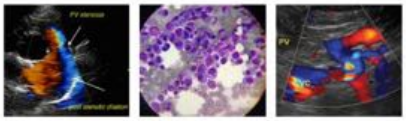


PATIENT

Gidget Hodge

SPECIES

Canine

BREED

Mini Schnauzer

SEX

Female Spayed

AGE

13 years

WEIGHT

16.2 lbs

INTERPRETED BY

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

IMAGING PERFORMED BY

Amy Mayhew LVT

HOSPITAL NAME

SVS Imaging Michigan

REFERRING VET

Dr. Kelli Collard

INVOICE

12289

DATE

2.27.23

PRESENTING CLINICAL SIGNS

History: ADR, heart murmur 3/6. History of diabetes but had episode of hypoglycemia and has not been on insulin for a week with BGs in the low 200s.
Abnormal PE/Chem/CBC/UA Results: USG 1.035. No ketones. Negative glucose.

ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN

Urinary System

The urinary bladder wall is normal in thickness and the mucosal surface is smooth. The bladder lumen is moderately distended with anechoic urine. No masses, inflammatory changes or calculi are observed. Ureteral papillae and visualized portion of the proximal urethra, visible to a depth of 1-2 cm, are normal.

The left kidney is normal in size (6.34 cm in length) with a normal shape, architecture and smooth peripheral margins. The cortex is isoechoic relative to the spleen. There is a normal 1:3 cortex to medulla ratio with minimal to mild loss of corticomedullary distinction. Several nonobstructive mineralized foci are observed. There is no evidence of pyelectasia, infarcts or hydroureter.

The right kidney is normal in size (5.97 cm in length) with a normal shape, architecture and smooth peripheral margins. The cortex is isoechoic relative to the spleen. There is a normal 1:3 cortex to medulla ratio with minimal to mild loss of corticomedullary distinction. Several nonobstructive mineralized foci are observed. There is no evidence of pyelectasia, infarcts or hydroureter.

Adrenal Glands

The left adrenal gland is normal in size (0.79 cm at cranial pole) (0.57 cm at caudal pole) with a normal shape and smooth peripheral contours. Glandular echogenicity and detail are normal. Pinpoint hyperechoic-to-mineralized foci are observed throughout the gland. The phrenicoabdominal vein and surrounding vasculature are normal.

The right adrenal gland is enlarged (1.08 cm at cranial pole) (1.00 cm at caudal pole) with a slightly irregular shape. A 1.08 x 1.00 hyperechoic nodule is observed at the caudal pole. Echogenicity and detail are normal at the cranial pole. Hyperechoic mineralized foci are also seen throughout the gland. The phrenicoabdominal vein and surrounding vasculature are normal.

Spleen

The spleen is subjectively normal in size (1.12 cm in width at the level of the hilus) with normal curvilinear peripheral contours. The parenchyma is of appropriate echogenicity and echotexture. Numerous small, linear, mineralized areas are observed throughout the organ. A few myelolipomas are seen. Splenic vasculature is normal with no evidence of thrombosis.

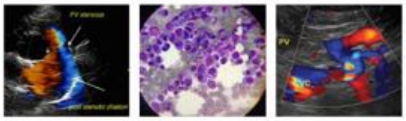
Liver

The liver is subjectively prominent in size with slightly swollen peripheral contours. The parenchyma is isoechoic relative to the spleen and diffusely heterogenous in appearance. A 2.01 cm ill-defined multi-septated cystic area is observed on the left side. Hepatic vasculature and intrahepatic biliary tracts are of normal volume with no evidence of congestion.

The gall bladder lumen is moderately distended. The wall is thin and smooth. A small to moderate amount of aggregated echogenic-to-mineralized partially dependent debris/sludge 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 mildly to moderately distended with ingesta. 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



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mural detail. Discreet masses are not identified. The colonic wall is normal. There is no evidence of an obstructive pattern.

Pancreas

The right limb is visible/prominent with slightly irregular peripheral contours. The parenchyma is largely isoechoic relative to surrounding omental fat. A 0.80 cm isoechoic to heterogenous nodule is observed in this region. The lesion causes capsular expansion. The pancreatic duct not overtly dilated.

