

## PATIENT

Ellie Lopez

## PRESENTING CLINICAL SIGNS

## SPECIES

Canine

## BREED

Australian Shepherd

## SEX

Spayed Female

Ellie has had waxing and waning FUO (103.8-104.0), severe lethargy, weakness, anorexia and weight loss. Diagnosis: ddx: pancreatitis vs neoplasia vs other History and Physical Findings: Ellie has had a hx of severe weight loss, inappetence and PU/PD. She was diagnosed with Cushing's, however had a very severe reaction to treatment (Trilostane) and has been managed on low dose prednisone every other day. Her clinical signs had resolved. On August 28th 2022 she started acting lethargic and not interested in food, she had a fever of 104.0 that night and was unable to stand or go to the bathroom. She slowly recovered over the next few days and all clinical signs relapsed (including fever) on Sept 5th. Ellie also has a hx of waxing and waning gastritis like signs Radiographic Abnormalities: Enlarged liver present, loss of serosal detail throughout Current Therapy and Medications: SQ fluids at home 10mg Prednisolone twice daily Cerenia injection as needed Albon

Abnormal PE/Chem/CBC/UA Results: ALP 694 H (5-131) T4 0.5 L (0.8-3.5)T4 ED 15.7 (8-40) WNL CBC Lymphocytes 6237 690-4500 / $\mu$ L LOW

## AGE

10 Years 11 Months

## ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN

## WEIGHT

52.8 Pounds

### Urinary System

The urinary bladder is moderately distended with anechoic urine. The Bladder wall, trigone, ureteral papillae and visible urethra (to a depth of 2cm) appear normal with no evidence of wall thickening, mucosal irregularities, masses or cystic calculi.

## INTERPRETED BY

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

The left kidney has a normal shape and size (6.4 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.

## IMAGING BY

Loetitia Saint-Jacques,  
LVT

The right kidney has a normal shape and size (6.25 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.

## HOSPITAL NAME

Valley Vet Clinic

### Adrenal Glands

The left adrenal gland is normal/borderline small measuring 0.34 cm at the caudal pole. It is observed in its normal position cranial to the left renal artery. It is normal in appearance (uniformly hypoechoic) and shape with no evidence of a mass effect.

## REFERRING VET

Dr. Anna Lopez

The right adrenal gland is normal/borderline small measuring 0.37 cm at the caudal pole. It is observed in its normal position between the cranial aspect of the right kidney and the caudal vena cava. It is normal in appearance (uniformly hypoechoic) and shape with no evidence of a mass effect.

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### Spleen

The spleen is subjectively normal in size, echotexture is homogenous, and the splenic capsule is smooth with no irregularities. The blood flow through the hilus and splenic parenchyma appears normal. No focal parenchymal abnormalities are visualized.

## DATE

9/6/22



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**Liver**

The liver is large, and normal in echogenicity with smooth peripheral margins. The parenchyma is heterogeneous in echotexture with subtle, indistinct focal mottling. The visible portions of the vasculature and biliary tract appear normal. There is a small, ill-defined, hypoechoic lesion visualized within the parenchyma measuring 0.83 cm.

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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 is moderately dilated with fluid and irregular shadowing material most consistent with normal ingesta and gas. 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 layering is adequate and there is no impression of reduced peristaltic activity. No masses or focal lesions were observed.

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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 measures 0.49 cm. Jejunum wall measures 0.32 cm. Visualized peristalsis appears appropriate. There were no focal lesions consistent with obstruction or a mass effect observed.

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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.

**INTERPRETED BY**

Kathleen Sennello DVM,  
MS, Diplomate ACVIM  
(Small Animal Internal  
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**Pancreas**

The pancreas is normal and isoechoic to surrounding mesentery. There is no evidence of nodules or cystic lesions. There is no evidence of regional mesenteric inflammation or fluid.

**Free Abdomen**

Evaluation of the peritoneal cavity did not reveal any evidence of effusion, or subjective lymphadenomegaly. The Medial iliac nodes appear normal and there was no evidence of a caudal aortic thrombus at the bifurcation. The omentum is of normal uniform echogenicity.

**IMAGING BY**

Loetitia Saint-Jacques,  
LVT

**Cervical Region**

The cervical region was imaged, revealing a normal trachea and esophagus. The left and right thyroid glands appear normal in size and appearance. The left measures 0.39 cm in diameter. The right measures 0.64 cm in diameter. The caudal parathyroids are visualized on both glands as slightly enlarged, hypoechoic structures. The left parathyroid is visualized measuring 0.33 cm. The right measures 0.44 cm (normal is <2.0 mm).

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**REFERRING VET**

Dr. Anna Lopez

The lymph nodes in the cervical area are prominent and hypoechoic with surrounding mildly hyperechoic/reactive tissue.

**PRIMARY FINDINGS**

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- Large, heterogeneous liver with small hypoechoic, ill-defined lesion – The diffuse hepatic changes are non-specific and could be consistent with vacuolar hepatopathy, nodular

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hyperplasia, inflammatory/immune-mediated disease, fibrosis, extramedullary hematopoiesis, toxic hepatopathy (e.g., copper), infiltrative neoplasia (less likely) or other hepatopathy. The hypoechoic lesion observed is most consistent with a benign regenerative nodule, but continued monitoring is warranted. These changes are most likely consistent with a vacuolar hepatopathy/steroid hepatopathy.

