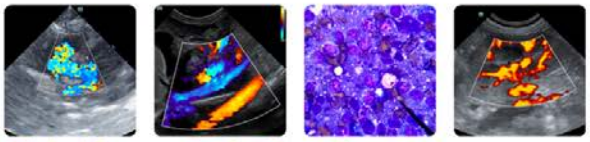


PATIENT

Mooney Ellis

SPECIES

Mustelid (ferret)

BREED

Standard

SEX

Neutered Male

AGE

7 Years

WEIGHT

0.88 kg

INTERPRETED BY

Alicia Angosto Guerrero, DMV, PgDip, MSc.

IMAGING PERFORMED BY

Wayland, DVM

HOSPITAL NAME

Wilvet South

REFERRING VET

Wayland, DVM

INVOICE

72807

DATE

2/8/26

PRESENTING CLINICAL SIGNS

Insulinoma diagnosed 8 months ago, has deslorelin implant. Lateral today after medication administration, did not improve after karo on gums, dextrose rectal and oral, and SQF's. Takes prednisolone 0.3mL BID concentration unknown. Rapidly changing BG after intake. hypoglycemia

Abnormal PE/Chem/CBC/UA Results: initial BG- 88, 1 hr later- 111. BG on CBC- 25 CBC: Generally unremarkable. Chem 17: Glucose: 25 (low) Total Protein: 7.6 (high) Globulins: 4.6 (high)

ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN

Urinary System

The urinary bladder lumen is markedly distended. The urinary bladder wall is thin and smooth. Urine is anechoic. The bladder neck and proximal urethra have a normal ultrasonographic appearance. No uroliths are identified. There is no ultrasonographic evidence of inflammatory or neoplastic changes.

The left kidney is normal in shape and size, measuring 2.71×0.95 cm in the sagittal plane. Cortical thickness measures 0.19 cm. The renal cortex is isoechoic relative to the liver parenchyma. Corticomedullary ratio and corticomedullary definition are preserved. There is no evidence of pyelectasia, nephrolithiasis, or hydronephrosis. Color Doppler evaluation demonstrates a normal perfusion pattern.

The right kidney is normal in shape and size, measuring 2.54×1.19 cm in the sagittal plane. Cortical thickness measures 0.24 cm. The renal cortex is isoechoic relative to the liver parenchyma. Corticomedullary ratio and corticomedullary definition are preserved. There is no evidence of pyelectasia, nephrolithiasis, or hydronephrosis. Color Doppler evaluation demonstrates a normal perfusion pattern.

Adrenal Glands

Dorsoventral diameters measured in the sagittal plane: the left adrenal gland measures 0.20 cm at the cranial pole and 0.21 cm at the caudal pole. Corticomedullary definition is preserved The right adrenal gland could not be visualized due to its more cranial location.

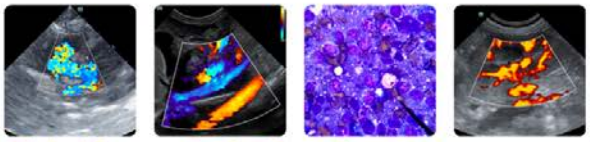
Spleen

Splenic thickness measures 1.65 cm, with rounded margins. The splenic parenchyma demonstrates normal echogenicity and a fine, homogeneous echotexture without focal parenchymal abnormalities. The splenic capsule is smooth and regular. Splenic vasculature appears normal.

Liver

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

The gallbladder lumen is normally distended. The gallbladder wall is thin, and the contents are anechoic. No dilation of the cystic duct or common bile duct is identified.



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Gastrointestinal

The stomach is empty and folded. Gastric wall thickness measures 0.90 mm, with preserved wall layering. The pylorus measures 1.39 mm.

The duodenum measures 1.26 mm in wall thickness. The jejunum measures 0.60 mm. No ultrasonographic evidence of mural inflammation, ileus, or foreign material is identified.

The colon measures 0.83 mm in wall thickness and appears empty, with a gas pattern.

Pancreas

The pancreas could not be clearly visualized on the provided images and video clips. For pancreatic evaluation in ferrets, the use of a high-frequency linear transducer and exhaustive assessment of the right limb, body, and left limb is recommended, as insulinomas are typically only a few millimeters in size and may be difficult to identify ultrasonographically.

Free Abdomen

No abdominal effusion or signs of peritonitis are observed.

Mesenteric lymph nodes appear normal.
Splenic lymph nodes are mildly enlarged, measuring up to 4.73×5.59 mm, and are hypoechoic.
Hepatic lymph nodes measure up to 3.72×3.59 mm and are visible but at the upper limit of normal.

