoma or carcinoma.

- **Adrenal glands**: The large, well delineated nodule present at the cranial pole of the right adrenal, may be due to a benign adenoma, fat (myelolipoma), or hyperplasia secondary to chronic illness (a form of stress). The left adrenal is enlarged and heterogeneous, which may be due to age-related changes, for example, areas of nodular hyperplasia, and the presence of fat and fibrosis. Neither has a typical appearance of pheochromocytoma or carcinoma, however, further diagnostics would be required to excluded these with certainty. Bilateral adrenal neoplasia is considered less likely. Subclinical hyperplasia secondary to pituitary-dependent hyperadrenocorticism remains a possible differential diagnosis.

- **Kidneys**: Changes are suggestive of age related to degeneration.
- **Pancreas:** Changes are suggestive of nodular regeneration and fibrosis. There are no signs of pancreatitis or neoplasia.

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

An arterial blood pressure

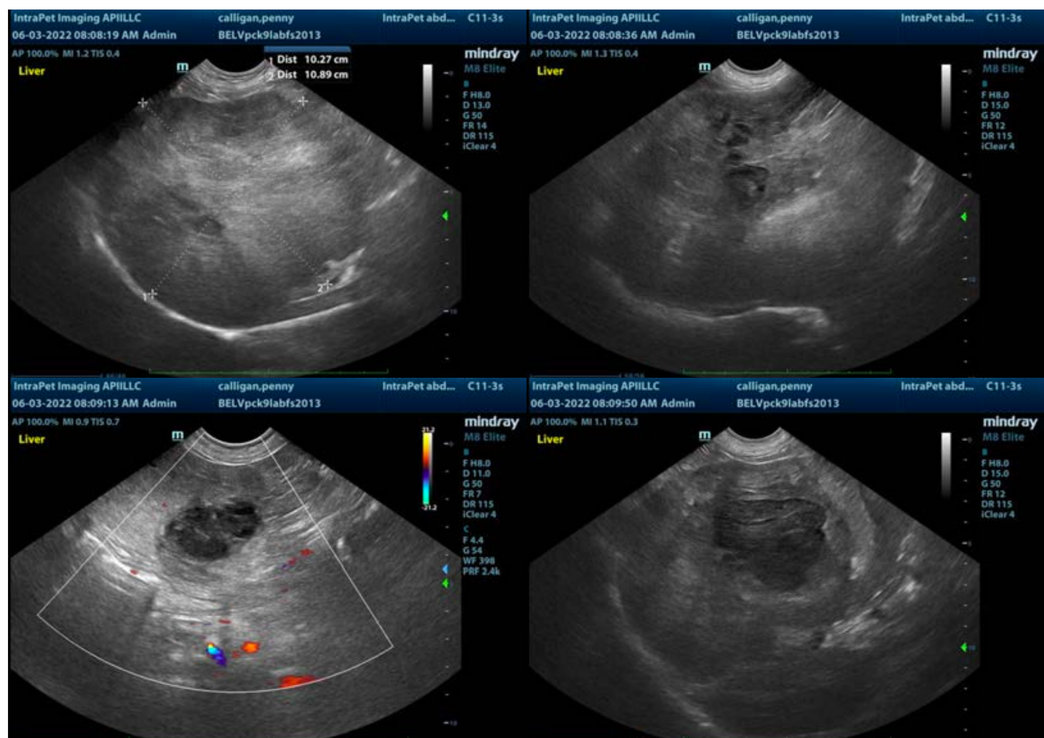
Fine needle aspirates of the hepatic masses with a 25 gauge needle (pending a coagulation profile) may be performed *judiciously* to help obtain a diagnosis, however, there is still a risk of hemorrhage, particularly if necrotic areas are aspirated.

