



PATIENT

Sir Miller

SPECIES

Mustelid

BREED

Ferret

SEX

Neutered male

AGE

7 years

WEIGHT

1.5 lbs

INTERPRETED BY

Dr. Alicia Angosto
Guerrero

IMAGING PERFORMED BY

Sara Hansen

HOSPITAL NAME

Santa Clara AH

REFERRING VET

Dr. Giddens

INVOICE

71506

DATE

2/11/26

PRESENTING CLINICAL SIGNS

- Vomiting and diarrhea started Saturday morning, Decreased appetite since Saturday, not eating normally. Weight loss noted. Sporadic coughing for approximately one month, typically heard when active
- Diet: Marshall's ferret food, normally free-choice feeder. No recent dietary changes
- Companion ferret passed away a couple months ago
- New ferret acquired on the 3rd, housed in same room but separate cages
- Syringe feeding attempted yesterday and this morning with some success (approximately 3ml syringe). Slight improvement in energy this morning after eating. Previous records from EVH indicate low glucose, signs of anemia, and possible abdominal mass noted by previous veterinarian
- PE= small mass palpated mid-abdomen - firm and movable.
- Blood work low BG, anemia

ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN

Urinary System

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

The left kidney measures 2.41×1.25 cm in the sagittal plane. Cortical thickness measures 0.21 cm. The cortex is isoechoic relative to the liver parenchyma. The corticomedullary ratio is normal and corticomedullary definition is preserved. There is no evidence of pyelectasia, nephrolithiasis, or hydronephrosis.

The right kidney measures 2.36×1.22 cm in the sagittal plane. Cortical thickness measures 0.22 cm. The cortex is isoechoic relative to the liver parenchyma. A cystic lesion measuring 5.37×6.52 mm is identified at the cranial pole, and an additional cystic lesion measuring 1.57×2.11 mm is identified at the caudal pole. The corticomedullary ratio is normal and corticomedullary definition is preserved. There is no evidence of pyelectasia, nephrolithiasis, or hydronephrosis.

Adrenal Glands

Both adrenal glands demonstrate normal shape and echogenicity with preserved corticomedullary differentiation.

Dorsoventral diameters measured in the sagittal plane are as follows:

- Left adrenal gland: 0.33 cm (cranial pole) and 0.31 cm (caudal pole).
- Right adrenal gland: 0.31 cm (cranial pole) and 0.33 cm (caudal pole).

Reported mean reference (2.5 ± 0.6 mm).



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Spleen

Splenic thickness measures 0.82 cm. The parenchyma demonstrates normal echogenicity and fine homogeneous echotexture without focal abnormalities. The splenic capsule is smooth and regular.

Published average splenic thickness in healthy ferrets (~11.8 ± 0.34 mm).

Liver

The liver is subjectively normal in size, with sharp edges and a regular contour. The parenchyma is uniform and isoechoic relative to the falciform fat, with normal echotexture. No hepatic lymphadenopathy is observed.

The gallbladder was not visualized.

Gastrointestinal

The stomach contains abundant partially digested ingesta. Gastric mural thickness measures 0.71 mm with preserved wall layering. The pylorus measures 1.61 mm.

The duodenum measures 1.38–1.47 mm.

The jejunum–ileum measures 0.88–1.02 mm.

The colon measures 0.53 mm and contains soft fecal material and gas within the descending segment.

No obstructive pattern, ileus, mural mass, or intraluminal foreign material is identified.

Pancreas

The visualized portions of the pancreas do not demonstrate ultrasonographic evidence of pancreatitis. No discrete pancreatic nodule is identified in the evaluated regions.

Peritoneal Cavity and Lymph Nodes

No abdominal effusion or ultrasonographic evidence of peritonitis is observed.

Splenic lymph nodes measure 4.33×5.39 mm and 5.80×7.01 mm.

The pancreaticoduodenal lymph node measures 5.44×6.59 mm and is heterogeneous with cystic-appearing areas and mild perinodal fat reactivity.

The hepatic lymph node measures 9.91×4.61 mm and is mildly heterogeneous.

The jejunal (cranial mesenteric) lymph node measures 13.7×6.7 mm. Published references (length 12.6 ± 2.6 mm; thickness 7.6 ± 2.0 mm).