- Bilateral adrenal atrophy – likely secondary to chronic corticosteroid use.
- Prominent parathyroid glands – most consistent with hyperplasia. Recommend continued monitoring of calcium levels.
- Enlarged cervical lymph nodes – The prominent abdominal lymph nodes are most consistent with reactive lymphadenitis or lymphoid hyperplasia. Neoplastic infiltration is considered less likely.

## SECONDARY FINDINGS

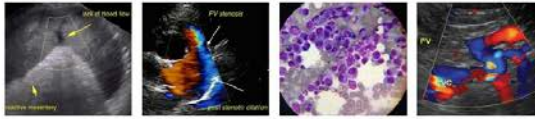
- Decreased corticomedullary distinction in both kidneys – The bilateral renal findings are consistent with age-related change.

## INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

No new lesions are visualized on today's abdominal ultrasound. The small adrenal glands and large heterogeneous liver are likely due to the chronic corticosteroid use. The renal changes are likely age related. This is a difficult case (as are all FUOs). If muscle wasting is severe, and you are desiring a definitive diagnosis, you could consider weaning to a physiologic dose of steroid and consider joint taps and muscle biopsies once off steroids or on a physiologic dose.

If inflammation can be confirmed, then I would be more apt to consider aggressive immunosuppression, and likely recommend immunosuppressives to use in conjunction with Prednisone, as this has a lot of side effects (including muscle wasting) that make assessment difficult. If not already done, consider a fine needle aspirate of one of the plumper, larger lymph nodes. My suspicion is that these are reactive, but if you have not performed lymph node aspirate yet, this should be considered.

The parathyroid glands appear somewhat prominent. A normal parathyroid gland is usually less than 2.0 mm, and these measure 3.0 mm on the left and 4.0 mm on the right. These are likely smaller than you would expect for an adenoma but continued monitoring of the parathyroid glands is warranted. This currently would be most consistent with hyperplasia.



