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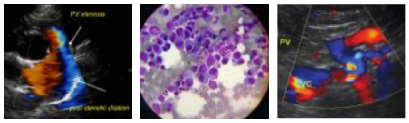

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DATE

7.10.2023

PATIENT

Dolly Bell

SPECIES

Canine

BREED

Beagle

SEX

Spayed Female

AGE

9/17/2008

WEIGHT

41 lbs

INTERPRETED BY

Beth Johnson, DVM DACVIM

HOSPITAL NAME

PetVet of Clarksville

REFERRING VET

Dr. Martof

INVOICE

13638

PRESENTING CLINICAL SIGNS

Progressive ALT, ALP, GGT elevation over last year, Mild proteinuria, low USG. Drinks and urinates excessively per O. Eats hills k/d and Royal Canin Rx food.

Current Medications: Benazepril 5 mg BID, HWP, topical F/T.
Lab Results: See attached.
Date of Previous IntraPet Ultrasound: No previous.
Sedation: Not required to complete full diagnostic ultrasound.
Stat Report: Not requested.
Imaging Performed By: Andi Parkinson, BS, RDMS.

ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN

Urinary System

Urinary bladder is adequately distended with anechoic contents. No masses, inflammatory changes, echogenic sediment or cystoliths are observed. The urinary bladder, trigone and visible pelvic urethra are normal in thickness with a smooth mucosal surface.

The left kidney is overall normal in size (5.61 cm) 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. Pyelectasia is noted (0.70 cm in the transverse view). There is no evidence of mineral or infarcts observed.

The right kidney is overall normal in size (6.08 cm) 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 pyelectasia, mineral or infarcts observed.

Adrenal Glands

Adrenal glands are mildly plump/swollen in size (left 0.72 cm at the cranial pole / 0.49 cm at the caudal pole) (right; 0.63 cm at the cranial pole / 0.81 cm at the caudal pole). Normal shape and contour are maintained without evidence of capsular invasion. Corticomedullary structure is unremarkable. Visible surrounding vasculature appears normal.

Spleen

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). Multifocal well-demarcated hyperechoic homogenous nodules are noted. Additionally, there are multifocal 1.00-2.00 cm in diameter heterogenous, hypo- to anechoic nodules throughout the parenchyma. Splenic vasculature appears normal.

Liver

Liver is subjectively enlarged with mildly irregular margins. Parenchyma is markedly heterogenous/nodular characterized by multiple poorly defined hypoechoic nodules within otherwise hyperechoic liver parenchyma. Visible vasculature and biliary tree appear normal without distension or congestion.

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 visible stomach wall is normal in thickness and layering. The lumen of the stomach is mildly distended with echogenic non-shadowing luminal contents and gas consistent with normal ingesta. There is 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. 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 and layering. Contents are consistent with normal formed feces and gas.

Pancreas

The observed pancreas appears appropriately isoechoic to surrounding omental fat. Visible capsule is smooth and normal in contour. Visible pancreatic parenchyma is homogenous and unremarkable. There is no visible pancreatic duct dilation. There is no evidence of active peripancreatic inflammation.

Free Abdomen

There is no evidence of peritoneal effusion. There is no apparent lymphadenopathy.

ULTRASONOGRAPHIC FINDINGS

Findings

- The heterogenous/nodular liver could be consistent with benign processes such as nodular hyperplasia, steroid or vacuolar hepatopathy, extramedullary hematopoiesis, or even chronic inflammatory disease. However, given the marked degree of nodular change and the appearance of the nodules, infiltrative round cell and or metastatic neoplasia cannot be definitively ruled out and should be further investigated.

- Similarly, the hyperechoic splenic nodules are most consistent with benign myelolipomas, or potentially fibrosis or calcification of old hematomas, infarcts, chronic inflammation, granulomatous disease, etc. The concurrent hypo- to anechoic splenic nodules could also represent benign lesions (such as cysts, hematomas, nodular hyperplasia, extramedullary hematopoiesis). However, infiltrative neoplasia can mimic these benign lesions, and similar to the liver, cannot be ruled out without tissue 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.

- Mild bilateral adrenomegaly – consistent with adrenal hyperplasia secondary to pituitary dependent hyperadrenocorticism vs stress or normal variant. Interpret in combination with clinical signs of hyperadrenocorticism.

- Age-related kidney changes with left kidney pyelectasia – Differentials for pyelectasia include pyelonephritis, diuresis, congenital malformation or ureteral or lower urinary tract obstruction.

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

Differentials for this patient's polyuria/polydipsia include mild or emerging kidney disease (given the reported proteinuria). However, azotemia is not reported and is unknown; or potentially, given the adrenal

gland and even liver and gallbladder changes, both the proteinuria and the PU/PD could be secondary to hyperadrenocorticism. A low-dose dexamethasone suppression test could be considered for further investigation of possible hyperadrenocorticism. Additionally (if not recently evaluated) a blood pressure is recommended. Having said that, while as described above, both the liver and splenic changes can occur with benign disease, ruling out malignancy is recommended prior to further evaluating hyperadrenocorticism and could potentially be achieved via a fine-needle aspirate of the liver and spleen (if coagulation status of the patient is appropriate). In the meantime, given the concurrent gall bladder debris and reported liver values, empirical hepatic nutraceuticals including Ursodiol can be considered.

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.

Beth Johnson, DVM DACVIM
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