



## PATIENT

Foxy Brown

## PRESENTING CLINICAL SIGNS

## SPECIES

Canine

HR113, Grade 3-4 heart murmur first noted in 2018. No previous echo performed. No recent chest radiographs. Placed on Pimobendan by another vet in May 2022. Current dose of Pimo 2.5mg PO BID. Systolic BP in May 2022 was 101. Decreased appetite yesterday, and suspected regurgitation. NO sedation

## BREED

Smooth Coat  
Chihuahua Terrier X

Abnormal PE/Chem/CBC/UA Results: Lab work performed; ALT 768, ALP 1967, AST 132, T bili 1, Crea 1.8.

## ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN

### Urinary System

## SEX

Spayed Female

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.

## AGE

11 Years

The left kidney has a normal shape and size (4.26 cm). Overall echogenicity is slightly hyperechoic with poor corticomedullary distinction and a typical 1:3 cortex:medulla ratio. There is no evidence of perinephric inflammation or effusion. There are diffuse pinpoint hyperechoic mineralizations throughout the parenchyma of the kidney, and occasional small non-obstructive nephroliths. There is no evidence of pyelectasia, infarcts or hydroureter. Renal vasculature is normal.

## WEIGHT

14.94 Pounds

The right kidney has a normal shape and size (3.93 cm) with minimal pinpoint non-obstructive nephroliths. Overall echogenicity is slightly hyperechoic with poor corticomedullary distinction and a typical 1:3 cortex:medulla ratio. There is no evidence of perinephric inflammation or effusion. There is no evidence of pyelectasia, infarcts or hydroureter. Renal vasculature is normal.

## INTERPRETED BY

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

### Adrenal Glands

The left adrenal gland is normal in size measuring 0.44 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.

## IMAGING BY

Loetitia Saint-Jacques,  
LVT

The right adrenal gland appears somewhat enlarged, measuring 1.0 cm at the cranial pole, 0.68 cm at the caudal pole, and 1.91 cm in length. It is observed in its normal position between the cranial aspect of the right kidney and the caudal vena cava. It is somewhat irregular in appearance in that it is heterogeneous and ill-defined with a "plump" appearance. Findings are concerning for a possible right adrenal mass. There is no obvious evidence of vascular invasion.

## HOSPITAL NAME

VCA Lakeside AH

### 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. There is a hypoechoic nodule visualized measuring 0.99 cm x 1.68 cm. It mildly deviates the splenic capsule. Additionally, there is a poorly defined mixed echogenic lesion measuring 0.90 cm.

## REFERRING VET

Dr. Parke

### Liver

The liver is subjectively normal in size, and echogenicity with smooth peripheral margins. The parenchyma is heterogenous in echotexture with subtle, indistinct focal mottling. Much of the

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visualized intrahepatic biliary tract is mineralized and hyperechoic. No focal nodules or cystic lesions are observed. No focal nodules or cystic lesions are observed.

**SPECIES**

Canine

The gallbladder is large and distended with a small amount of echogenic intraluminal debris. The wall is hyperechoic and appears thickened, measuring at 0.36 cm with some surrounding inflammation. The common bile duct is not visualized.

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Smooth Coat  
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**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.

**SEX**

Spayed Female

The visualized areas of duodenum, jejunum and ileum have a uniform diameter with minimal fluid distension. Wall thickness is increased (enter measurement if given). Bowel loops follow a typical curvilinear path. Some areas have reduced detail of wall layering. The duodenum appears irregular with some mucosal speckling. Duodenum wall measured 0.41 cm. Jejunum wall measured 0.37 cm. Visualized peristalsis appears appropriate. There were no focal lesions consistent with obstruction or a mass effect observed

**AGE**

11 Years

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.

**WEIGHT**

14.94 Pounds

**Pancreas**

The pancreas is large and hypoechoic to surrounding mesentery. There is no evidence of nodules or cystic lesions. There is evidence of regional mesenteric inflammation. Consistent with moderate pancreatitis.

