

**PATIENT PRESENTING CLINICAL SIGNS**

**PATIENT** Poppy Smith  
**SPECIES** Canine  
History: was in for spay surgery but on bloodwork noted changes to liver, owner opted to postpone surgery and work up but due to finances has not been able to work up fully until now (thus no repeated bloodwork as of yet) bruises easily after venipuncture elevated bile acids meds: aventi liver (not in last two months)  
Abnormal PE/Chem/CBC/UA Results: From January: ALT (205) and K elevated, low globulins Bile acids pre 4.0 Bile Acids post 146 Please see attached BW

**BREED ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN**  
*Urinary System*

Chihuahua

The **urinary bladder**, trigone, and pelvic urethra presented normal thicknesses and normal tone. The ureters were not visible which is normal. No uroliths or sediment were visualized and anechoic urine was present. No evidence of inflammatory or neoplastic changes was noted. Ureteral papillae were normal.

**SEX**

Intact female

The **kidneys** were normal in size and contour with slight pinpoint mineralization noted. The left kidney measured 3.06 cm. The right kidney measured 3.42 cm.

**AGE**

3 years

*Adrenal Glands*

**WEIGHT**

2.6 kg

Both **adrenal glands** were visualized and recognized as having normal shape, size, position and echogenicity for this breed. The phrenic vasculature, glandular echogenicity and detail were unremarkable. Capsule, cortex, and medullary definition were normal for this age patient. The right adrenal gland measured 1.66 x 1.03 at the cranial pole and 0.4 cm at the caudal pole. The left adrenal gland measured 1.2 x 0.39 cm at the caudal pole and 0.4 cm at the cranial pole.

**INTERPRETED BY**

Eric Lindquist, DMV  
DABVP, Cert. IVUSS

*Spleen*

**IMAGING PERFORMED BY**

Kelly Reshny, RVT

The **spleen** presented a smooth homogeneous parenchyma hyperechoic to liver and renal cortical parenchyma. The capsule was smooth without noticeable expansion or deviation from within the spleen or adjacent pathology. The splenic vasculature demonstrated normal volume without signs of congestion or thrombosis. No sonographic evidence of acute or chronic inflammatory, neoplastic, or infarctual changes was noted.

**HOSPITAL NAME**

Oxford County VC

*Liver*

**REFERRING VET**

Dr. Halfon

The **liver** was mildly subnormal in size with normal hepatic vascular volume. There was no evidence of intrahepatic shunting. The portal vein to vena cava ratio was 1:1 and measured 0.5 cm each. The gallbladder presented acceptably thin walls with primarily anechoic content. The cystic and common bile ducts were normal.

**INVOICE**

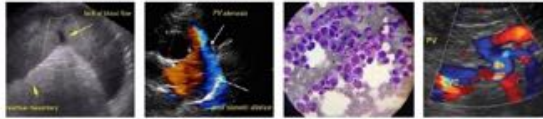
39630

*Gastrointestinal*

**DATE**

9/27/22

Examination of the **gastrointestinal tract** revealed a stomach and intestine free of stasis, of normal wall thickness, acceptable curvilinear mural detail, and peristaltic activity. Small and large intestine



**PATIENT**

demonstrated normal luminal chyme and stool consistency respectively. No obstructive or overt infiltrative disease was noted. No associated abnormal lymphatic activity was noted.

Poppy Smith

**SPECIES**

**Pancreas**

Canine

The base and limbs of the **pancreas** were observed to be largely isoechoic to surrounding omental fat. Pancreatic duct and capsular contour were acceptably normal and parenchyma respected normal curvilinear patterns. No overt evidence of active inflammatory or neoplastic disease was noted.

**BREED**

Chihuahua

**Free Abdomen**

**SEX**

Images of the regions that are suspected to be potential hernias were fat/lipomatous accumulations. No peritoneal defects or herniated viscera were present.

Intact female

**AGE**

**ULTRASONOGRAPHIC FINDINGS**

3 years

Microhepatica without macroscopic shunting.

**WEIGHT**

**INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS**

2.6 kg

Given the bile acid elevations portal hypoplasia/microvascular dysplasia is likely. Surgical biopsies at the time of ovariohysterectomy would be warranted in this patient to confirm suspicion of portal hypoplasia. Coagulation panel is warranted given the patient's history.

