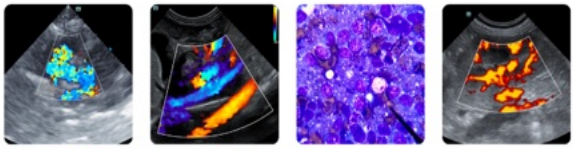

SonoPath www.animalsoundsnw.com info@animalsoundsnw.com 541.357.9423

PATIENT

Pan Uk

SPECIES

Mustelid

BREED

Ferret

SEX

Spayed female

AGE

5 years

WEIGHT

2.08 lbs

INTERPRETED BY

Alicia Angosto Guerrero, DMV, PgDip, MSc.

IMAGING PERFORMED BY

Sara Hansen

HOSPITAL NAME

Santa Clara AH

REFERRING VET

Dr. Giddens

INVOICE

77643

DATE

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PRESENTING CLINICAL SIGNS

History: Greatly enlarged middle to caudal abdomen off to the left (mass effect under spleen?) and enlarged (previously, but not today) external & internal lymph nodes found on U/s. Scabbed mass in right ear.
Current Medications
Prednisolone for insulinoma & Suprelorin 4.7 mg implant
Radiographic Findings
No new x-rays again previous x-rays sent T with previous ultrasound

ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN

Urinary System

The urinary bladder lumen is normally distended, and the urinary bladder wall appears thin and smooth. The urine is anechoic. The bladder neck and proximal urethra have a normal ultrasonographic appearance. No calculi are identified, and there is no ultrasonographic evidence of inflammatory or neoplastic mural disease.

The left kidney is normal in shape and size, measuring 2.59×1.33 cm, with a cortical thickness of 0.21 cm in the sagittal plane. The renal cortex is isoechoic relative to the liver parenchyma. A cortical cyst measuring approximately 4.19×4.75 mm is present. The corticomedullary ratio and corticomedullary definition are preserved. No evidence of pyelectasia, nephrolithiasis, or hydronephrosis is identified. Color Doppler demonstrates a normal vascular pattern.

The right kidney is normal in shape and size, measuring 2.58×1.28 cm, with a cortical thickness of 0.24 cm in the sagittal plane. The renal cortex is isoechoic relative to the liver parenchyma. A cortical cyst measuring approximately 3.31×3.33 mm is present. The corticomedullary ratio and corticomedullary definition are preserved. No evidence of pyelectasia, nephrolithiasis, or hydronephrosis is identified. Color Doppler demonstrates a normal vascular pattern.

Adrenal Glands

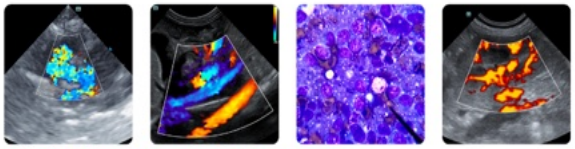
Dorsoventral diameters measured in the sagittal plane: The left adrenal gland measures 0.34 cm. The right adrenal gland measures 0.34 cm.

Spleen

Splenic thickness is 1.26 cm. The parenchyma demonstrates normal echogenicity and a fine homogeneous echotexture, although a subtle poorly defined nodular region measuring approximately 0.90×1.63 cm is suspected within the splenic parenchyma. The lesion is difficult to clearly differentiate from the surrounding splenic tissue. The splenic capsule is smooth and regular.

Liver

Within the left hepatic area, a large cystic lesion measuring approximately 3×4 cm is again identified. The lesion appears completely cystic without identifiable solid mural components and appears to



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extend predominantly exophytically from the hepatic margin rather than infiltrating deeply into adjacent hepatic parenchyma. The remaining hepatic parenchyma appears ultrasonographically normal, with sharp margins, regular contour, and homogeneous echotexture.

The gallbladder was not adequately evaluated during the current examination.

Gastrointestinal

The stomach is empty and folded, with preserved wall layering and mural thickness measuring approximately 1.84 mm. The duodenum measures 1.74 mm. The jejunum measures 0.84-1.35 mm with preserved wall layering. No ultrasonographic evidence of obstructive gastrointestinal disease, ileus, or foreign material is identified. The colon measures approximately 0.72 mm and contains formed fecal material within the descending segment.