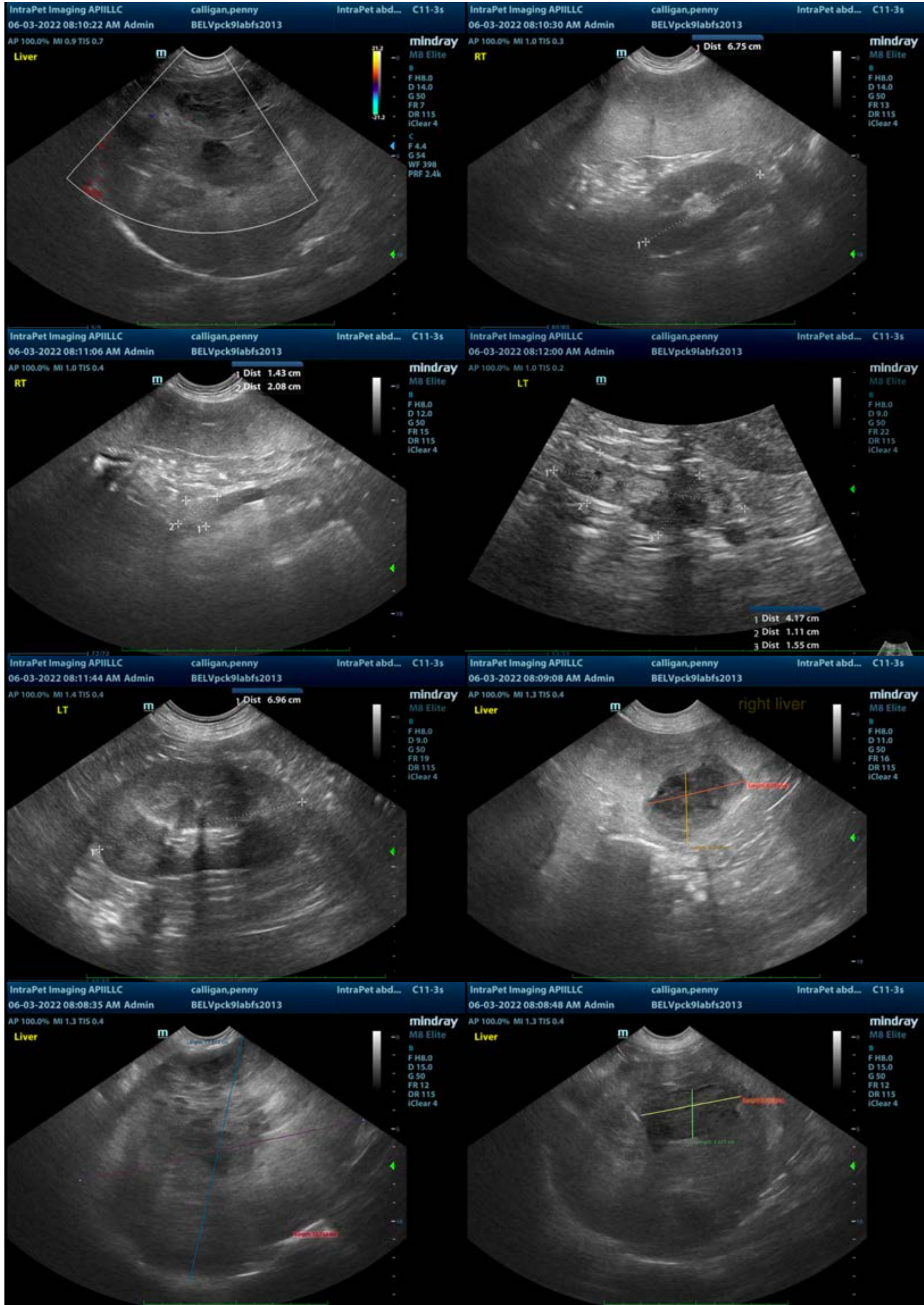
Vitamin K (0.5 mg/kg SQ q8-12h for 1-3 doses), a minimum of 30 minutes prior to the fine needle aspirate, is suggested, even if PT/PTT within normal limits.
A decision whether the mass may be surgically resected will depend on cytology results, as well as a CT scan and angiography.