Additionally, a well-defined, markedly hypoechoic nodular structure measuring 4.24×4.85 mm is identified in the right cranial abdomen, immediately ventral to the duodenum.

The iliac trifurcation is normal.

PRIMARY FINDINGS

- Small, well-defined, markedly hypoechoic nodular structure (4.24×4.85 mm) ventral to the duodenum, adjacent to pancreatic tissue.
- Mild splenomegaly with rounded margins.
- Mild enlargement and hypoechogenicity of splenic lymph nodes. Hepatic lymph nodes at the upper limit of normal size.

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

A small, well-defined, markedly hypoechoic nodular structure (4.24×4.85 mm) is identified immediately ventral to the duodenum, in close association with mesenteric fat and adjacent pancreatic tissue. Based on its location and echogenicity, this structure most plausibly represents a focal pancreatic lesion, including a pancreatic neuroendocrine tumor. The absence of distal acoustic enhancement makes a cystic lesion unlikely. However, due to limited resolution and the absence of high-frequency linear transducer imaging, definitive differentiation between a reactive or infiltrated pancreaticoduodenal lymph node and a primary pancreatic lesion, is not possible based on this examination alone.

In ferrets, splenomegaly is a common ultrasonographic finding and is frequently reactive rather than indicative of primary splenic disease. The most common underlying mechanisms include lymphoid hyperplasia associated with chronic systemic stimulation, endocrine disease, or sustained inflammatory

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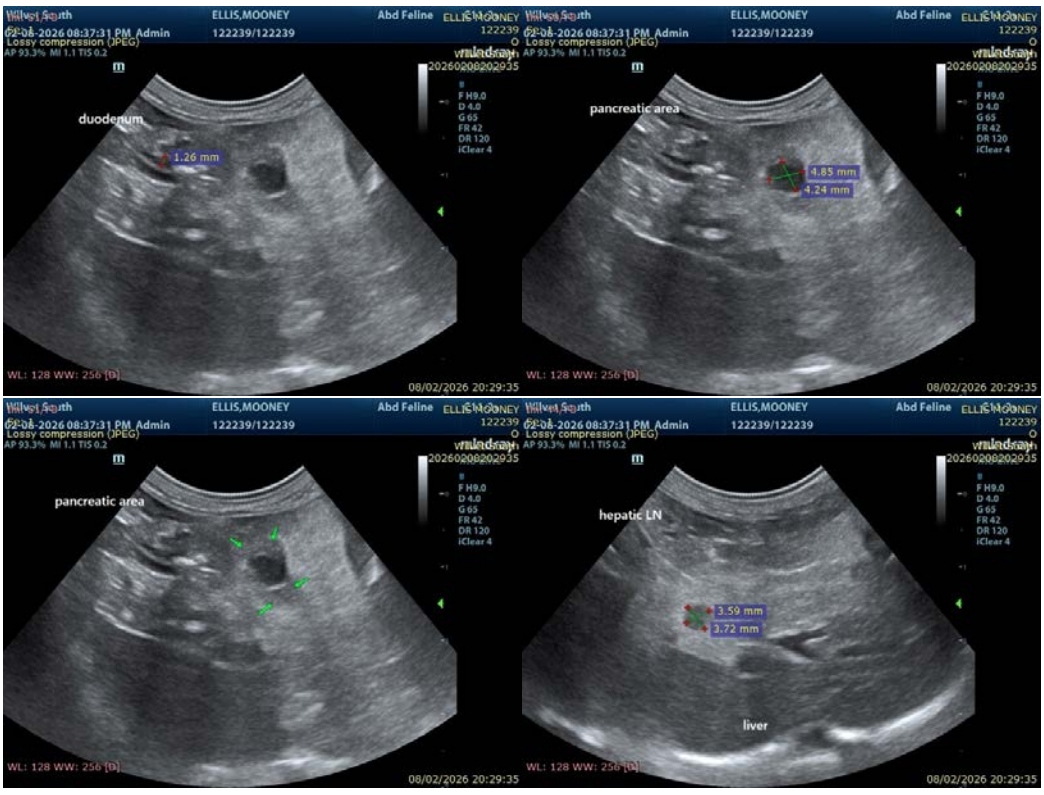
states, as well as idiopathic hypersplenism. Although extramedullary hematopoiesis may contribute in some cases, it should not be assumed as the sole or primary cause in the absence of supportive clinical or hematologic findings. In this context, the mildly enlarged, hypoechoic splenic lymph nodes are most consistent with reactive lymphadenopathy secondary to splenic hyperactivity and chronic systemic disease.

Overall, the ultrasonographic examination does not identify an alternative primary abdominal disease process that would account for the patient's severe and refractory hypoglycemia. The findings are most consistent with progression or poor medical control of a previously diagnosed insulinoma. The remaining abdominal organs, within the limits of the examination, do not demonstrate clinically significant abnormalities that would explain the current presentation.