Pancreas

The pancreatic parenchyma is isoechoic relative to the adjacent omental fat. No ultrasonographic evidence of pancreatitis or focal pancreatic mass lesion is identified.

Free Abdomen

Mild abdominal effusion is present.

The cranial mesenteric lymph nodes are enlarged, rounded, hypoechoic, and heterogeneous, with some cystic change and surrounding hyperechogenicity of the adjacent mesenteric fat. The largest measures approximately 7.27×8.41 mm.

Splenic-associated lymph nodes are enlarged, measuring approximately 0.8×1.19 cm and 0.91×0.3 cm, mildly hypoechoic and relatively homogeneous. Caudal mesenteric lymph nodes are also enlarged and hypoechoic.

The iliac trifurcation appears normal.

PRIMARY FINDINGS

- Progressive generalized abdominal lymphadenopathy involving cranial mesenteric, splenic-associated, and caudal mesenteric lymph nodes
- Mild abdominal effusion
- Persistent splenomegaly with developing subtle splenic nodular change
- Large progressively enlarging cystic hepatic lesion arising from the left lateral hepatic lobe

SECONDARY FINDINGS

- Mild diffuse gastrointestinal wall thickening
- Bilateral small renal cortical cysts (incidental)

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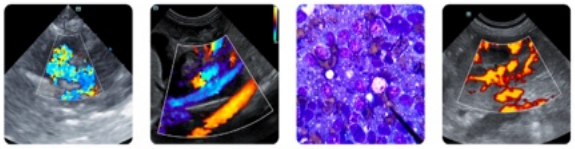

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Educational Teleconsultation Services™

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INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

Persistent generalized abdominal lymphadenopathy is present, involving the cranial mesenteric, splenic-associated, and caudal mesenteric lymph nodes. Several nodes are rounded, hypoechoic, and heterogeneous, with cystic change and reactive hyperechogenicity of the surrounding mesenteric fat. Mild abdominal effusion is also now present. In combination with the previously documented progressive splenomegaly and chronic gastrointestinal abnormalities, the overall imaging pattern is now highly concerning for disseminated lymphoproliferative neoplasia/lymphoma rather than isolated inflammatory bowel disease or reactive lymphadenopathy alone.

The spleen remains enlarged and now contains a subtle poorly defined nodular region, further supporting progressive infiltrative splenic involvement, although extramedullary hematopoiesis may still contribute to the splenic appearance in ferrets.

Additionally, the multicystic lesion associated with the left hepatic area has demonstrated marked interval enlargement. This lesion was not clearly identified on the first examination, was later described as an approximately 1 cm partially obscured multicystic lesion, and now measures approximately 3 × 4 cm. The lesion remains completely cystic without identifiable solid mural components and appears to expand externally from the hepatic margin rather than infiltrating deeply into the adjacent hepatic parenchyma.

Initially, this lesion was considered most compatible with a benign cystic process such as a biliary/hepatic cystadenoma, which is relatively common in ferrets. However, the rapid interval enlargement substantially increases concern for biologically active behavior and makes a simple stable incidental cyst less likely. Although the absence of solid tissue remains somewhat reassuring, cystic neoplasia, including cystadenocarcinoma or another cystic hepatic neoplastic process, can no longer be excluded and must now be considered a significant differential diagnosis.

Therefore, concurrent disease processes may now be present. The abdominal enlargement is likely multifactorial, related both to progressive lymphadenopathy/splenomegaly and to the presence of abdominal effusion and the enlarging cystic hepatic lesion.

Recommendations

- Given the marked interval progression and the known limitations of cytology, definitive tissue sampling should be strongly considered if the owners wish to pursue definitive diagnosis and treatment planning.
- Biopsy sampling of the abnormal abdominal lymph nodes, spleen, and abnormal gastrointestinal tract would likely provide the highest diagnostic yield. In addition, because the cystic hepatic lesion appears largely exophytic and involves a relatively limited portion of the hepatic parenchyma, surgical excision or partial resection of this lesion may also be technically feasible if considered appropriate by the attending surgeon. Histopathology would be required to definitively distinguish a benign cystic lesion (cystadenoma) from cystic hepatic neoplasia (cystadenocarcinoma).
- At this stage, primary Helicobacter-associated gastritis appears considerably less likely, as the stomach remains within normal ultrasonographic limits and the dominant progressive abnormalities involve the small intestine, abdominal lymph nodes, spleen, and abdominal cavity. Therefore, diagnostic and therapeutic efforts would be more appropriately focused on the potential lymphoproliferative/infiltrative disease process and the new hepatic lesion rather than empirical anti-Helicobacter therapy.