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Kathleen Sennello DVM,  
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(Small Animal Internal  
Medicine)

**Free Abdomen**

There is a scant amount of free abdominal fluid. There are occasional enlarged mesenteric lymph nodes measuring 0.58 cm and 0.84 cm. The omentum is generally of increased echogenicity, particularly in the cranial abdomen, in the area of the pancreas and gallbladder.

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**ULTRASONOGRAPHIC FINDINGS**

**HOSPITAL NAME**

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- Decreased corticomedullary distinction in both kidneys with small non-obstructive nephroliths and left-sided punctate mineralizations – Mild loss of corticomedullary distinction in both kidneys could be consistent with chronic degenerative disease or interstitial nephrosis. The hyperechoic mineralized foci observed at the corticomedullary junction of the left/right kidney are consistent with small, non-obstructive nephroliths.

**REFERRING VET**

Dr. Parke

- Two splenic lesions – One hypoechoic nodule, one ill-defined hypoechoic lesion. Differentials include lymphoid hyperplasia, extramedullary hematopoiesis, infiltrative neoplasia, inflammation, other. Cytology or histopathology would be necessary to get a definitive diagnosis.

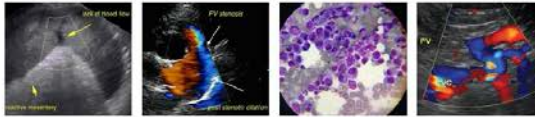
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- Hypoechoic, prominent pancreas surrounded by hyperechoic mesentery – The pancreatic changes are most consistent with moderate pancreatitis/pancreatic inflammation.

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Recommend fPLI testing and continued monitoring for improvement or possible development of a pancreatic abscess. Consider fine needle aspirate if not improving.

## SPECIES

Canine

- 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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- Mineralized intrahepatic bile ducts – significance currently unknown. Recommend continued monitoring.

## SEX

Spayed Female

- Prominent, distended gallbladder with hyperechoic, thickened wall – concerning for possible cholecystitis. There is inflammation surrounding the gallbladder, but some of this may be secondary to the local pancreatitis. Recommend close monitoring of the gallbladder and liver enzymes.

## AGE

11 Years

- Ill-defined mixed echogenic, large right adrenal gland – concerning for a possible right adrenal mass. Right adrenomegaly could be consistent with neoplasia (e.g., adenoma, carcinoma, pheochromocytoma), hyperplasia, inflammation, other.

## WEIGHT

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- Thickened small intestine with mucosal speckling – Bright mucosal speckling has been proposed to represent dilated lacteals or focal accumulation of mucus, cellular debris etc.. in the mucosal crypts of the small intestine.

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(Small Animal Internal  
Medicine)

- Scant free abdominal fluid with prominent mesenteric lymph nodes – 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

Overall, the cranial abdomen is very inflamed and hyperechoic. The pancreas is largely the source for this, as it is hypoechoic and large. Much of the associated structures such as the duodenum appear secondarily edematous and irritated. The gallbladder additionally appears very distended, and the wall is hyperechoic and irregular. This is concerning for possible concurrent cholecystitis or post-hepatic obstruction. Recommend continued monitoring with ultrasound and following bloodwork values while treating for cholecystitis with Ursodiol and antibiotics.

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LVT

## HOSPITAL NAME

VCA Lakeside AH

There are two hypoechoic nodules visualized within the spleen. I suspect these are incidental and not related to the current acute illness, but continued monitoring and possible fine needle aspirate are recommended in the near future.

## REFERRING VET

Dr. Parke

Consider three view thoracic radiographs to rule out concurrent thoracic disease/involvement.