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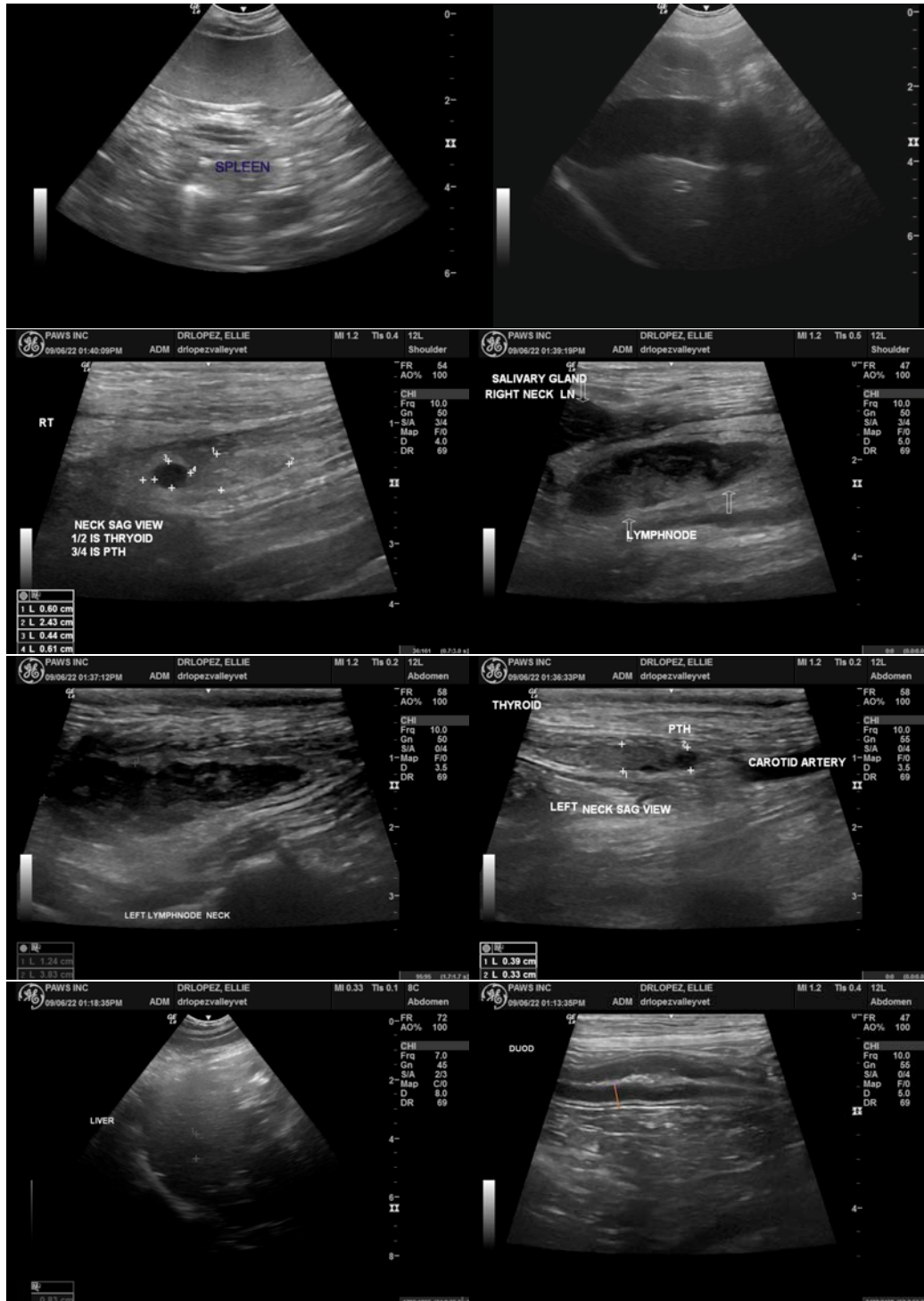
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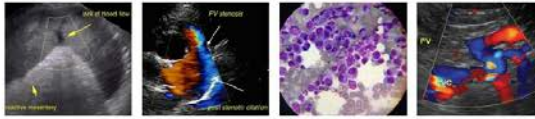
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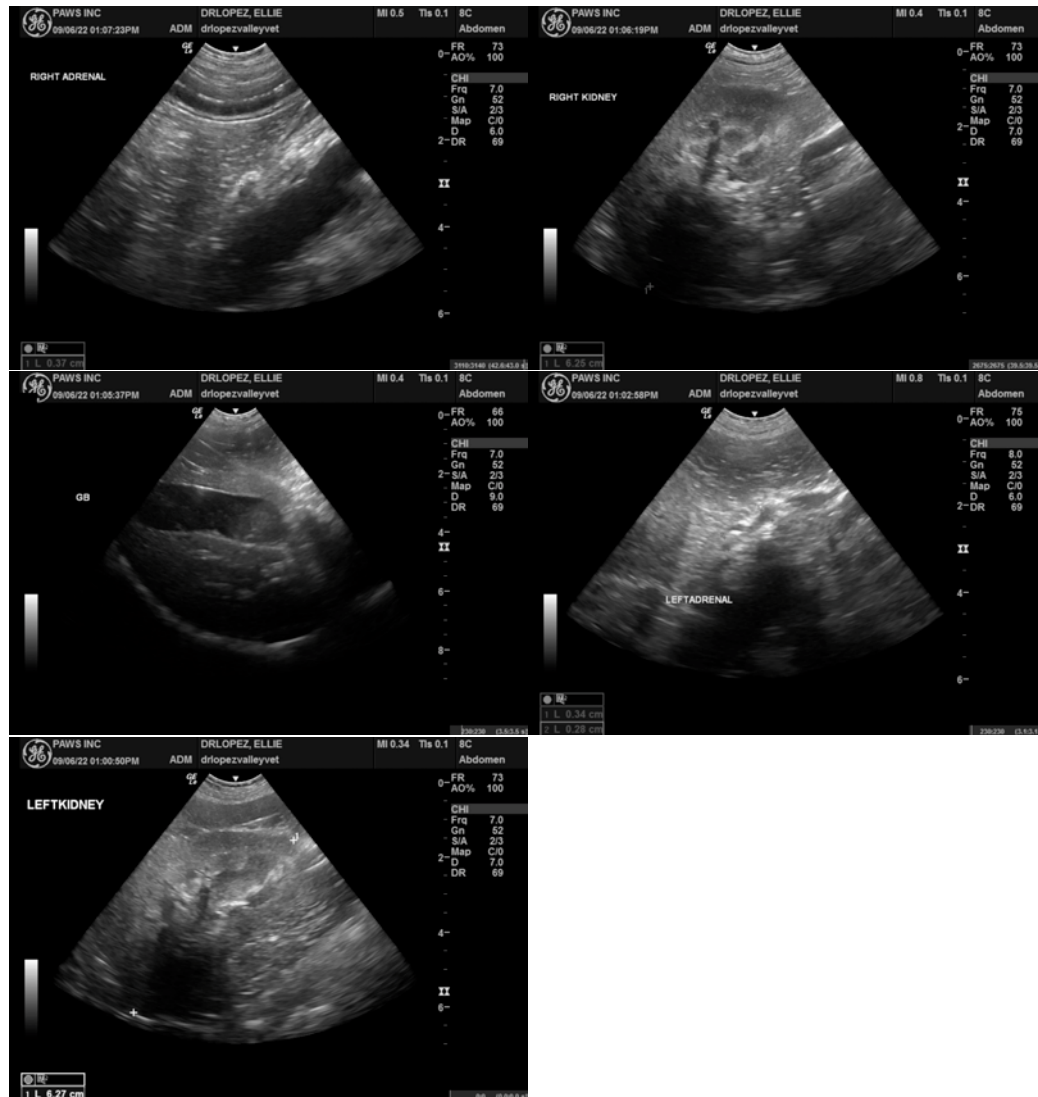
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The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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