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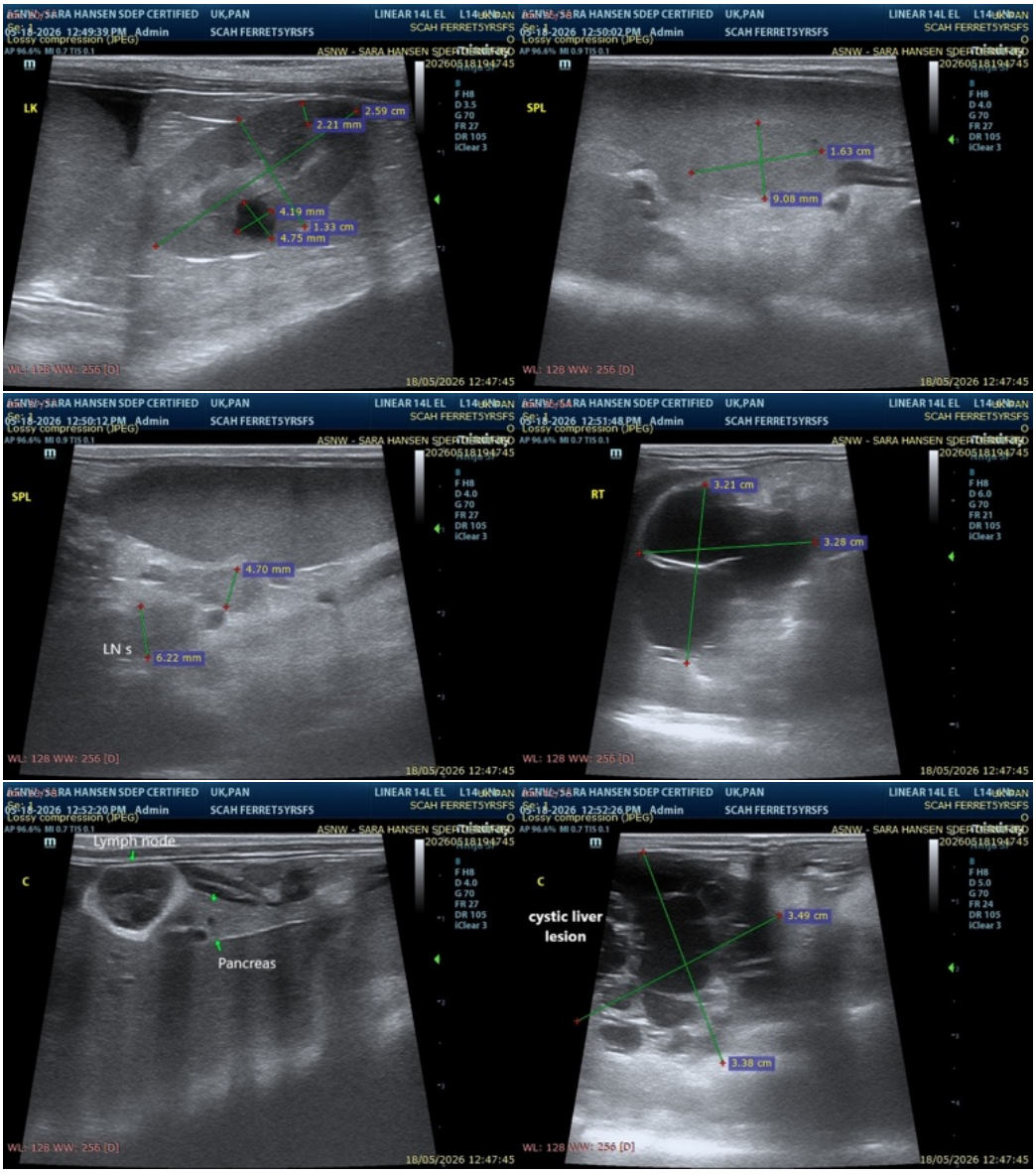
Final diagnostic and therapeutic decisions should be made by the attending veterinarian, who can best integrate these findings with the patient's clinical status.