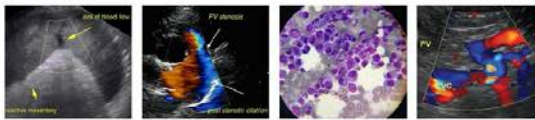
The right adrenal gland appears enlarged and irregular. It is somewhat ill-defined, so the margins are difficult to follow. These are my recommendations for an abnormal adrenal gland:

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- If signs of cushings are present, consider adrenal function testing. I prefer an ACTH stimulation test combined with an adrenal panel to the University of Tennessee's endocrine lab to look for atypical adrenal hormones as well as cortisol. (other testing can suffice)

**SPECIES**

Canine

- If adrenal dependent cushings is suspected and supported by adrenal function testing consider medical therapy with lysodren or trilostane or consider surgical removal (recommend referral to a board certified veterinary surgeon and possible pre op CT)

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- Recommend blood pressure evaluation-if hypertensive consider testing catecholamine levels for a possible pheochromocytoma

**SEX**

Spayed Female

- If no symptoms of cushings are present, consider either referral for surgery or continued monitoring with ultrasound (in 3-4 months).

**AGE**

11 Years

The cause and nature of the abnormal mineralization to the biliary tree and left kidney are unknown at this time. Continued monitoring is warranted. This can be incidental in some individuals.

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For now, I would recommend aggressive medical management for pancreatitis and cholecystitis with continued monitoring of bloodwork and the appearance of the gallbladder on ultrasound if liver enzymes are continuing to rise.

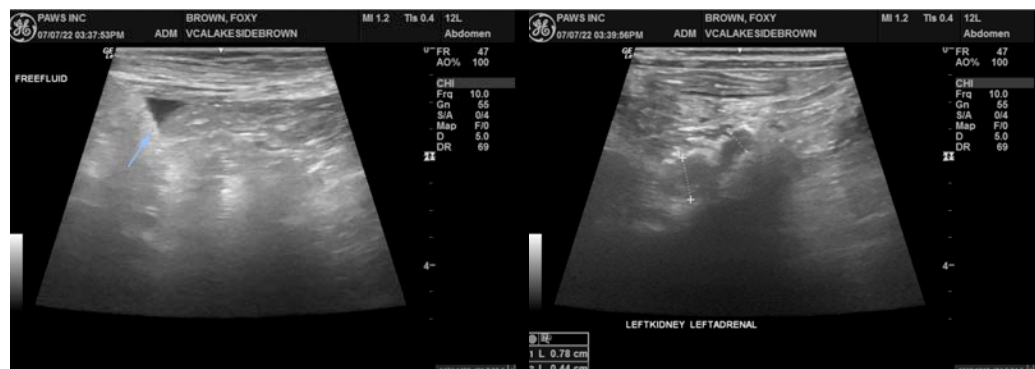
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Medicine)

Further evaluation of the spleen, adrenal gland, etc. should be considered once this patient is feeling better.

