

**PATIENT PRESENTING CLINICAL SIGNS**

**Mocha Stover**  
Historical hypercalcemia since 2019. Last Ca that was measured was 14.0 in 3/2022. Previous iCa and PTH labs showed elevated iCa and low normal PTH most consistent with primary hyperparathyroidism. O has declined further diagnostics but most recently P developed diarrhea and not eating. Calcium was too high to read on in house machine on Monday, alp 232, rest wnl. Supportive care has resolved diarrhea and anorexia but O now interested in pursuing neck US. P has the appearance of Cushingoid dog as well but previous LDDS test did not support this. P is not pu/pd/pp. Rectal Normal MEDS metronidazole 100mg po bid, cerenia 16 mg po sid

**Canine**

**Dachshund**  
Abnormal PE/Chem/CBC/UA Results: ALP 232 (20-150) Ca - too high to read in house rest wnl

**SEX ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN & THYROID**

**Spayed Female**  
*Urinary System*

**15 Years**  
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, or masses. There is a small amount of fine hyperechoic mineralized debris in the dependent portion of the urinary bladder, most consistent with small stones/sandy debris.

**7.7 kg**  
The left kidney has a normal shape and size (4.04 cm) with pinpoint non-obstructive nephroliths and numerous small cortical cysts. 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, infarcts or hydroureter. Renal vasculature is normal.

**INTERPRETED BY**

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

The right kidney has a normal shape and size (4.33 cm) with pinpoint non-obstructive nephroliths and numerous small cortical cysts. 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, infarcts or hydroureter. Renal vasculature is normal.

**IMAGING PERFORMED BY**

Loetitia Saint-Jacques, LVT

*Adrenal Glands*

The left adrenal gland is “plump”, measuring 0.84 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.

**HOSPITAL NAME**

Desert Hills AH

The right adrenal gland is large and abnormal in appearance, measuring 0.75 cm at the cranial pole, 0.68 cm at the caudal pole, and 2.41 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 abnormal in appearance in that there are two hyperechoic nodules associated with the adrenal gland, one towards the cranial aspect measuring 0.49 cm x 0.59 cm and a discrete hyperechoic nodule in the middle part of the adrenal measuring 0.73 cm x 0.66 cm. No evidence of vascular invasion is visualized.

**REFERRING VET**

Dr. Michelle Caldwell

*Spleen*

**INVOICE**

43843

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**

7/6/23



**PATIENT** *Liver*

Mocha Stover

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

**SPECIES**

Canine

The gall bladder lumen is significantly distended. Some areas of the wall appear mildly thickened (0.24 cm) with adherent debris. There is a large amount of primarily non-organized echogenic debris. The bile duct appears dilated with a thickened wall. The diameter of the bile duct is 0.58 cm with a wall thickness of 0.10 cm. This can be followed to the duodenal papilla with no evidence of an overt obstruction.

**BREED**

Dachshund

**Gastrointestinal**

**SEX**

Spayed Female

The visible stomach wall is normal in thickness and layering. The lumen of the stomach is mildly distended with echogenic non-shadowing luminal contents and gas consistent with normal ingesta. There is no evidence of obstruction, foreign material or infiltrative disease. Pyloric outflow tract appears patent.

**AGE**

15 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 0.46 cm. Jejunum wall measures 0.25 cm. Visualized peristalsis appears appropriate. There were no focal lesions consistent with obstruction or a mass effect observed.

**WEIGHT**

7.7 kg

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  
Medicine)

**Pancreas**

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.

**IMAGING PERFORMED BY**

Loetitia Saint-Jacques,  
LVT

**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.

**HOSPITAL NAME**

Desert Hills AH

**Cervical Region**

The left thyroid gland appears normal in size measuring 0.35 cm x 0.95 cm in the sagittal view. There is a hypoechoic nodule visualized in the cranial aspect of the left thyroid measuring 0.39 cm x 0.42 cm, most consistent with an enlarged parathyroid gland.