Free Abdomen

A small amount of free fluid is present. The medial iliac lymph nodes are visible/prominent (left: 1.73 cm in length) (right: 1.19 cm in length).

ULTRASONOGRAPHIC FINDINGS

Primary Findings

The pancreatic nodule likely represents a benign process (i.e., benign nodular hyperplasia). However, an emerging tumor (i.e., adenocarcinoma) cannot be excluded. It's hard to make a case for an insulinoma in a diabetic patient, especially with blood glucoses in the 200s. In theory, there should be no beta cells left to make insulin and if there were, the insulin level would be excessive and not result in hyperglycemia, which is present in this patient. Therefore, an insulinoma is a rare possibility.

-
- Trace ascites

Secondary Findings

- Bilateral chronic renal changes with nonobstructive nephrolithiasis
- Bilateral adrenomegaly. The right adrenal nodule could be consistent with benign nodular hyperplasia or an emerging tumor (i.e., adenoma, adenocarcinoma, pheochromocytoma).
- Splenic dystrophic mineralization. This is a benign incidental finding typically seen with endocrinopathies.
- The hepatic parenchymal changes are nonspecific and may be secondary to vacuolar hepatopathy (i.e., idiopathic/endocrine), regenerative nodular hyperplasia, inflammatory disease, hepatotoxicosis (i.e., copper), or other hepatopathy. Correlation with the patient's liver values is recommended. The left cystic hepatic lesion could be consistent with a benign process (i.e., biliary cystadenoma). However, a biliary cystadenocarcinoma or emerging vascular tumor cannot be completely excluded.
- The prominent abdominal lymph nodes are most consistent with reactive lymphadenitis or lymphoid hyperplasia. Neoplastic infiltration is considered less likely.

*An obvious cause for the patient's episode of hypoglycemia is not definitively identified in this study. Considerations include insulin overdose, concurrent liver disease, other.

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

- Full baseline lab work, including a CBC, chemistry panel, urinalysis and T4 is recommended.
- Also consider pre-and postprandial serum bile acids to assess hepatic function.