**IMAGING BY**

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LVT



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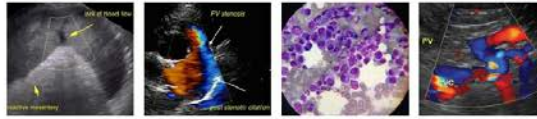
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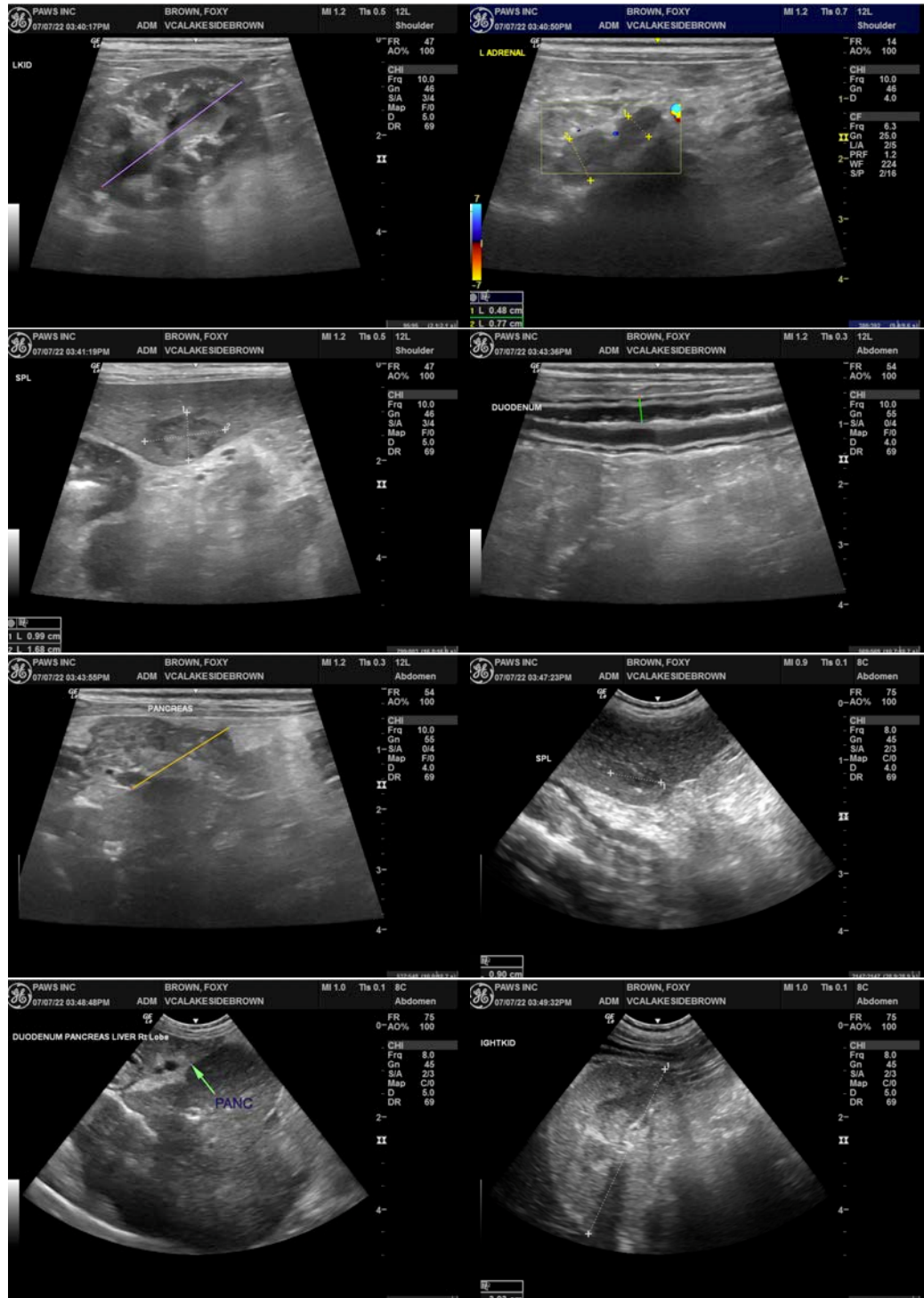
Dr. Parke

