SonoPath
Clinical Sonography & Telecytology
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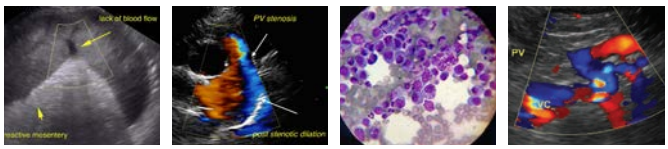


SonoPath.com
1-800-838-4268 info@sonopath.com

**PATIENT**
Olive Schmerler

**SPECIES**
Canine

**BREED**
Mixed

**SEX**
Spayed Female

**AGE**
16 Years

**WEIGHT**
16.2

**INTERPRETED BY**
Kathleen Sennello DVM, MS, Diplomate ACVIM (Small Animal Internal Medicine)

**IMAGING PERFORMED BY**
Dr. Isermann

**HOSPITAL NAME**
Animal Emergency Hospital of Volusia

**REFERRING VET**
Dr. Isermann

**INVOICE**
46305

**DATE**
3/31/23

## PRESENTING CLINICAL SIGNS

P went to the RDVM 4 days ago, they found pancreatitis, alp was 689. Their radiographs indicated plural effusion, and possible renal mass.

Abnormal PE/Chem/CBC/UA Results: BUN- 38.7 Phosphorus- 5.5 ALP- 701 CPL was abnormal

## ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN

### *Urinary System*

The urinary bladder is mildly distended with anechoic urine. There is a focal area of irregular bladder wall visualized in the ventral caudal aspect of the bladder. This area is irregular with small areas of mineralization measuring approximately 0.84 cm x 1.9 cm. Additionally, there is an irregular region in the dorsal apical region of the urinary bladder measuring approximately 1.2 cm x 0.87 cm. The more caudal lesion approaches the region of the trigone, but there is no direct involvement of the ureteral papilla or cystourethral junction. The tissue in the dorsal cystourethral junction appears slightly irregular, but there is no overt mass effect. No calculi are visualized.

The left kidney has a normal shape and size (5.74 cm). Overall echogenicity is slightly hyperechoic with poor corticomedullary distinction and a typical 1:3 cortex:medulla ratio. There is no evidence of focal perinephric inflammation or effusion. There is no evidence of pyelectasia, nephroliths, infarcts or hydroureter. Renal vasculature is normal.

The right kidney has a normal shape and size (4.25 cm) with mild pyelectasia at 0.24 cm. Overall echogenicity is slightly hyperechoic with poor corticomedullary distinction and a typical 1:3 cortex:medulla ratio. There is no evidence of focal perinephric inflammation or effusion. There is no evidence of nephroliths, infarcts or hydroureter. Renal vasculature is normal.

### *Adrenal Glands*

The region of left adrenal (Cranial to left renal artery) is unremarkable but the adrenal is not distinctly visualized. No evidence of a mass effect is visualized.

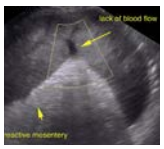
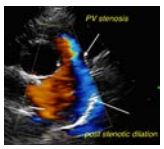
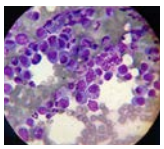
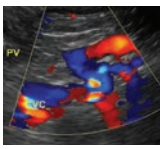
The right adrenal gland is difficult to definitively identify. There is a structure most consistent with the right adrenal visualized between the kidney and the caudal vena cava, measuring approximately 0.82 cm.

### *Spleen*

The spleen is large and slightly irregular in shape. The spleen echotexture is heterogenous and mottled. The blood flow through the hilus and splenic parenchyma appears normal. There is an irregular mixed echogenic region visualized at the hilus, creating somewhat of a mass effect measuring 1.4 cm x 2.82 cm. Additionally, there is free fluid in the region. This lesion is strongly suspected to be splenic in origin, but color flow would likely be necessary to confirm.

### *Liver*

The liver is subjectively normal in size, and echogenicity with smooth peripheral margins. The parenchyma is mildly heterogenous in echotexture with subtle, indistinct focal mottling. The visible portions of the vasculature and biliary tract appear normal. No focal nodules or cystic lesions are observed.

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The gallbladder lumen is moderately distended. The wall of the gall bladder is not thickened and has a smooth mucosal surface. Luminal contents are mild and primarily anechoic. The cystic and common bile ducts are normal/not visible.

### *Gastrointestinal*

The stomach contains minimal luminal contents. It measures at a normal thickness of <0.7cm with some variability due to the presence of rugal folds. The distinction of the gastric wall layers is adequate and there is no impression of reduced peristaltic activity. No masses or focal lesions were observed.

The visualized areas of duodenum, jejunum and ileum have a relatively uniform diameter with minimal fluid distension. Wall thickness is normal. Bowel loops follow a curvilinear path with distinct wall layering maintaining the typical 1:3 muscularis:mucosa layer ratio. Duodenum wall meaures 0.42 cm. Jejunum wall measures 0.33 cm. Visualized peristalsis appears appropriate. There were no focal lesions consistent with obstruction or a mass effect observed.