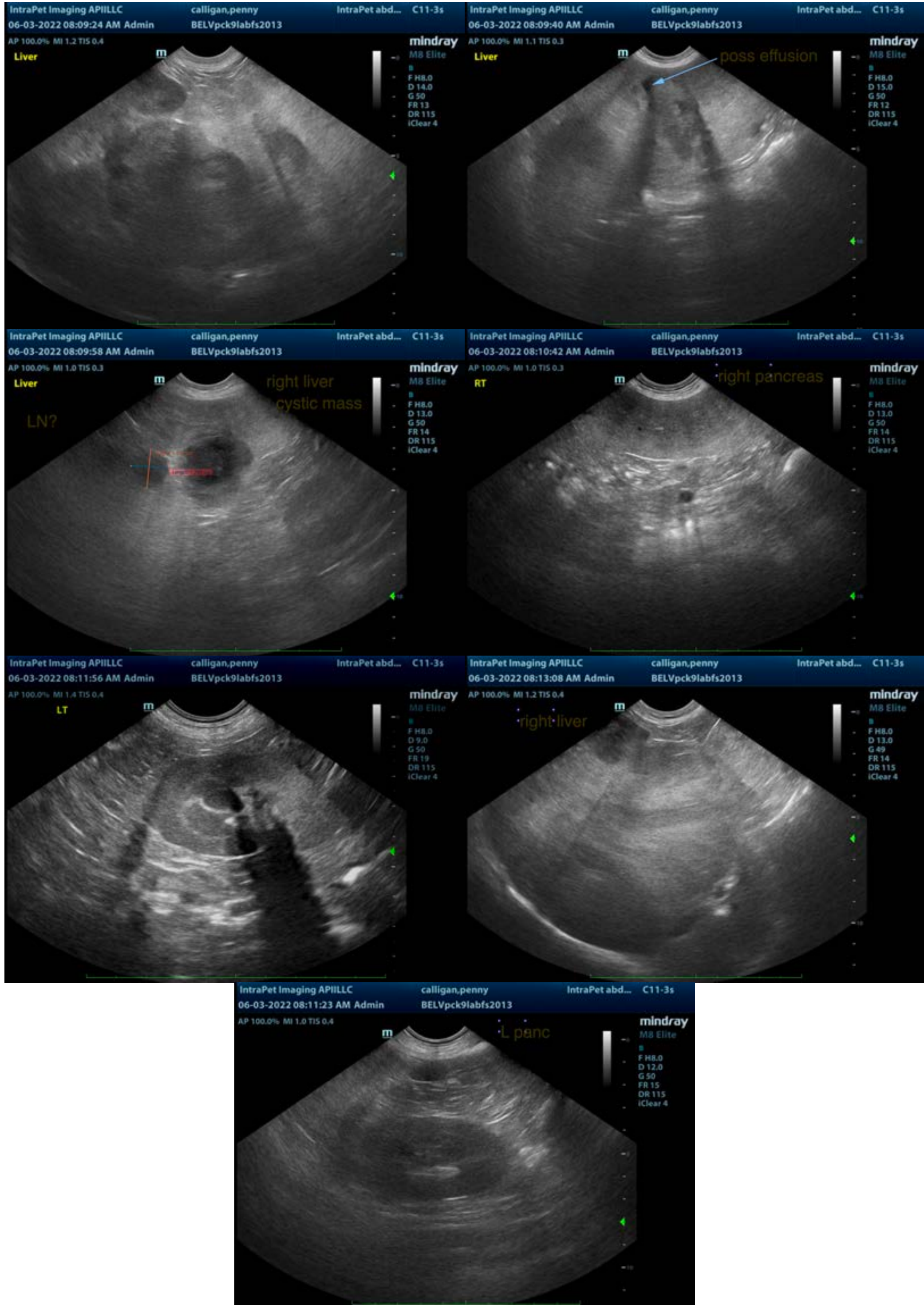
Penny should be blood typed if surgery is to be performed.

If surgery is performed, fine needle aspirates of the adrenal glands may be considered, providing arterial pressure is stable.

If hypertensive, an alternative to the FNAs of the adrenal glands would be to perform the urine metanephrine test to exclude pheochromocytoma.







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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.

Lisa Carioto, DVM, DVSc, Diplomate AVIM

Lisa.Carioto@sonopath.com