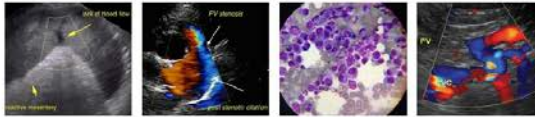
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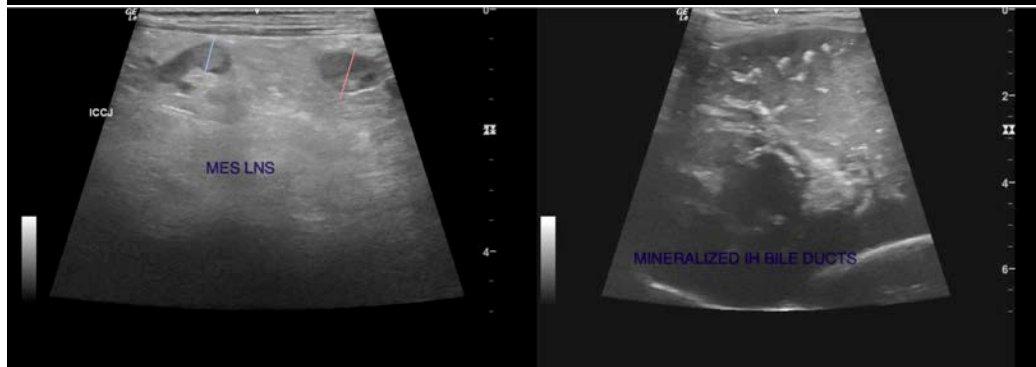
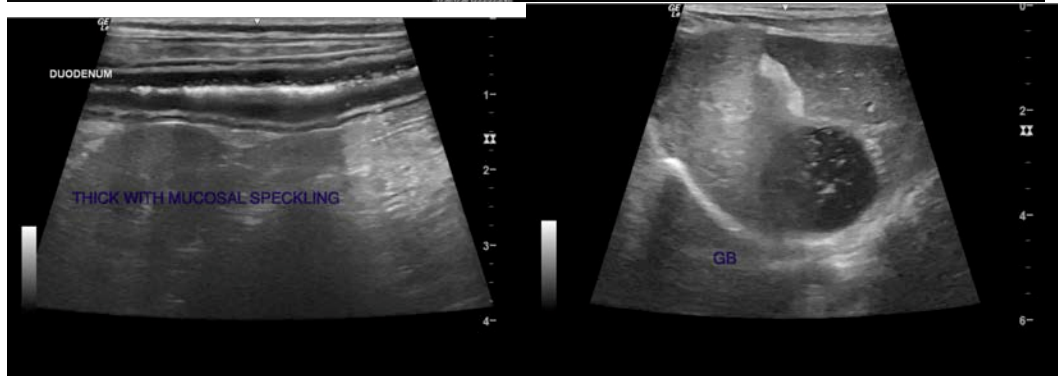
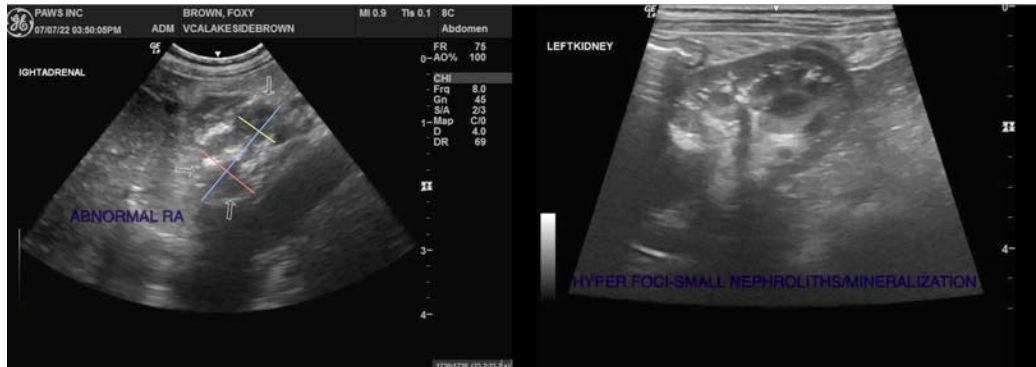
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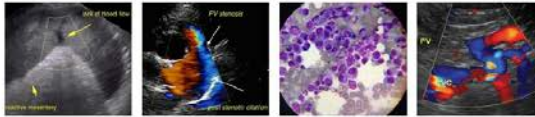
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Portable Animal Wellness Sonography, Inc.

IMAGING PERFORMED BY

pawsonography@gmail.com  530-786-8340

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Canine

## BREED

Smooth Coat  
Chihuahua Terrier X

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

## SEX

Spayed Female

## AGE

11 Years

## WEIGHT

14.94 Pounds

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