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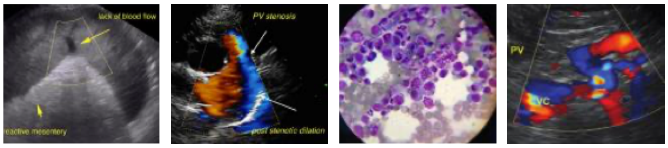
Clinical Sonography & Telecytology
EDUCATIONAL TELECONSULTATION SERVICES™



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PATIENT

Kika Rivera

SPECIES

Canine

BREED

Schnauzer

SEX

Spayed Female

AGE

11 years

WEIGHT

32.8 lbs

INTERPRETED BY

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

IMAGING PERFORMED BY

Dr. Ferrer DVM

HOSPITAL NAME

Paseos VC

REFERRING VET

Dr. Diamaris Trinidad

INVOICE

11387

DATE

8.11.22

PRESENTING CLINICAL SIGNS

History: Presented as a referral for an abdominal ultrasound to evaluate increased liver enzymes. The patient has shown elevated hepatic enzymes for 1 month. This was an incidental finding since no symptoms were presented. On 7/22/22 ALT was within normal limits on 110 U/L and ALP was > 2,000 U/L. Patient went through a 2-week antibiotic treatment. Chemistry was repeated on 8/4/22 and ALT was on high on 136 U/L. and ALP was still > 2,000 U/L. PT has a history of urinary bladder stones and on occasions expelled them in the urine.

Abnormal PE/Chem/CBC/UA Results: PE: Heart murmur grade 4/6 systolic BW: CBC: MPV: 13.8 (8.7-13.2) Plateletcrit 0.48 (0.14-0.46) CHEM: 7-22-22 ALP > 2,000 (23-212) ALT is normal 110 (10-125) CheM: 8-4-22 ALT 136 (10-125) ALP: > 2000 (23-212)

ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN

Urinary System

The **urinary bladder** is mildly to moderately distended. The wall in the region of the apex is thickened (up to 0.62 cm) and irregular. The wall tapers to a normal thickness as it extends towards the cystourethral junction. Several cystic calculi are visualized, the largest measuring 0.37 cm in diameter. A small amount of gravity dependent, urinary bladder sand is also seen. The visible portion of the proximal urethra is normal.

The **left kidney** is normal size (5.76 cm in length); normal shape and architecture with smooth peripheral margins. The cortex is mildly thickened and there is mild loss of corticomedullary distinction. There is no evidence of pyelectasia, nephroliths, infarcts or hydroureter.

The **right kidney** is normal size (5.96 cm in length); normal shape and architecture with smooth peripheral margins. The cortex is mildly thickened and there is mild loss of corticomedullary distinction. There is no evidence of pyelectasia, nephroliths, infarcts or hydroureter.

Adrenal Glands

The **left adrenal gland** is normal size (0.44 cm at cranial pole) (0.54 cm at caudal pole); normal shape; and smooth peripheral contours. A few small, mineralized foci are observed within the parenchyma. In the remainder of the gland there is normal glandular echogenicity and detail. The phrenicoabdominal vein and surrounding vasculature are normal.

The **right adrenal gland** is normal size (0.47 cm at cranial pole) (0.31 cm at caudal pole) (1.54 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 (1.51 cm in width at the level of the hilus) with a normal capsular contour. The spleen is subtly mottled in appearance. A few small, ill-defined myelolipomas are observed in the region of the hilus. Splenic vasculature is normal.

Liver

The **liver** is subjectively prominent in size with normal curvilinear peripheral contours. The parenchyma is isoechoic relative to the spleen and subtly heterogenous in appearance. No distinct focal lesions are observed. Hepatic vasculature and 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 small to moderate amount of gravity dependent, echogenic debris is observed within the lumen. The cystic and common bile ducts are normal/not seen.

Gastrointestinal

The **stomach and intestine** are free of stasis and exhibit normal peristaltic activity. The gastric lumen is not distended. The gastric wall and pylorus are normal in thickness with a normal layering pattern. The pyloric outflow tract is patent. The small intestinal lumen is not dilated. The small intestinal wall thickness is normal with a normal layering pattern and appropriate mural detail. Discreet masses are not identified. The colonic wall is normal. There is no evidence of an obstructive pattern.

