



**PATIENT PRESENTING CLINICAL SIGNS**

Molly Eleste

**SPECIES**

Canine

**BREED**

Dachshund X

**SEX**

Spayed Female

Presented as a referral for an abdominal ultrasound to evaluate increased liver enzymes. On 30/December/2022, the patient went for a routine dental appointment, and subsequent bloodwork showed elevated levels of ALKP. The patient was scheduled for follow-up bloodwork in the next 6 months and on 21/June/2023 presented elevated levels of ALKP and GGT, On physical exam a 1.5x1 inch mass on the right axilla was noticed and it was evaluated by pathologist with cytology on June 13, 2023 and was diagnosed with malignant neoplasia most compatible with carcinoma with associated suppurative inflammation. Elevated liver enzymes: R/O cholestasis vs gall bladder stones.

Abnormal PE/Chem/CBC/UA Results: BW: CBC: WNL CHEM : ALKP :637 (23-212) GGT : 30 (0-11) Radiographs: Hepatomegaly, mineralization on the cranial abdomen ( gastric vs Colon vs Gall bladder) , thick gastric walls, copious gas accumulation. 4DX: neg all

**ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN**

**AGE**

12 Years

**WEIGHT**

16.3 Pounds

**Urinary System**

The urinary bladder is moderately distended with anechoic urine. Much of the Bladder wall appears of normal thickness with a smooth mucosal surface, measuring at approximately 0.10 cm. In the region of the trigone there is some focal irregularity and thickening of the urinary bladder wall with measurements of approximately 0.37 cm. No evidence of calculi visualized.

The left kidney has a normal shape and size (4.62 cm). Overall echogenicity is normal with adequate 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 (4.85 cm). Overall echogenicity is normal with adequate 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.

**Adrenal Glands**

The left adrenal gland is normal in size measuring 0.75 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.

The right adrenal gland is normal in size measuring 0.58 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.

**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.

**INTERPRETED BY**

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

**IMAGING PERFORMED BY**

Dr. Ferrer

**HOSPITAL NAME**

Paseos Vet Center

**REFERRING VET**

Dr. Lydia Maldonado

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**DATE**

7/5/23



**PATIENT**

**Liver**

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The liver is large in size, and normal in echogenicity with smooth peripheral margins. The parenchyma is heterogenous in echotexture with subtle, indistinct focal mottling. The visible portions of the vasculature and biliary tract appear normal. There are numerous ill-defined hyperechoic nodules within the hepatic parenchyma, examples of which measure 0.70, 0.76, and 0.57 cm.

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The gall bladder lumen is moderately distended. The wall of the gall bladder is not thickened and has a smooth mucosal surface. There is a moderate amount of non-organized echogenic debris. The cystic and common bile ducts are normal/not visible.

**Gastrointestinal**

**SEX**

Spayed Female

The stomach contains minimal luminal contents. It measures at a normal thickness of 0.20 cm 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.

**AGE**

12 Years

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 0.38 cm. Visualized peristalsis appears appropriate. There were no focal lesions consistent with obstruction or a mass effect observed.

**WEIGHT**

16.3 Pounds

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.

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**Pancreas**

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

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**Free Abdomen**

Evaluation of the peritoneal cavity did not reveal any evidence of effusion. There are occasional prominent lymph nodes visualized. The right iliac lymph node measures 0.57 cm. A mesenteric lymph node visualized measures 0.32 cm. The omentum is generally of normal echogenicity.

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**ULTRASONOGRAPHIC FINDINGS**

**REFERRING VET**

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- Focal irregularity and thickening to the urinary bladder wall in the trigone region – Findings could be consistent with focal cystitis or an early mass effect.
- Prominent, mottled right limb of the pancreas – The pancreatic changes are most consistent with mild pancreatitis or a recent episode of pancreatic inflammation.
- Large, heterogeneous liver with ill-defined hyperechoic nodules – 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. The appearance of the hyperechoic nodules trends towards more benign etiology, but an underlying neoplastic process cannot be definitively ruled out.

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- Moderate gallbladder debris – The significance of the aggregated gallbladder debris is unclear. This could represent an early mucocele, cholestasis, or may be secondary to fasting but seems unlikely to be causing a current issue. Recommend continued monitoring.

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**INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS**

The trigone region of the urinary bladder appears slightly irregular and thickened, particularly in contrast to the rest of the urinary bladder. This is concerning for a possible early neoplastic lesion, focal cystitis, etc. Recommend a urinalysis and culture. If no evidence of an infection is present, then options would include reevaluation of the urinary bladder in 6-8 weeks to look for progression of this lesion, or ideally a traumatic catheterization. Additionally, a urine BRAF test could be considered. If this test is positive, then the concern for an underlying neoplastic process would increase. If the test is negative, this represent a non-diagnostic test, and additional evaluation would be necessary.