ULTRASONOGRAPHIC FINDINGS



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PRIMARY FINDINGS

- Duodenum thickness 1.38–1.47 mm.
- Conspicuous visualization and mild heterogeneity of multiple gastrointestinal-associated abdominal lymph nodes (jejunal/cranial mesenteric, pancreaticoduodenal, hepatic, and splenic), without marked enlargement relative to published reference ranges.

SECONDARY FINDINGS

- Right renal cortical cysts.

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

The spleen is not enlarged (8.2 mm; below reported average for healthy ferrets), making splenomegaly an unlikely explanation for the palpable mass.

The jejunal (cranial mesenteric) lymph node falls within reported normal limits. Splenic, pancreaticoduodenal and hepatic lymph nodes appear enlarged. The pancreaticoduodenal and hepatic lymph nodes are mildly heterogeneous with cystic-appearing changes. In ferrets, cystic changes within abdominal lymph nodes are frequently described as nonspecific findings and may reflect lymphatic sinus ectasia, chronic antigenic stimulation, or lymphoid remodeling rather than primary lymphoid neoplasia, particularly when nodal enlargement is mild and architecture is maintained.

The gastrointestinal tract measures within reported normal ferret reference ranges except the duodenum measures, which is mildly increased relative to reported reference ranges for healthy ferrets. Wall layering remains preserved and no focal mass or obstructive pattern is identified. This finding may represent mild inflammatory enteropathy and should be interpreted in light of the patient's gastrointestinal signs.

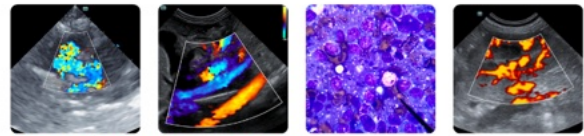
The renal cortical cysts identified in the right kidney are incidental.

Both adrenal glands measure 3.1–3.3 mm in dorsoventral diameter, placing them at the upper end of published reference ranges for ferrets. In the absence of clinical signs consistent with adrenal-associated endocrinopathy and without focal enlargement or architectural distortion, these findings are considered borderline and of uncertain clinical significance at this time. Periodic monitoring is recommended.

Overall, ultrasonographic findings support possible enteritis or inflammatory enteropathy. Abdominal lymph nodes demonstrate mild heterogeneity and cystic change, a common nonspecific finding in ferrets and not inherently indicative of lymphoma in the absence of significant enlargement or architectural distortion. Given documented hypoglycemia, insulinoma remains the primary clinical concern despite the absence of a discrete pancreatic nodule on ultrasound.

Recommendations

- Reassess blood glucose promptly. Given documented hypoglycemia, insulinoma remains the primary clinical concern despite the absence of a discrete pancreatic mass. Initiation of medical management (prednisolone ± diazoxide) should be considered if hypoglycemia persists.
- Further evaluation of anemia with CBC and reticulocyte count is recommended. Additional diagnostics may be considered if anemia progresses.



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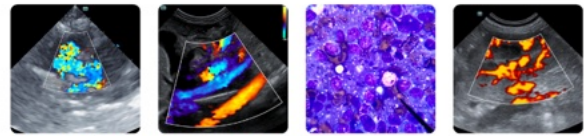
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- Empirical gastrointestinal therapy may be considered for suspected reactive or inflammatory enteropathy.
- Periodic monitoring of the adrenal glands is advised. Deslorelin implantation is recommended if gland enlargement progresses or clinical signs develop; elective implantation may be considered once the patient is clinically stabilized.
- Follow-up abdominal ultrasound is recommended once the patient is clinically stabilized to monitor gastrointestinal thickness, lymph node appearance, and adrenal size over time. While ultrasound monitoring of the pancreas may be performed, insulinomas in ferrets are frequently not sonographically detectable.