The ileocecal junction was visualized and exhibited normal intact wall layering and is subjectively of normal thickness. Sections of colon are visualized with formed fecal material and gas shadowing distally. There is no observed focal or generalized colon wall thickening or loss of layering.

### *Pancreas*

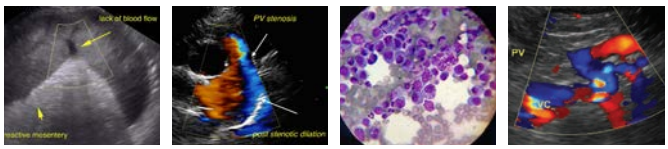
The pancreas is prominent and mottled compared to the surrounding isoechoic mesentery, particularly in the right limb. There is no evidence of nodules or cystic lesions. There is no evidence of regional mesenteric inflammation or fluid.

### *Free Abdomen*

There is a small amount of free abdominal fluid. There is no lymphadenopathy. The omentum is generally of normal echogenicity.

## ULTRASONOGRAPHIC FINDINGS

- Two irregular focal thickenings of the urinary bladder wall – Findings are concerning for possible transitional cell carcinoma, but inflammatory lesions and other are possible. Recommend urinalysis and culture.
- Mildly reduced corticomedullary distinction in both kidneys – The bilateral renal findings are consistent with age-related change.
- Irregular mixed echogenic mass effect at the level of the hilus – There is a non-cavitated, mixed echogenic splenic nodule visualized. Differentials include lymphoid hyperplasia, extramedullary hematopoiesis, infiltrative neoplasia, inflammation, other. Cytology or histopathology would be necessary to get a definitive diagnosis. This lesion deforms the splenic capsule in the region of the hilus, and there is some free fluid, so there is increased concern for a neoplastic lesion.
- Prominent, mottled pancreas – The pancreatic changes are most consistent with mild pancreatitis or a recent episode of pancreatic inflammation.
- Mildly heterogeneous liver – The diffuse hepatic changes are non-specific and could be consistent with vacuolar hepatopathy, nodular hyperplasia, inflammatory/immune-mediated disease, fibrosis, extramedullary hematopoiesis, toxic hepatopathy (e.g., copper), infiltrative neoplasia (less likely) or other hepatopathy.



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- Small volume free abdominal fluid – If a sample can be obtained, consider fluid analysis and cytology.

## INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

There is a small irregular, mixed echogenic lesion visualized at the hilus of the spleen. This is a difficult area to interpret, as the capsule is often irregular in this region, but there is a focal irregularity here concerning for a possible small mass effect/nodule. Fine needle aspirate of this region may be challenging due to the proximity of the large vessels. Additionally, there is some free abdominal fluid int the abdomen. This could represent inflammatory fluid, hemorrhage, etc. If possible, consider obtaining a sample.

There are two focal irregularities with the urinary bladder. This is somewhat difficult to assess due to the lack of significant urine distention. These lesions are concerning for possible transitional cell carcinomas, although other differentials such as benign polypoid lesions, etc. exist. Recommend a urinalysis and culture, and ideally sampling of these lesions with traumatic catheterization or cystoscopy. Alternately, you could consider a urine BRAF test. If this test is positive and there is no evidence of inflammation/infection, this would increase the likelihood that these are neoplastic lesions. If this test is negative, it is non-diagnostic and additional diagnostics would be necessary.

The changes observed in the kidneys and liver are likely most consistent with age related change.

It is not definitively certain if the lesions described are the cause for the symptoms you are reporting. Sampling of the abdominal fluid would be helpful. If hemorrhage is present, I would consider a splenectomy for both diagnostic and therapeutic purposes. If pleural effusion is present, this would be concerning for possible hypoalbuminemia, metastatic disease, etc. Sampling of the pleural effusion could possibly help with determining a cause.

The pancreas appears somewhat mottled and irregular, but not overtly inflamed on today's exam.

The bladder lesions are concerning for an underlying neoplastic process but are unlikely to be causing the symptoms described.

If further information is desired prior to considering surgery, you could consider a contrast CT scan of the abdomen and thorax, looking for evidence of metastatic disease, etc.

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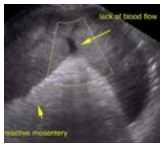
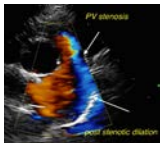
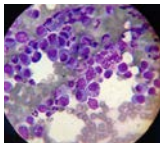
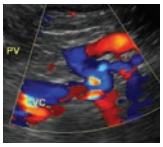