**REFERRING VET**

Dr. Michelle Caldwell

The right thyroid appears normal, measuring approximately 0.28 cm x 0.88 cm in the sagittal view. On most views, there is a very small parathyroid visualized in the caudal pole measuring 0.17 cm, which is likely within normal limits. On one sagittal view there is a hypoechoic structure towards the cranial aspect measuring 0.34 cm x 0.21 cm, possibly consistent with a mildly enlarged parathyroid gland.

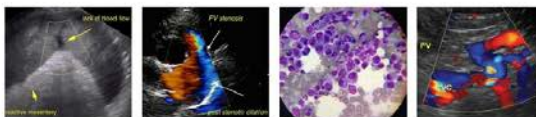
**INVOICE**

43843

**DATE**

7/6/23

The salivary glands appear within normal limits. There is a prominent lymph node visualized in the left cervical region measuring 0.54 cm x 1.39 cm.


**PATIENT ULTRASONOGRAPHIC FINDINGS**
**PATIENT**  
 Mocha Stover

**SPECIES**

Canine

**BREED**

Dachshund

**SEX**

Spayed Female

**AGE**

15 Years

**WEIGHT**

7.7 kg

**INTERPRETED BY**

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

**IMAGING PERFORMED BY**

 Loetitia Saint-Jacques,  
 LVT

**HOSPITAL NAME**

Desert Hills AH

**REFERRING VET**

Dr. Michelle Caldwell

**INVOICE**

43843

**DATE**

7/6/23

- Suspect left-sided parathyroid adenoma, questionable mild right-sided parathyroid enlargement
- Hyperechoic shadowing debris visualized in the dependent portion of the urinary bladder – Findings are most consistent with sandy debris/small stones. Recommend urinalysis and culture.
- Decreased corticomedullary distinction in both kidneys with numerous cortical cysts and pinpoint non-obstructive nephroliths – Mild loss of corticomedullary distinction in both kidneys could be consistent with chronic degenerative disease or interstitial nephrosis.
- Prominent, mottled right limb of the pancreas – The pancreatic changes are most consistent with mild pancreatitis or a recent episode of pancreatic inflammation.
- Severely distended gallbladder with coarse intraluminal debris and a mildly thickened gallbladder wall – A large amount of debris is evident in the gall bladder with no evidence of a mucocele or associated inflammation at this time. This could represent an early mucocele or cholestasis, with minimal evidence of associated inflammation at this time. Continued monitoring of labwork and ultrasound are warranted for progression of this lesion. Ursodiol therapy could be considered.
- Thickened bile duct with a thickened wall – Findings are likely consistent with cholecystitis.
- Prominent right limb of the pancreas – The pancreatic changes are most consistent with mild pancreatitis or a recent episode of pancreatic inflammation.
- Hyperechoic nodules visualized within the right adrenal gland – The significance of this is uncertain. This could represent benign lesions or early metastatic/neoplastic lesions.

**INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS**

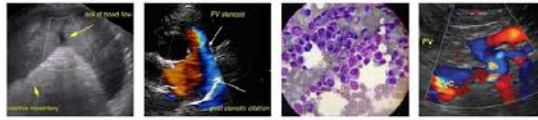
Based on the history provided, these findings are consistent with a patient with hyperparathyroidism. There is likely a parathyroid adenoma within the left parathyroid gland. There is an adenoma in the left parathyroid. There is questionable enlargement on views of the right parathyroid, which are not repeatable in all images. Recommend consultation with a veterinary surgeon and possible exploration of the region.

The changes with the kidneys are consistent with chronic progressive renal disease. Recommend urinalysis and blood pressure. Additionally, a culture is recommended to further evaluate the kidneys and the debris visualized in the urinary bladder.

There is a large amount of irregular coarse debris visualized within the gallbladder with mild thickening of the gallbladder wall, dilation of the bile duct and thickening of the bile duct wall. These changes are consistent with cholecystitis and possibly even an early atypical mucocele.

Recommend medical management for cholecystitis with antibiotics and Ursodiol. Recommend continued monitoring of the gallbladder and liver values and concurrent probiotic use with the antibiotics prescribed (spaced at least two hours between administration).