Recommendations

- Primary problem: poorly controlled insulinoma: Reassess and confirm the prednisolone dose (mg/kg) and consider addition or escalation of diazoxide therapy. Medical management should be considered palliative given the severity of hypoglycemic episodes.
- Surgical consultation: Exploratory laparotomy with pancreatic nodulectomy/debulking is a commonly pursued option and may improve glycemic control, although it is not curative due to the typically multifocal nature of insulinoma.
- Advanced imaging (optional): Contrast-enhanced CT may be considered if readily available and if it would influence decision-making, but is not routinely required prior to surgery in ferrets with insulinoma.



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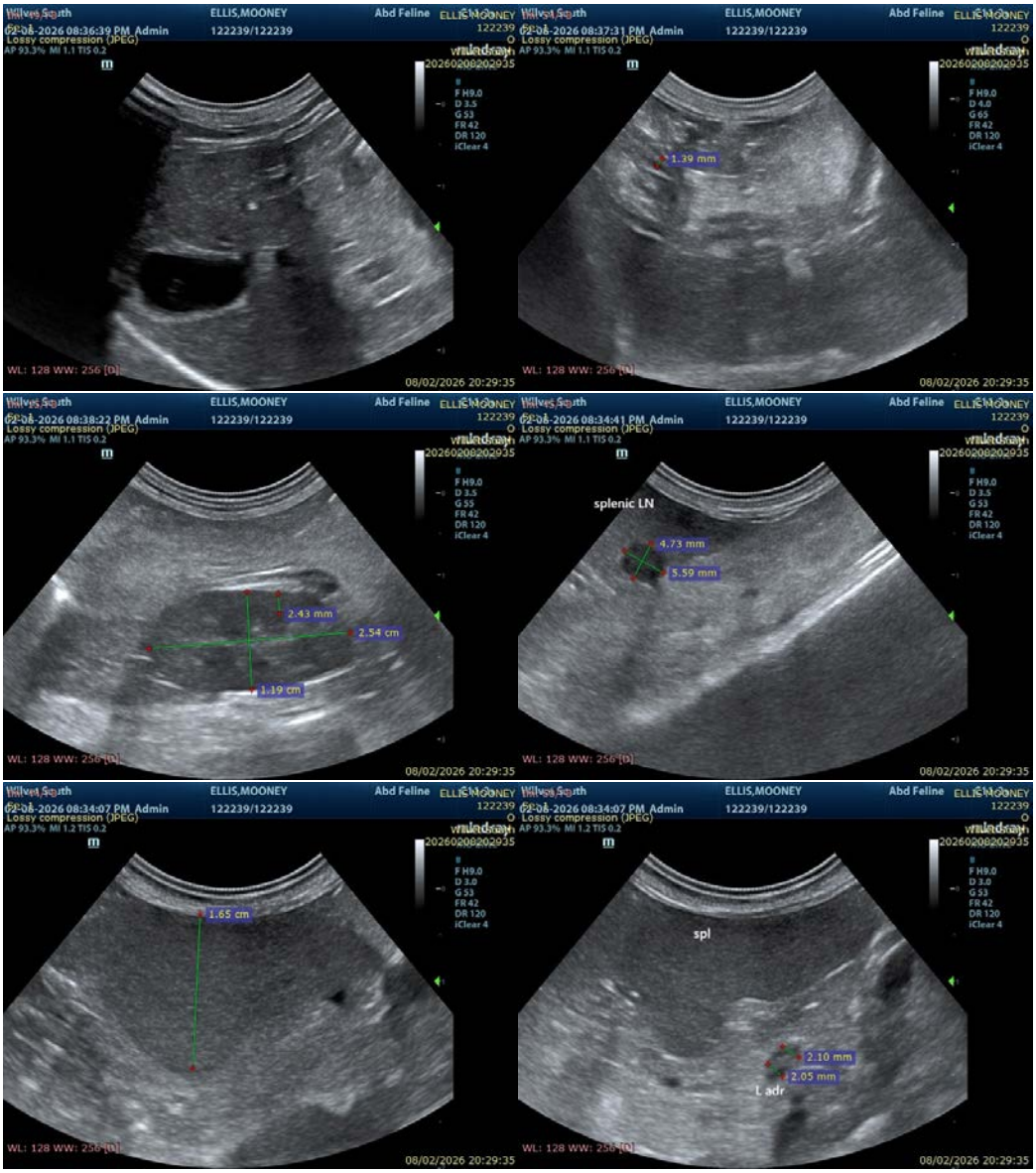

The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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.

info@SonoPath.com