Pancreas

The base and right 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 **peritoneal cavity** is normal. There is no evidence of inflammation or effusion. The medial iliac **lymph nodes** are visualized, the largest measuring 1.68 cm in length. The nodes are normal in size and echogenicity. One to two prominent mesenteric lymph nodes are visualized, the largest measuring 2.97 cm in length.

ULTRASONOGRAPHIC FINDINGS

Primary Findings

- Suspected benign diffuse hepatopathy. Top differentials include regenerative nodular hyperplasia and vacuolar hepatopathy. Given the liver enzyme pattern, inflammatory disease is considered less likely. Infiltrative neoplasia is a possibility, but also considered less likely based on the sonographic appearance of the liver.
- The gall bladder changes are suggestive of a developing mucocele.
- Cystic calculi with bladder wall changes. Probable secondary cystitis (although emerging neoplasia cannot be completely excluded).

Secondary Findings

- The lymph node changes are most consistent with reactive lymphadenitis or lymphoid hyperplasia.
- Age-related pancreatic remodeling +/- fibrosis. Chronic mild pancreatitis is possible, particularly if the patient exhibits pain on cranial abdominal palpation.
- The splenic parenchymal changes are most consistent with a benign process such as lymphoid hyperplasia, extramedullary hematopoiesis, splenitis or antigenic stimulation with a low possibility of infiltrative neoplasia (i.e., lymphoma, mast cell neoplasia).
- The bilateral renal changes are consistent with chronic interstitial nephrosis/nephritis.
- The mineralized foci within the right adrenal gland may a benign incidental finding. However, mineralization of the adrenals has been associated with neoplasia in some instances, and therefore should be monitored.

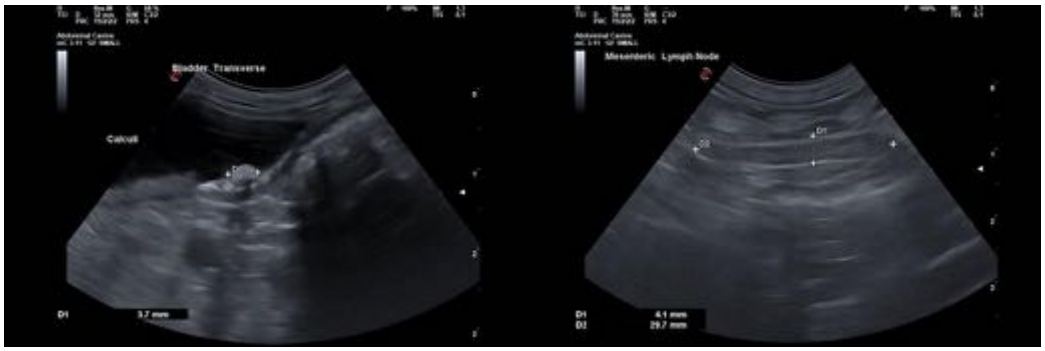
INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

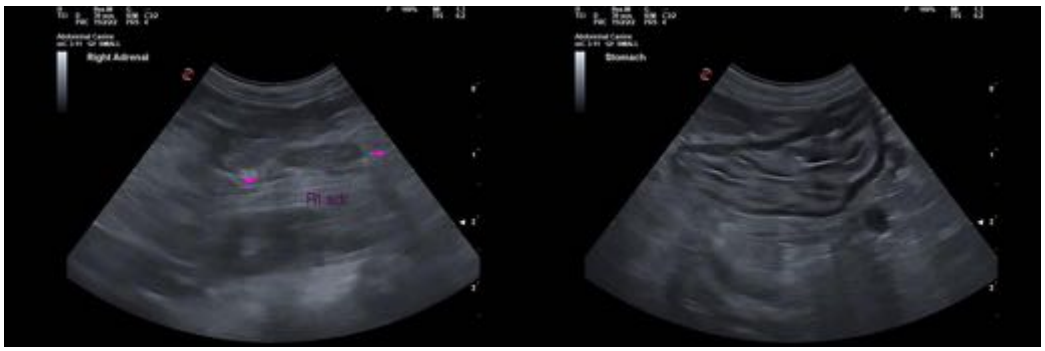
Given the gall bladder changes, Ursodeoxycholic acid (Ursodiol) at 10-15 mg/kg once a day is recommended. Serial sonographic monitoring (e.g., every 6-8 weeks) of the gall bladder is recommended to assess for progression to a fully-formed mucocele.