There are hyperechoic nodules visualized within the right adrenal gland. The significance of these nodules is currently unclear. These could be representative of benign hyperplastic nodules or early neoplastic nodules. Recommend a blood pressure evaluation. If hypertension is present, consider



**PATIENT**

Mocha Stover

**SPECIES**

Canine

**BREED**

Dachshund

**SEX**

Spayed Female

**AGE**

15 Years

**WEIGHT**

7.7 kg

**INTERPRETED BY**

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

**IMAGING PERFORMED BY**

Loetitia Saint-Jacques,  
LVT

**HOSPITAL NAME**

Desert Hills AH

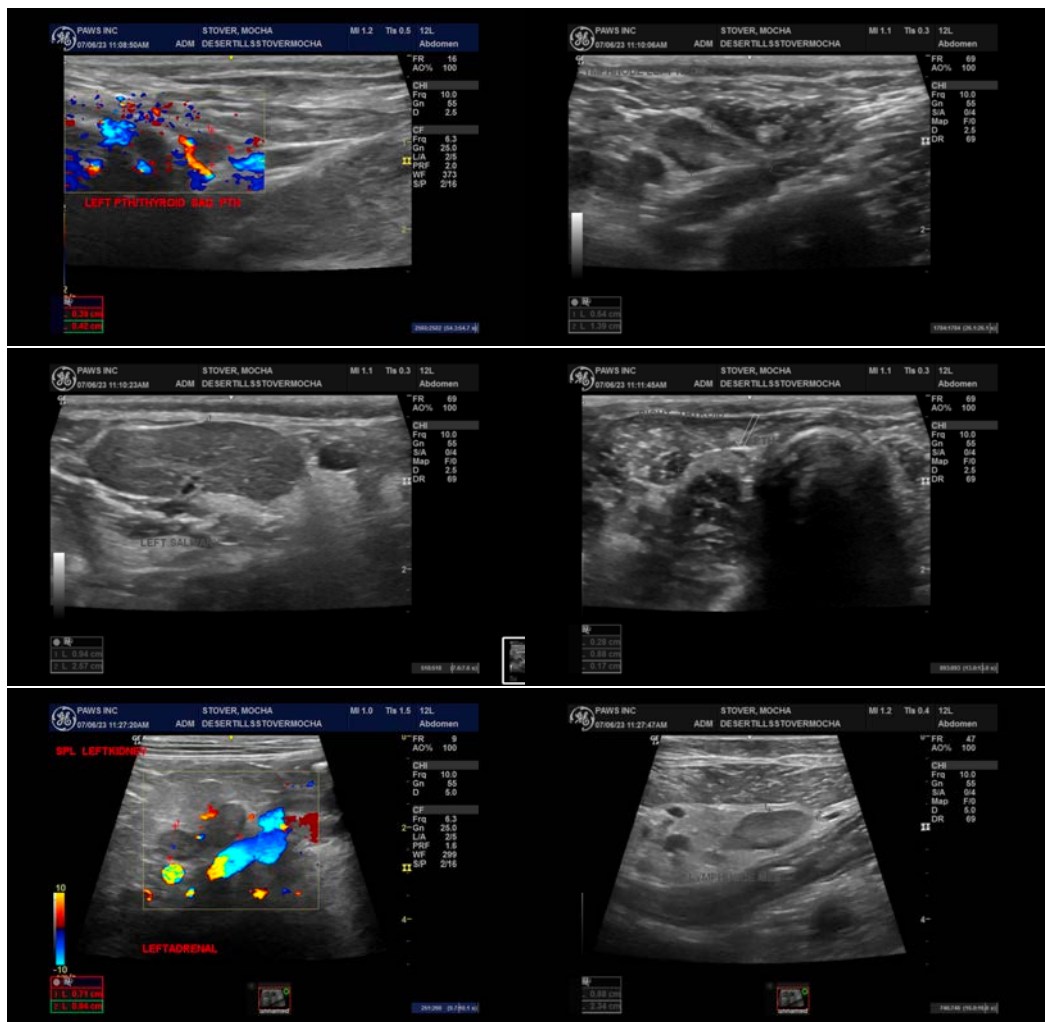
**REFERRING VET**

Dr. Michelle Caldwell

measuring catecholamine levels. Otherwise, I would recommend continued monitoring of the adrenal with ultrasound looking for possible progression of this lesion.