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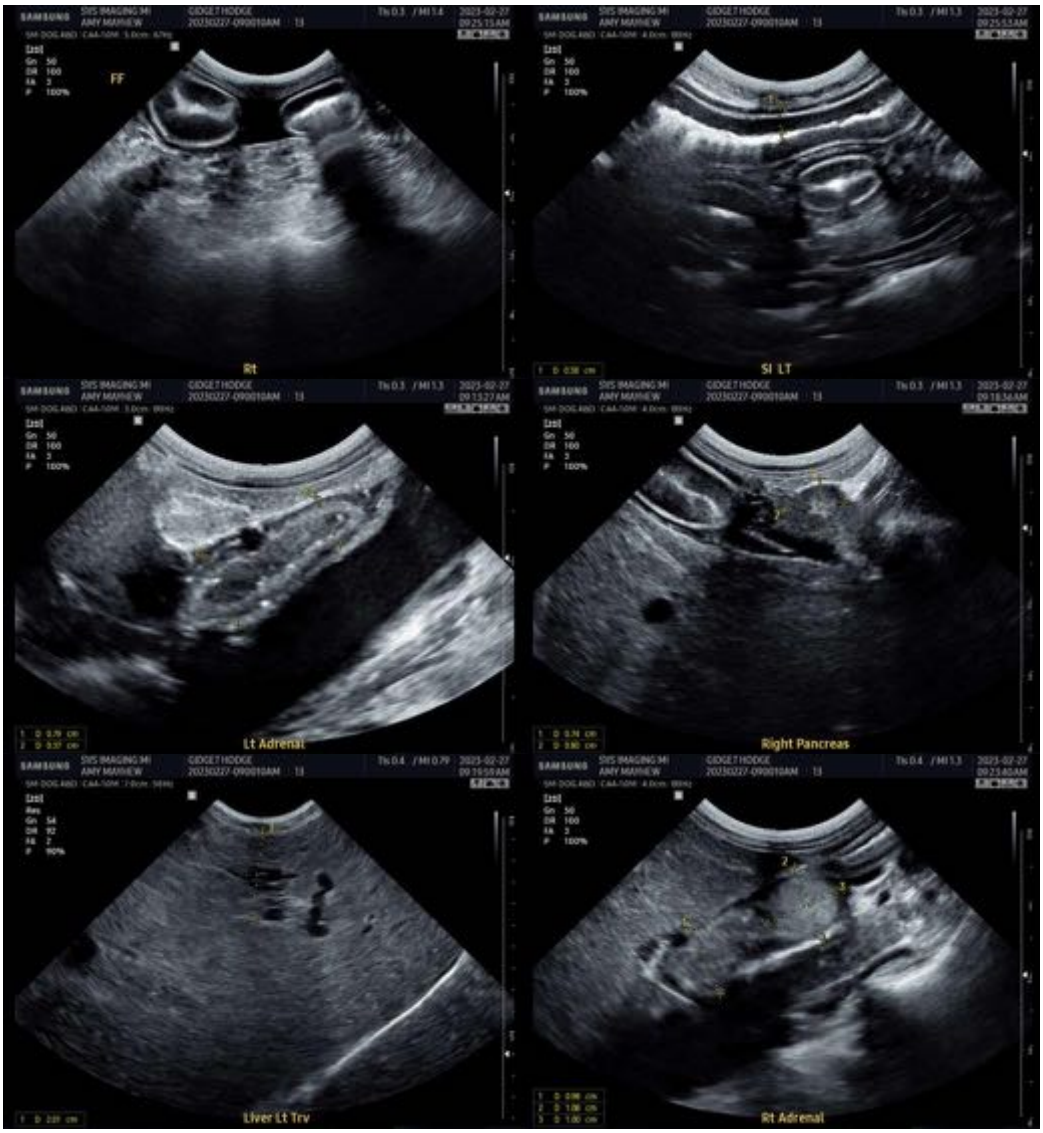
- Serial sonographic monitoring (i.e., every 2-3 months) of the pancreatic nodule is recommended to assess for growth.
- Thoracic radiographs should also be considered to assess for occult neoplasia in the chest, which could potentially cause paraneoplastic hypoglycemia.
- A lower dose of insulin may need to be initiated once the patient's blood glucoses begin to increase.
- Consider testing for hyperadrenocorticism with a low-dose dexamethasone suppression test or ACTH stimulation test if clinical signs (i.e., PU/PD) develop in the future.
- An insulin:glucose ratio can be considered (to assess for insulinoma) if the patient's blood glucose drops below 60 mg/dl while off of insulin.



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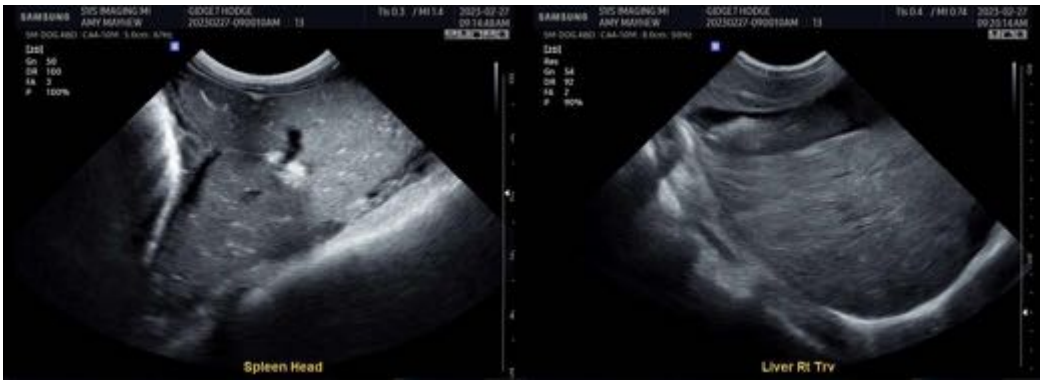

The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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.

Andrea Nicastro, MPH, DVM, Diplomate DACVIM (Small Animal Internal Medicine)
info@SonoPath.com