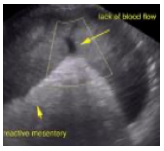
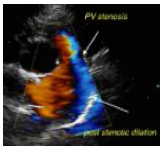
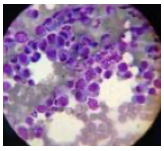
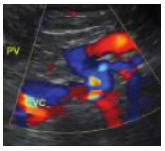

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**PATIENT**
Willie Lee-Virnig

**SPECIES**
Canine

**BREED**
Dachshund

**SEX**
Male, neutered

**AGE**
11 Yrs. 7 months

**WEIGHT**
21.7 lbs.

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

**IMAGING PERFORMED BY**
Amanda Crook

**HOSPITAL NAME**
Rivers Edge Pet Medical Center

**REFERRING VET**
Dr. David Gray

**INVOICE**
14689

**DATE**
3/6/23

## PRESENTING CLINICAL SIGNS

History: P presented 3/3/23 in acute respiratory distress after 15 min walk in lateral recumbency. History of back pain and heart murmur. Pimobendan and Lasix started - echocardiogram performed (see attached echo report) cardiac function was abnormal but did not completely fit with P presentation. Continued Pimobendan and lasix and added in enalapril. Later on on 3/6/23 neurologic function was observed to be deficient after somewhat recovering from the acute crisis of cardiac and respiratory distress the patient seen to have CP deficits both front and back limbs P is still lateral recumbency as of today with continued neurological deficits and has in dwelling urinary catheter in place; P is in line for neurologic referral to specialty tomorrow
Abnormal PE/Chem/CBC/UA Results: Labwork performed on 3/3: CBC - RBC 8.96, PCT 0.49, rest WNL CHEM - CA 12.5, ALB 4.5, ALKP 246, LIPA 1890, CL 106 Radiographs attached - Enlarged heart pulmonary edema loss of detail in the abdomen large bladder large liver stomach dilated with air. Calcium 12.5

## ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN

### *Urinary System*

The urinary bladder is contracted. A Foley catheter is observed within the bladder lumen. The wall is of appropriate thickness for the level of repletion. No cystic calculi are observed. The visible portion of the proximal urethra is normal.

The prostate is normal in size (0.96 cm in width) and shape. Parenchyma is homogenous. The prostatic urethra appears normal without evidence of dilation or obstruction.

The left kidney is normal size (6.17 cm in length); normal shape and architecture with smooth peripheral margins. There is a normal 1:3 cortex to medulla ratio with minimal to mild loss of corticomedullary distinction. There is no evidence of pyelectasia, nephroliths, infarcts or hydroureter. Renal vasculature is normal.

The right kidney is normal size (6.08 cm in length); normal shape and architecture with smooth peripheral margins. There is a normal 1:3 cortex to medulla ratio with mild loss of corticomedullary distinction. There is no evidence of pyelectasia, nephroliths, infarcts or hydroureter. Renal vasculature is normal.

### *Adrenal Glands*

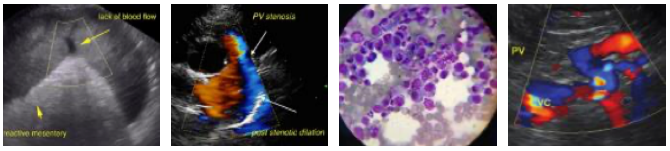
The left adrenal gland is normal size (0.54 cm at cranial pole) (0.51 cm at caudal pole) (2.15 cm in length); normal shape; homogenous parenchyma. The glandular echogenicity and detail are unremarkable. Capsule, cortex, and medullary definition are normal. The phrenicoabdominal vein and surrounding vasculature are normal.

The right adrenal gland is normal size (0.91 cm at cranial pole) (0.58 cm at caudal pole) (2.30 cm in length); normal shape; homogenous parenchyma. The glandular echogenicity and detail are unremarkable. Capsule, cortex, and medullary definition are normal. The phrenicoabdominal vein and surrounding vasculature are normal.