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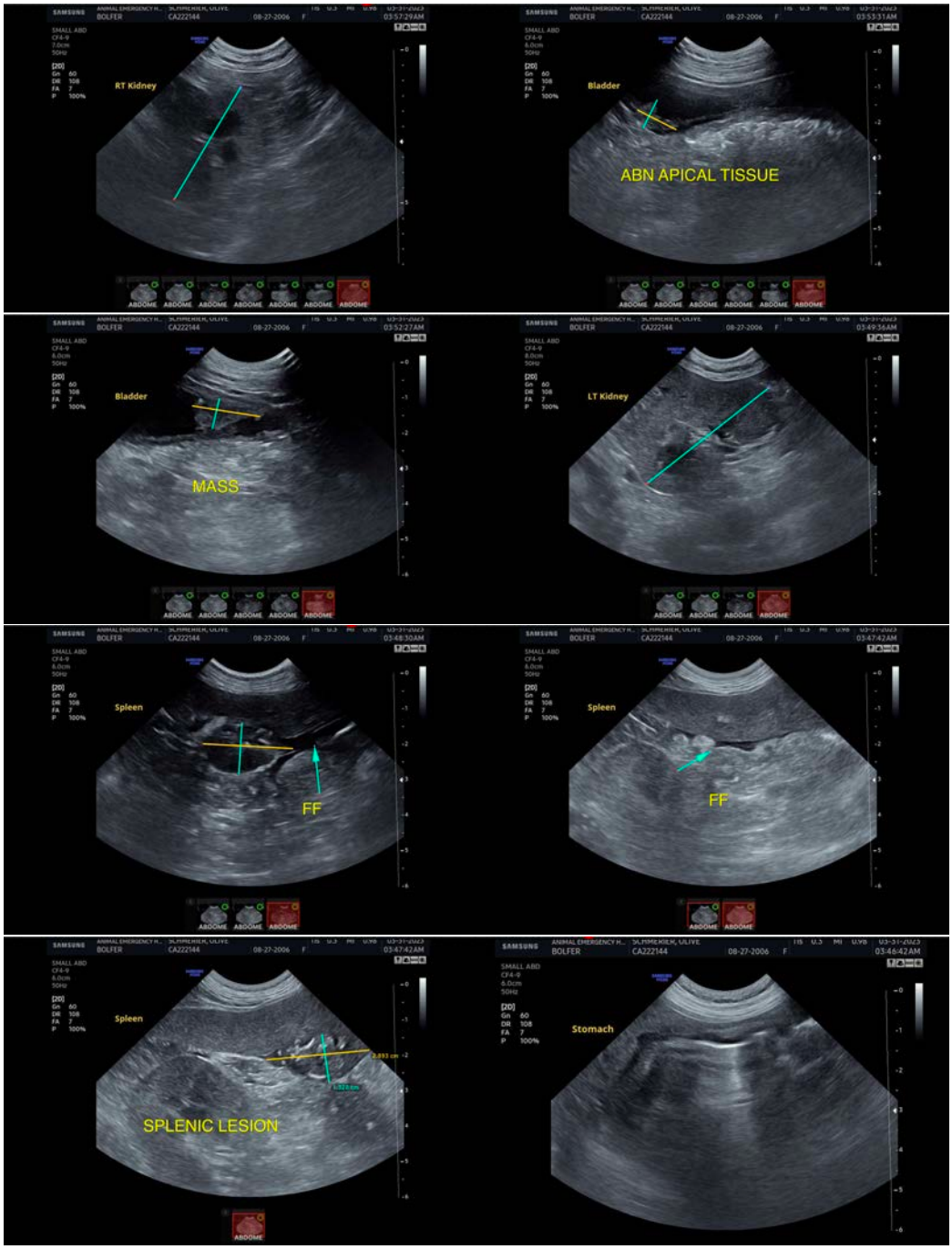

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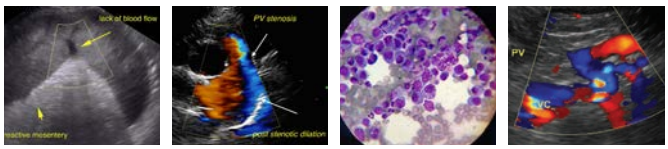

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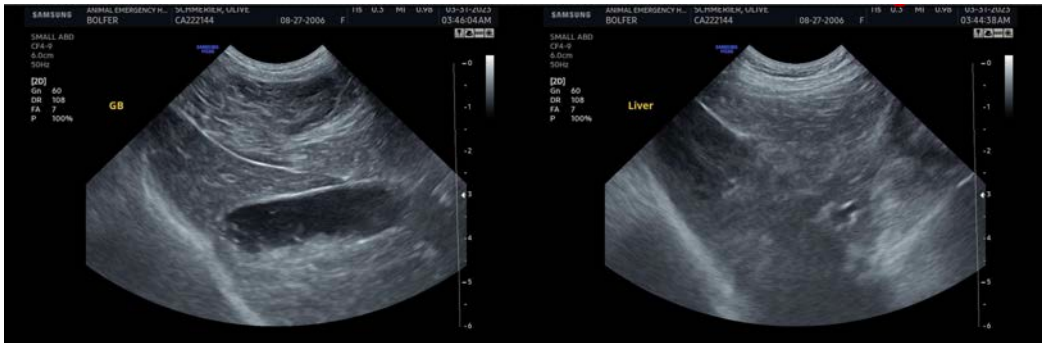


**The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.**

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.

Kathleen Sennello DVM,MS, Diplomate ACVIM (Small animal Internal Medicine)

kathleen.sennello@sonopath.com