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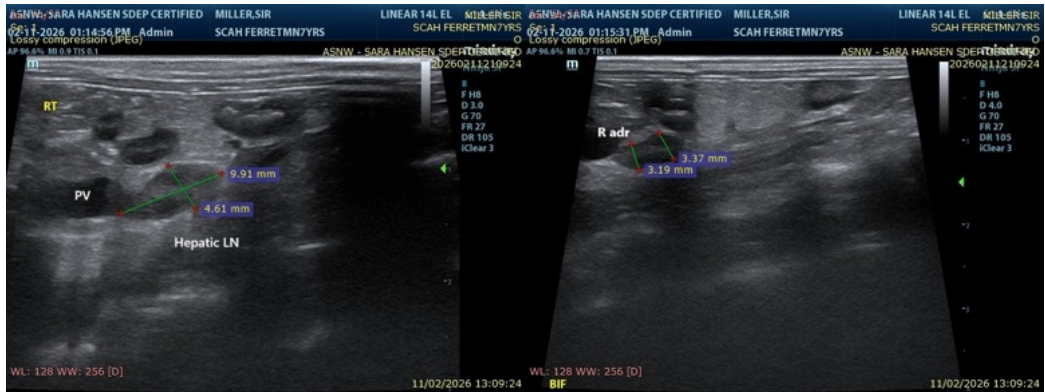
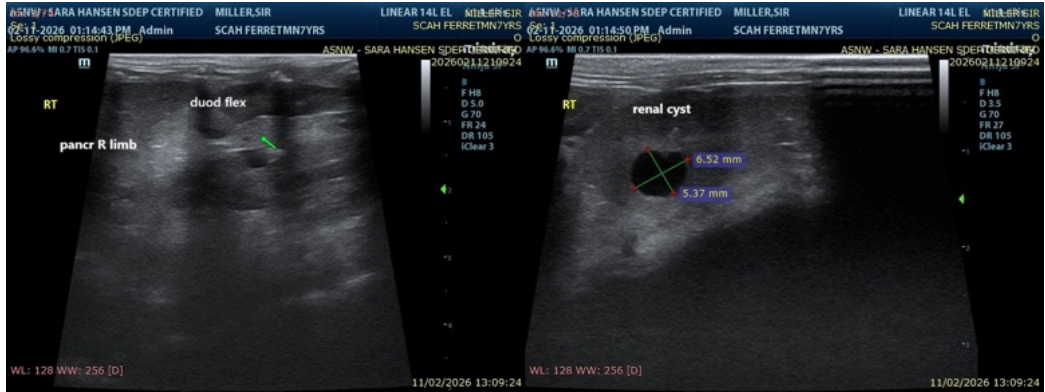
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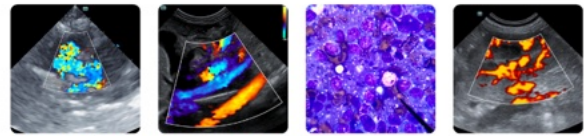
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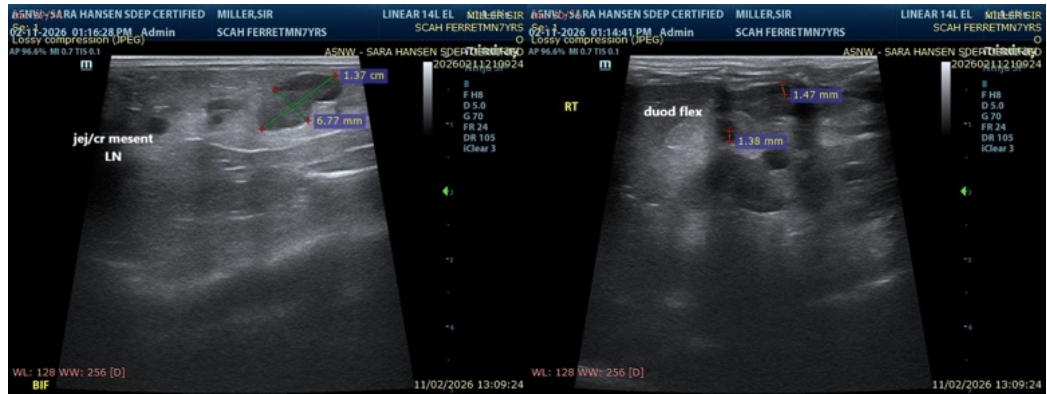
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The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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.

Alicia Angosto Guerrero, DMV, PgDip, MSc.

MV Esp Ultrasound in Domestic and Wild Animals

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