### *Spleen*

The spleen is normal in size (1.33 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*



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The liver is subjectively prominent in size with normal curvilinear peripheral contours. The parenchyma is isoechoic relative to the spleen and diffusely homogeneous in appearance. No distinct focal lesions are observed. Vascular and biliary tracts are of normal volume with no evidence of congestion. The portal vein to caudal vena cava ratio is approximately 1:1. The gall bladder lumen is moderately distended. The wall is thin and smooth. A small polypoid lesion is arising from the mucosal surface. A small amount of echogenic debris is also adhered to the mucosa. 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 not distended. 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 mural detail. Discreet masses are not identified. The colonic wall is normal. No obstructive disease is noted.

### *Pancreas*

The right limb of the pancreas is visible with normal curvilinear peripheral contours. The parenchyma is largely hyperechoic relative to surrounding omental fat and slightly mottled in appearance. The pancreatic duct is visible but not overtly dilated. There is no evidence of peripancreatic inflammation or effusion.

### *Free Abdomen*

The peritoneal cavity is normal. There is no evidence of inflammation or effusion. A few prominent mesenteric lymph nodes are seen, the largest measuring 1.44 cm in length. The nodes are normal in shape and echogenicity.

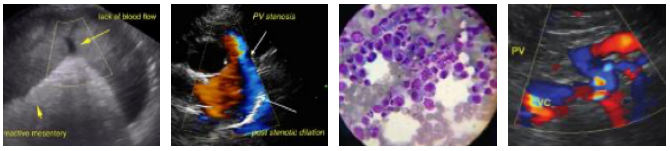
## ULTRASONOGRAPHIC FINDINGS

- Minor bilateral age-related renal changes.
- The pancreatic changes are most consistent with age-related parenchymal remodeling, potentially secondary to a prior inflammatory episode, early fibrosis or chronic pancreatitis.
- Suspected benign diffuse hepatopathy. Based on the patient's lack of ALT elevation and the sonographic changes, vacuolar hepatopathy (i.e., idiopathic, endocrine) is the top differential with a lower possibility of more insidious hepatic pathology.
- The lymph node changes are most consistent with reactive lymphadenitis or lymphoid hyperplasia.

*An obvious cause for the patient's clinical signs is not identified in this study. Considerations include vascular event, occult neoplasia, ARDS, pneumonitis, other.

## INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

- To further investigate causes of an underlying thromboembolic event, consider the following:
  1. UPC (if proteinuria is present on the urine dipstick).