Recommend three view thoracic radiographs to evaluate for possible concurrent thoracic disease/involvement.

For parathyroid surgery, recommend referral to a veterinary surgeon with 24-hour care, as post-operative management in these cases can be very challenging, particularly in patients with chronic persistent hypercalcemia, as post-operative hypocalcemia can be a common and frustrating complication of the disease process.

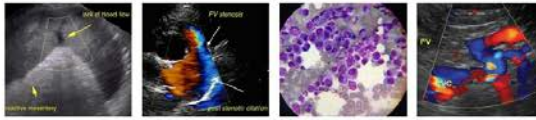


**INVOICE**

43843

**DATE**

7/6/23



**PATIENT**

Mocha Stover

**SPECIES**

Canine

**BREED**

Dachshund

**SEX**

Spayed Female

**AGE**

15 Years

**WEIGHT**

7.7 kg

**INTERPRETED BY**

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

**IMAGING PERFORMED BY**

Loetitia Saint-Jacques,  
LVT

**HOSPITAL NAME**

Desert Hills AH

**REFERRING VET**

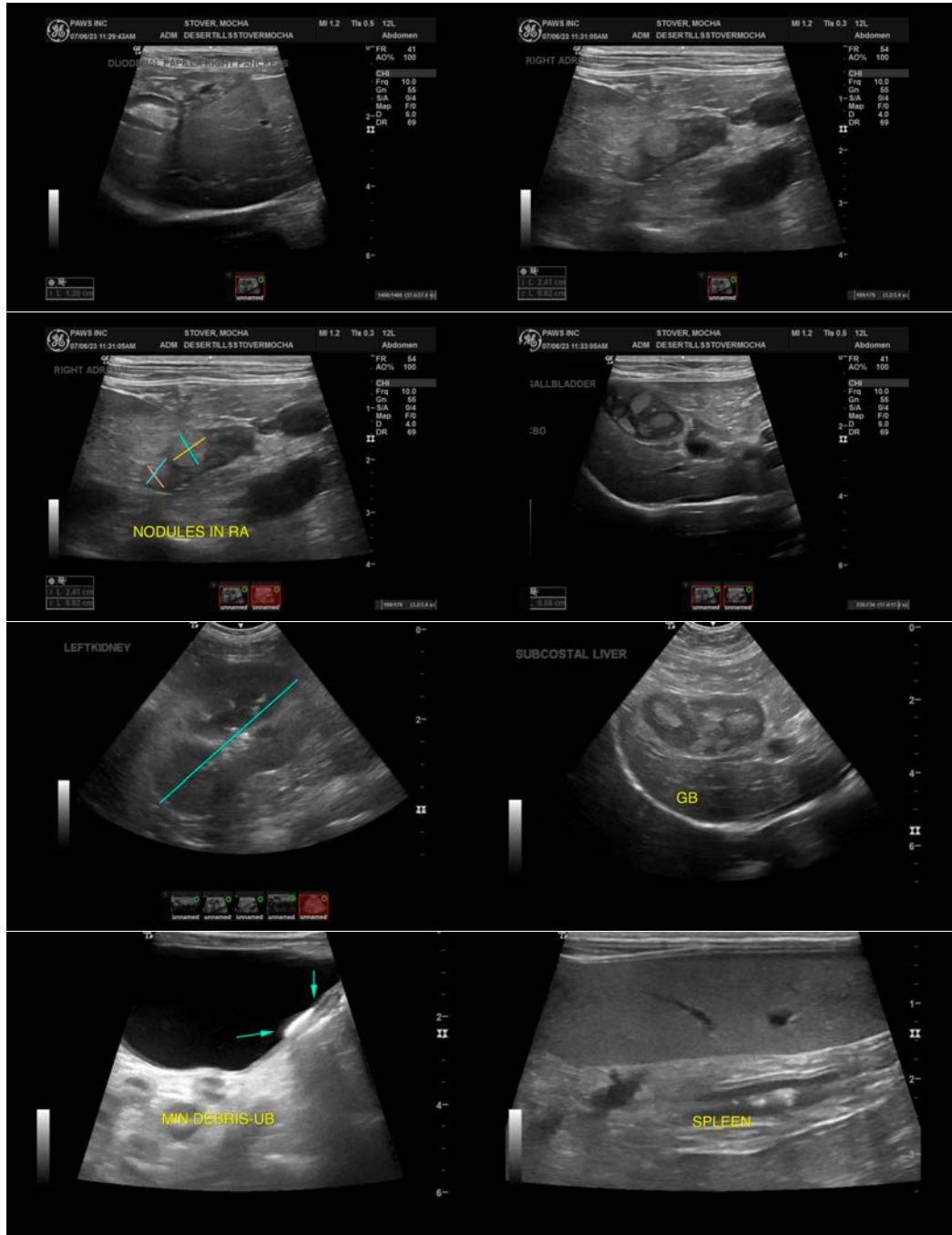
Dr. Michelle Caldwell

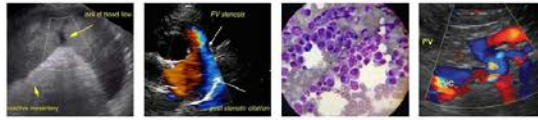
**INVOICE**

43843

**DATE**

7/6/23





**PATIENT**

Mocha Stover

**SPECIES**

Canine

**BREED**

Dachshund

**SEX**

Spayed Female

**AGE**

15 Years

**WEIGHT**

7.7 kg

**INTERPRETED BY**

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

**IMAGING  
PERFORMED BY**

Loetitia Saint-Jacques,  
LVT

**HOSPITAL NAME**

Desert Hills AH

**REFERRING VET**

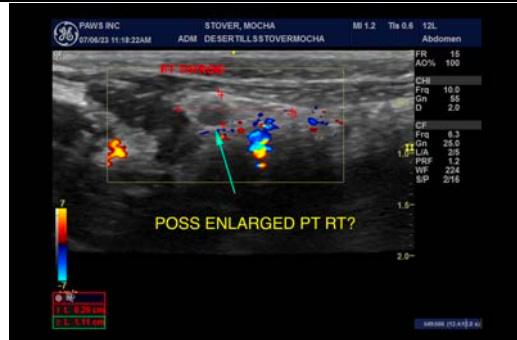
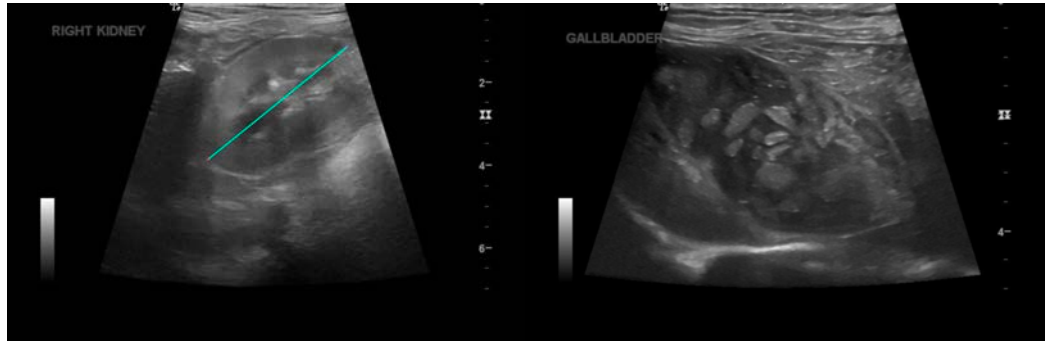
Dr. Michelle Caldwell

**INVOICE**

43843

**DATE**

7/6/23



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)

info@sonopath.com