The right limb of the pancreas appears somewhat mottled/marbled and hyperechoic. This could be consistent with remodeling due to previous episodes of pancreatic inflammation, mild current inflammation, or less likely infiltrative disease, etc. Correlate findings with quantitative PLI level and recommend continued monitoring. A fine needle aspirate could be considered if this lesion progresses.

The liver is large and heterogeneous. This is a somewhat non-specific finding and could be consistent with a vacuolar hepatopathy, etc. There are some hyperechoic nodules visualized within the liver. The significance of these nodules is unclear, but the general appearance trends towards a more benign process.

There is a moderate amount of debris visualized in the gallbladder with minimal surrounding inflammation.

An obvious source for the mineralization noted in the cranial abdomen is not observed.

The correlation with these findings and the cutaneous mass lesion described is uncertain. Recommend 3-view thoracic radiographs. Surgical removal with histopathology could be considered. While evidence of metastasis cannot be definitively ruled out, a direct correlation between the lesions described and this mass lesion is not identified.





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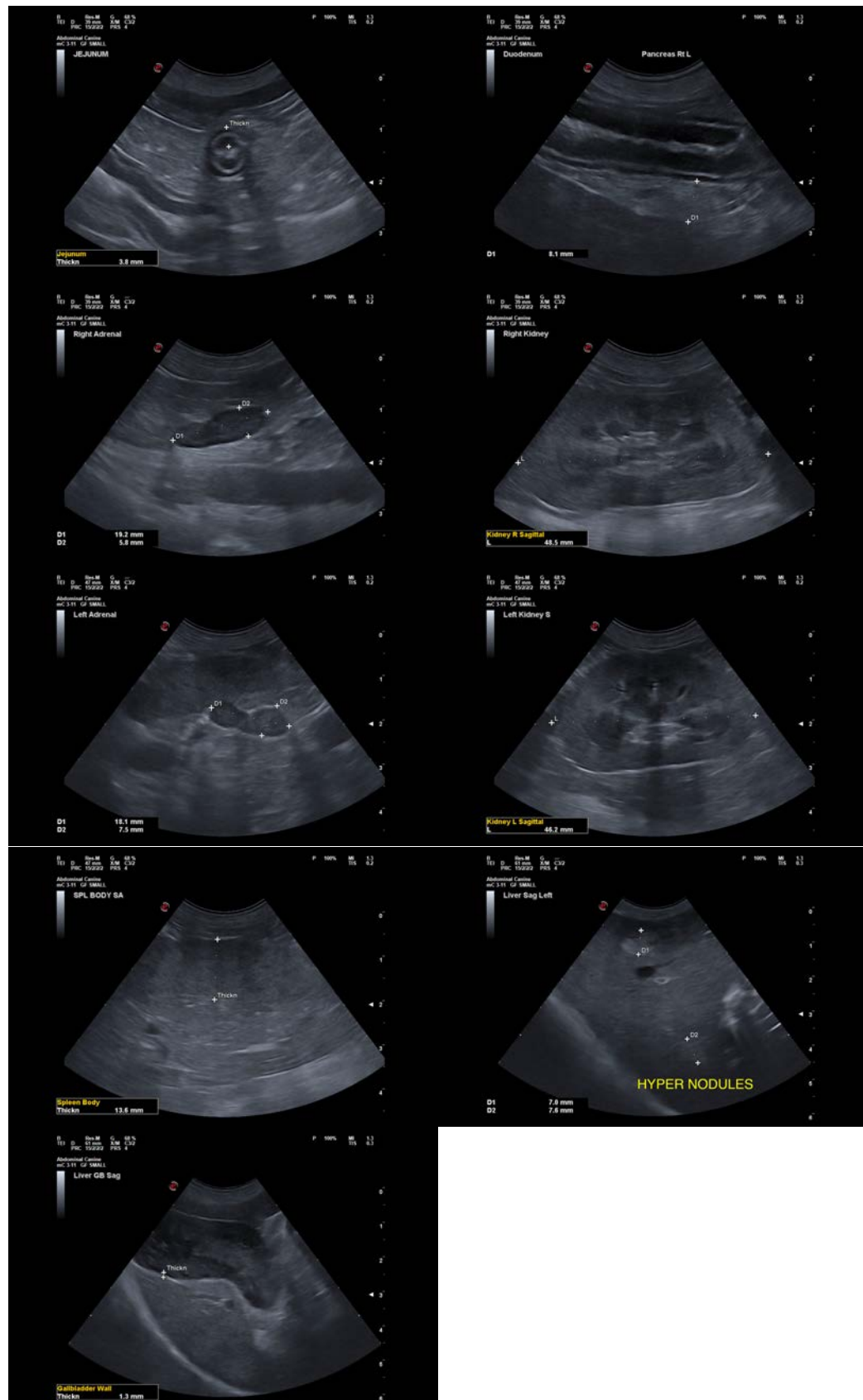
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**The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.**

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.

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