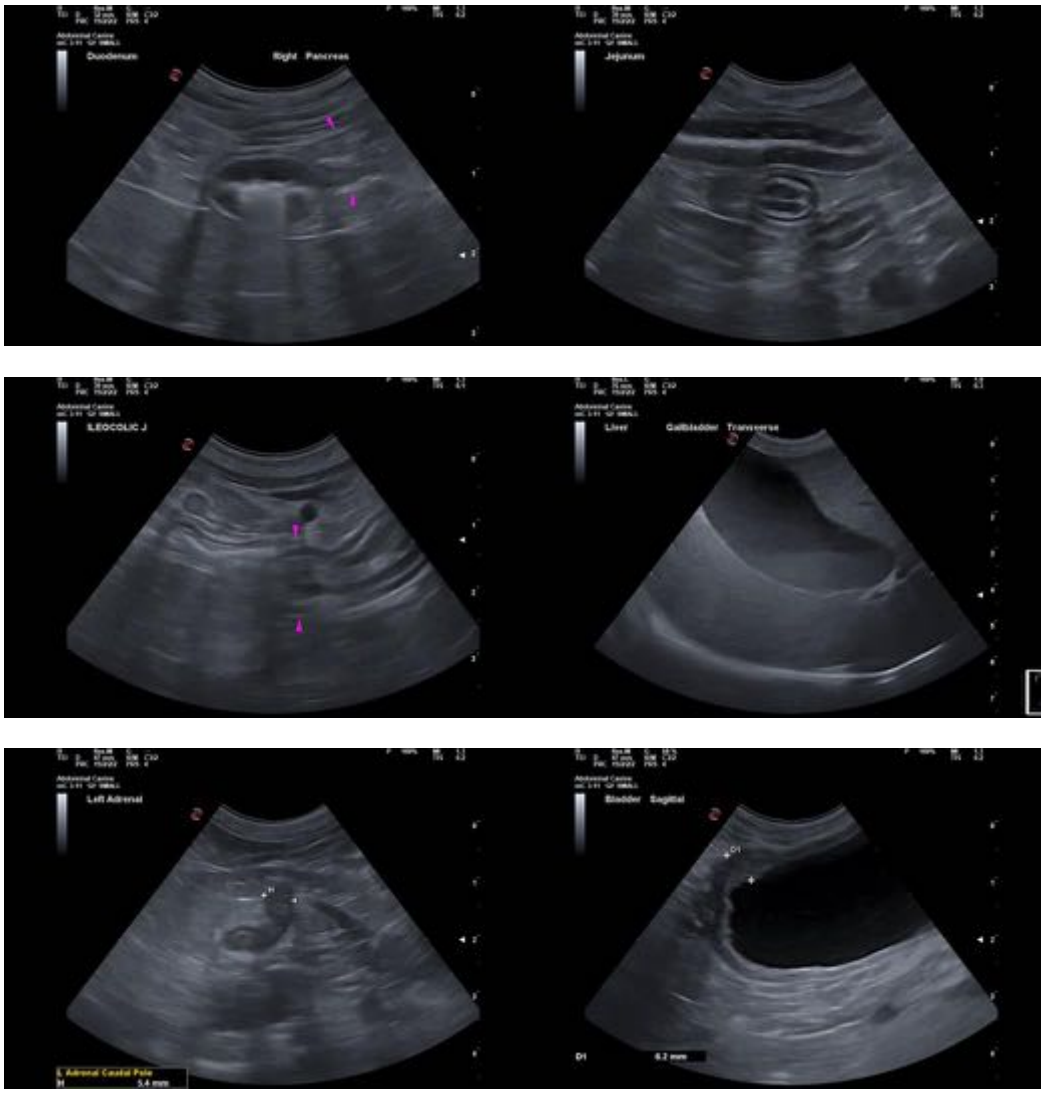
Serial monitoring (i.e, every 3-4 months) of the patient's liver values is recommended. If liver values continue to increase, a repeat abdominal ultrasound +/- hepatic tissue sampling may be warranted.

A cystotomy with stone removal, analysis and culture is recommended. Alternatively, medical dissolution of the stones can be considered with a prescription renal diet and broad-spectrum antibiotic therapy. If there is no improvement in stone size after 4 weeks of therapy, a cystotomy should be reconsidered. If the stone size is reduced, continue therapy until complete dissolution has been achieved.

Regarding the right adrenal mineralization, consider a repeat ultrasound in 1-3 months to assess for changes.







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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