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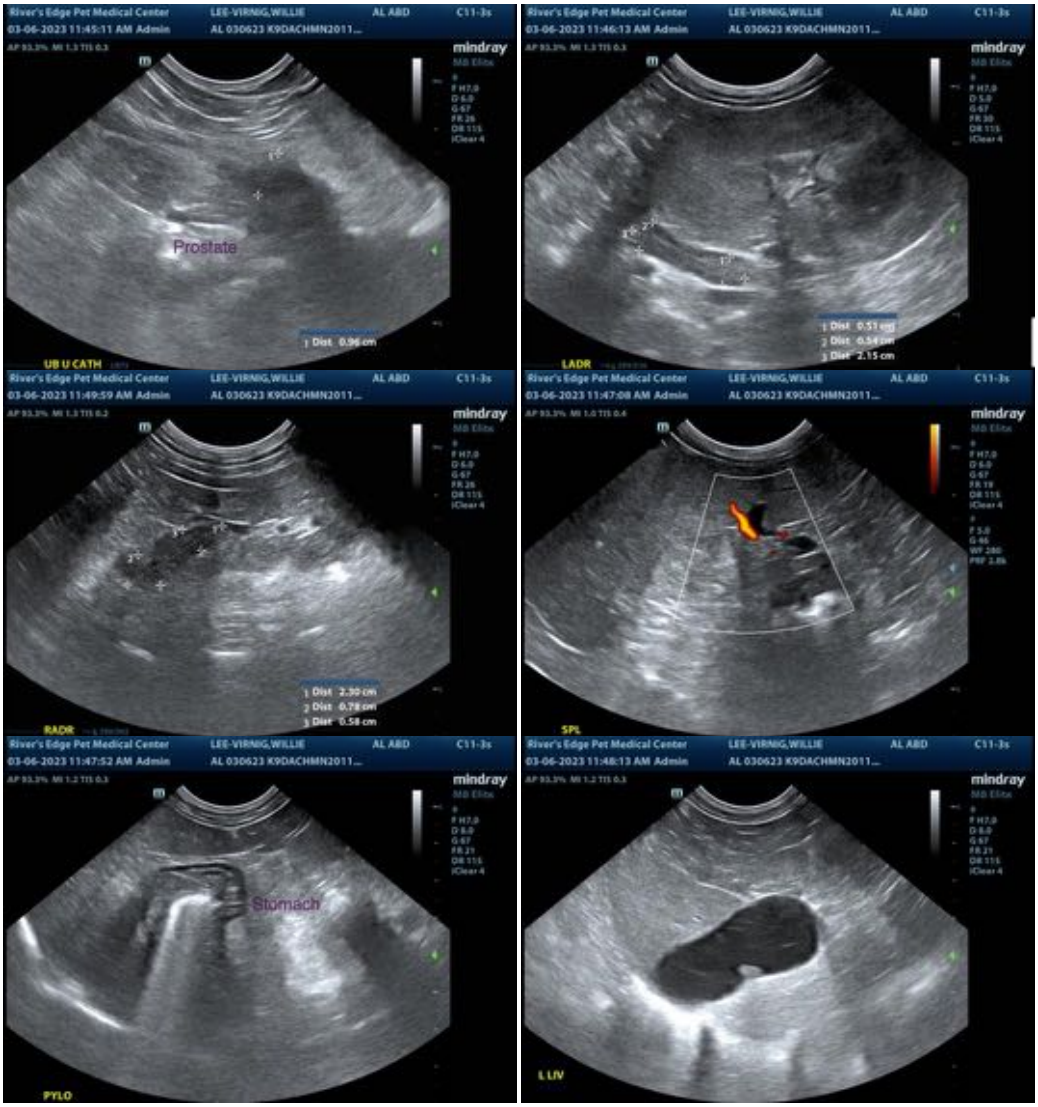
2. Baseline blood pressure measurement to assess for systemic hypertension.
3. Cushing's testing (i.e., low-dose Dexamethasone suppression test), particularly if clinical signs of the disease are present.
4. Consultation with a board certified neurologist is also recommended.
5. Repeat thoracic radiographs should be considered in 3-5 days (or sooner if problems arise) to assess progression of lung status. If respiratory signs/lung changes persist, a more comprehensive pulmonary work up may be warranted.

- Regarding the hypercalcemia, consider the following:
  1. Rectal examination to assess for anal gland tumors.
  2. Ionized calcium/PTH/PTHRP.



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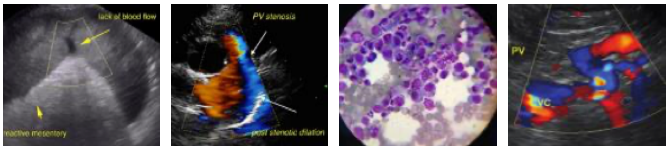

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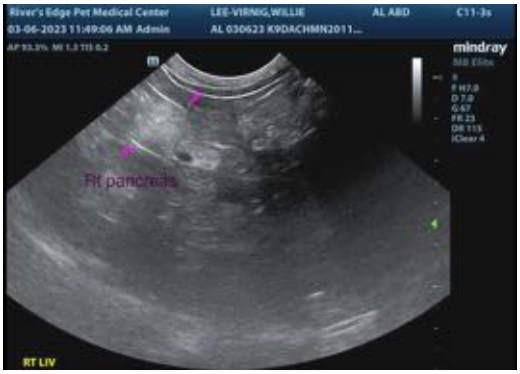


**The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.**

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, MPH, DVM, Diplomate DACVIM (Small Animal Internal Medicine)
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