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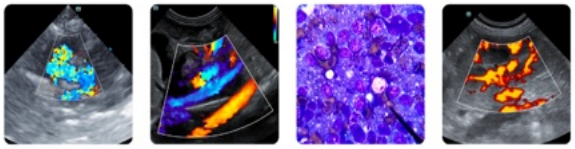

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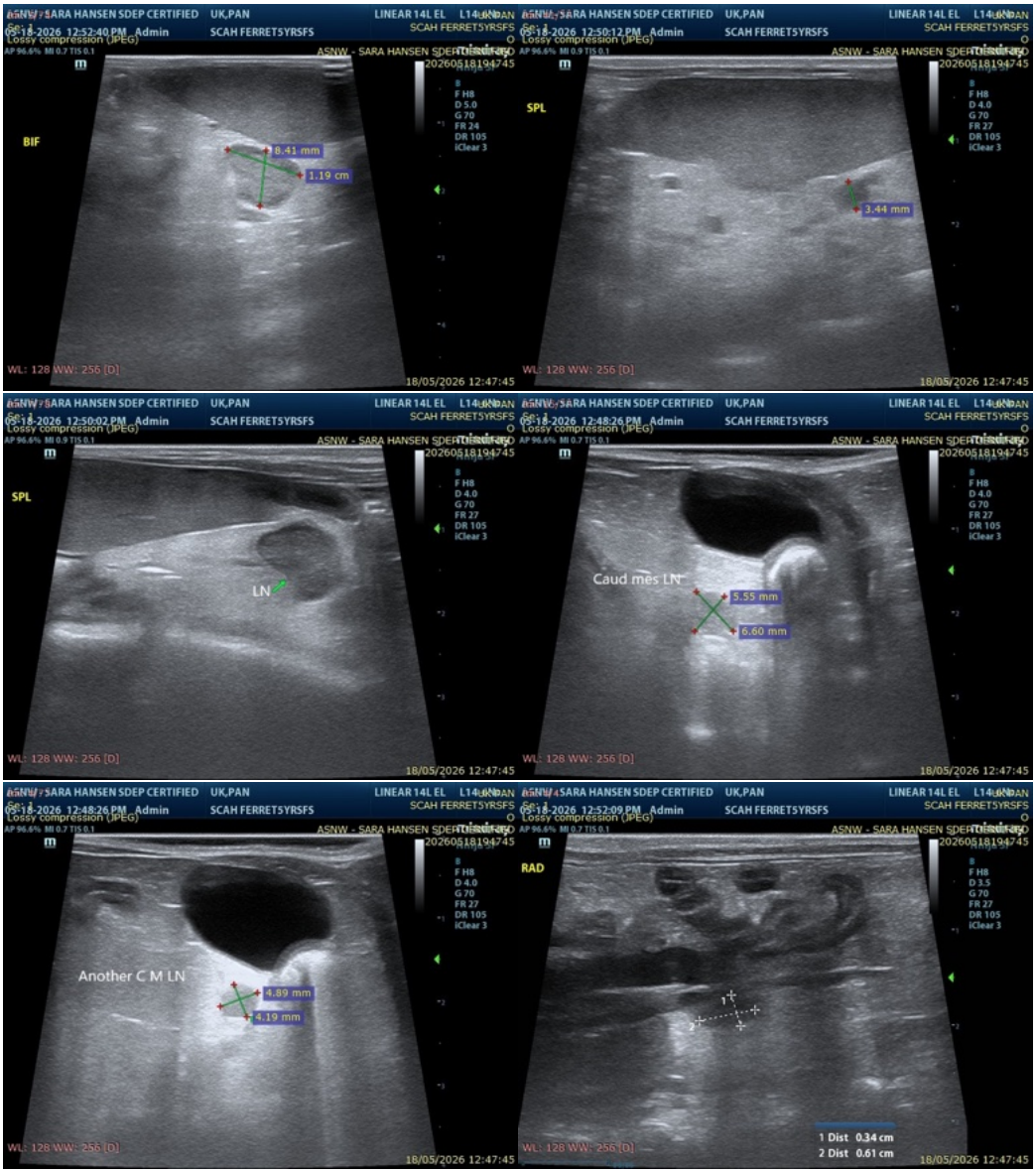

The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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.

Alicia Angosto Guerrero, DMV, PgDip, MSc.

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