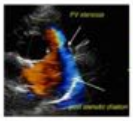
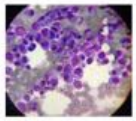
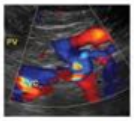






**PATIENT**

Charlie Kennedy

**SPECIES**

Feline

**BREED**

DLH

**SEX**

Neutered Male

**AGE**

14 years

**WEIGHT**

5.8 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. Foster

**INVOICE**

12281

**DATE**

2.24.23

## PRESENTING CLINICAL SIGNS

History: Current meds: Orbax, Miratax, Prednisolone. Had radioactive iodine treatment on Feb 13th, was not eating well before that. Weight loss and elevated LES. Concern for hepatic lipidosis v. primary liver disease.

Abnormal PE/Chem/CBC/UA Results: Right thyroid nodule, cachexia, icterus, mild hepatomegaly on abdominal palpation. Leukocytosis with a neutrophilia. ALT 264. ALP 337. AST 133. GGT 35. tBili 1.9.

## ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN

### *Urinary System*

The urinary bladder, trigone, and pelvic urethra are 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 2 cm, are normal.

The left kidney is normal in size (3.85 cm in length) with a normal shape, architecture and smooth peripheral margins. There is a normal 1:3 cortex to medulla ratio with mild to moderate loss of corticomedullary distinction. Hyperechoic shadowing diverticular foci are visualized. There is no evidence of pyelectasia, nephroliths, infarcts or hydroureter.

The right kidney is normal in size (3.69 cm in length) with a normal shape, architecture and smooth peripheral margins. There is a normal 1:3 cortex to medulla ratio with normal corticomedullary distinction. There is no evidence of pyelectasia, nephroliths, infarcts or hydroureter. Renal vasculature is normal.

### *Adrenal Glands*

The left adrenal gland is normal in size (0.26 cm width). Normal shape and glandular echogenicity. The phrenicoabdominal vein and surrounding vasculature are normal.

The right adrenal gland is enlarged with a mass effect (1.04 cm width) with a rounded shape. The parenchyma is hypoechoic with an ill-defined hyperechoic area centrally. There is loss of glandular detail. The phrenicoabdominal vein and surrounding vasculature appear normal.

### *Spleen*

The spleen is normal in size (0.65 cm in width at the level of the hilus) with a normal capsular contour. There is appropriate echogenicity and echotexture. No focal lesions are observed. Splenic vasculature is normal.

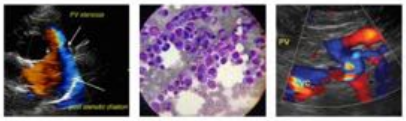
### *Liver*

The liver is subjectively normal in size with normal curvilinear peripheral contours. One to two hypoechoic, slightly heterogenous, questionably-cavitated nodules are observed on the left side. Each nodule measures approximately 1.00 cm in diameter. The remaining parenchyma is relatively homogenous. Hepatic vasculature and intrahepatic biliary tracts are of normal volume with no evidence of congestion.

The gall bladder is moderately distended. The wall is severely thickened (up to 0.30 cm), hyperechoic and irregular. A scant amount of echogenic debris is observed within the lumen. The cystic and common bile ducts are visible/tortuous, but not overtly dilated. The common bile duct measures 0.20 cm in diameter. The walls of the cystic and common bile ducts are mildly thickened. There is no obvious evidence an intraluminal obstruction.

### *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





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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 ileocecocolic junction and colonic wall are normal. There is no evidence of an obstructive pattern.

***Pancreas***

The left limb is prominent in size with slightly irregular peripheral contours. The parenchyma is hypoechoic relative to surrounding omental fat and mottled in appearance, with a few ill-defined hypoechoic to anechoic nodules. The pancreatic duct is borderline dilated (0.25 cm in diameter).

***Free Abdomen***

Trace free fluid is observed. A 0.58 cm cranial abdominal lymph node is visualized. One to two prominent mesenteric lymph nodes are also seen (the largest measuring 0.96 cm in length).

## ULTRASONOGRAPHIC FINDINGS

### Primary Findings

- One to two left hepatic nodules. These lesions could be consistent with neoplasia (i.e., biliary cystadenoma, biliary cystadenocarcinoma, round cell neoplasia, other). Alternatively, inflammatory foci or granulomas are also possible.
- The gall bladder changes could be consistent with severe cholecystitis or emerging neoplasia (i.e., carcinoma). The cystic and common bile duct wall changes are most consistent with cholangitis.
- The pancreatic changes are most consistent with chronic pancreatitis with suspected benign nodular hyperplasia +/- parenchymal cysts.
- Right adrenal mass effect. Differentials include hyperplasia, adrenalitis, adenoma, adenocarcinoma, other.

### Secondary Findings

- Bilateral chronic age-related renal changes
- The prominent abdominal lymph nodes are most consistent with reactive lymphadenitis or lymphoid hyperplasia. Neoplastic infiltration is considered less likely.

## INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

- Regarding the hepatic lesions, fine-needle aspirates can be considered (if clotting status is appropriate). If hepatic tissue sampling is performed, other areas of the liver besides the nodule, should also be sampled to assess for a diffuse hepatopathy. Twenty-five gauge-needles should be used.If the cytology results are inconclusive, excisional biopsy of the lesions and sampling of the other liver lobes may be necessary to get a definitive diagnosis. If surgery is pursued, aerobic and anaerobic bile cultures should also be obtained, +/- biopsy of the gall bladder wall.
- Three-view thoracic radiographs are recommended to assess for pulmonary metastatic disease.
- Regarding the right adrenomegaly, the following can be considered:

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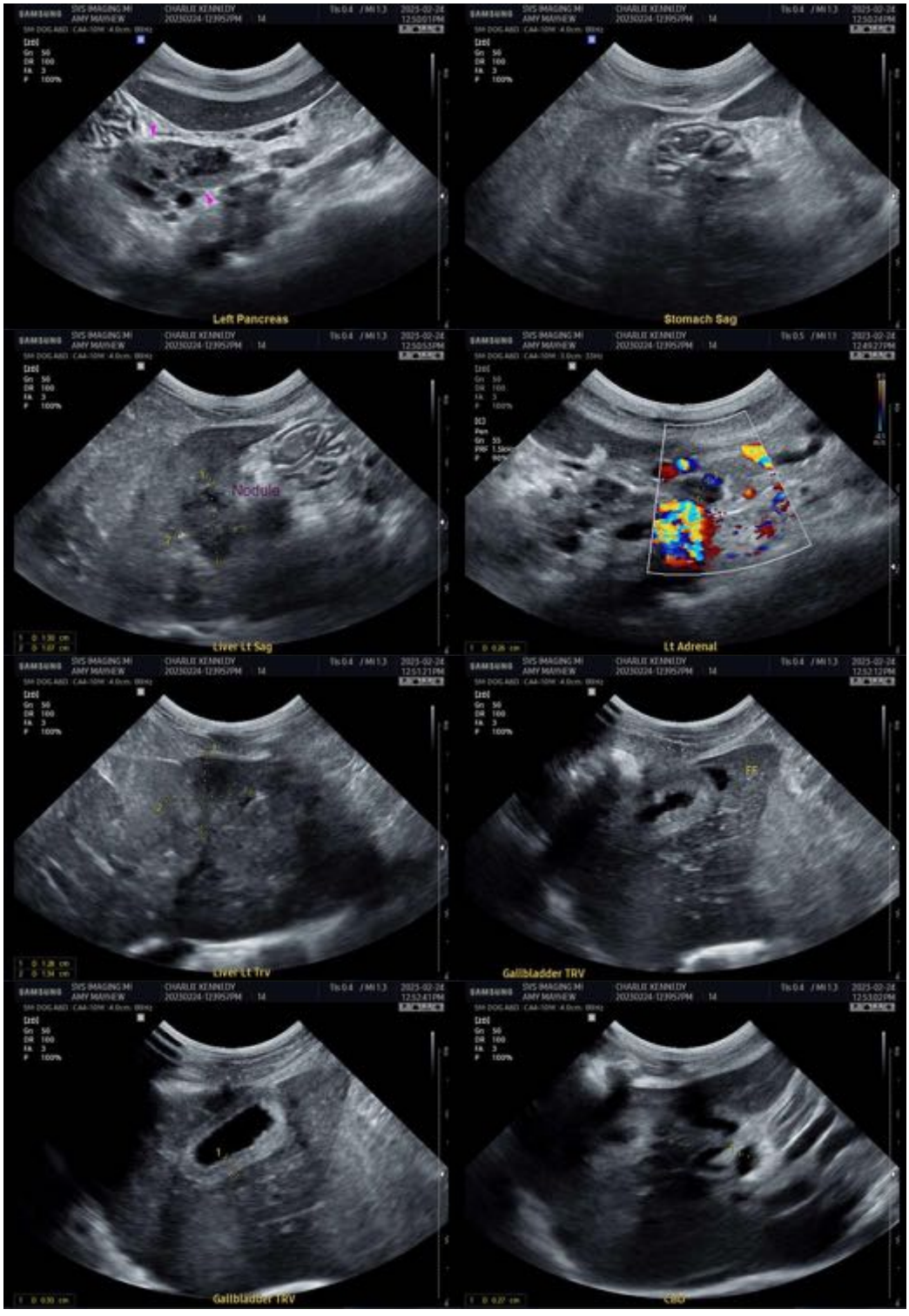
1. Serial sonographic monitoring to assess for growth.
2. Close monitoring for clinical signs of Cushing's disease and/or hyperaldosteronism, along with periodic evaluation of the patient's electrolytes
3. Consultation with a board-certified surgeon to discuss a right adrenalectomy (if an aggressive approach is desired)



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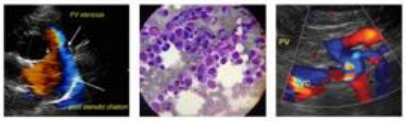

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**The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.**

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