**INTERPRETED BY**

**Royal Canin Hepatic Support diet or Hills L/D, Metronidazole (7.5 mg/kg PO bid) over the next 14 days, Lactulose (Oral: 3.1-3.7 g/5 ml lactulose in a syrup base) long term to target 2-3 soft stools/day, with a high-quality protein supplement of minor amount of yogurt or cheddar cheese. Monitor bile acids, with attention paid to dropping albumin, BUN or cholesterol. SAME and nutraceuticals as needed. Ursodiol (10-15 mg/kg p.o. q24h) can be considered as hepatoprotectant and to enhance bile flow. Zinc serum level keep between 200–500 ug/dl. If deficient then Tx zinc acetate 1-3 mg/kg/day. Gastrointestinal protectants are recommended if the patient is anorexic.**

Eric Lindquist, DMV  
DABVP, Cert. IVUSS

**IMAGING PERFORMED BY**

Kelly Reshny, RVT

**HOSPITAL NAME**

Oxford County VC

**REFERRING VET**

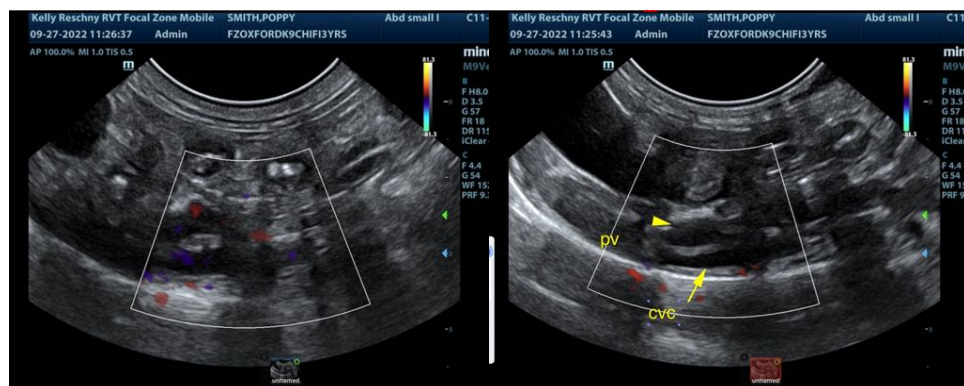
Dr. Halfon

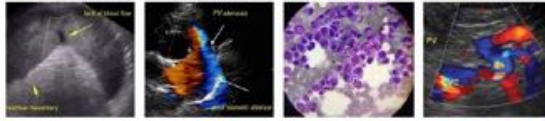
**INVOICE**

39630

**DATE**

9/27/22





**PATIENT**

Poppy Smith

**SPECIES**

Canine

**BREED**

Chihuahua

**SEX**

Intact female

**AGE**

3 years

**WEIGHT**

2.6 kg

**INTERPRETED BY**

Eric Lindquist, DMV  
DABVP, Cert. IVUS

**IMAGING  
PERFORMED BY**

Kelly Reshny, RVT

**HOSPITAL NAME**

Oxford County VC

**REFERRING VET**

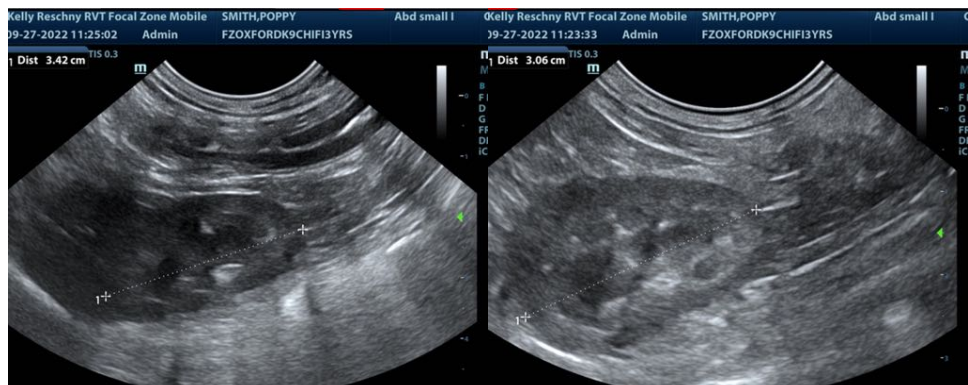
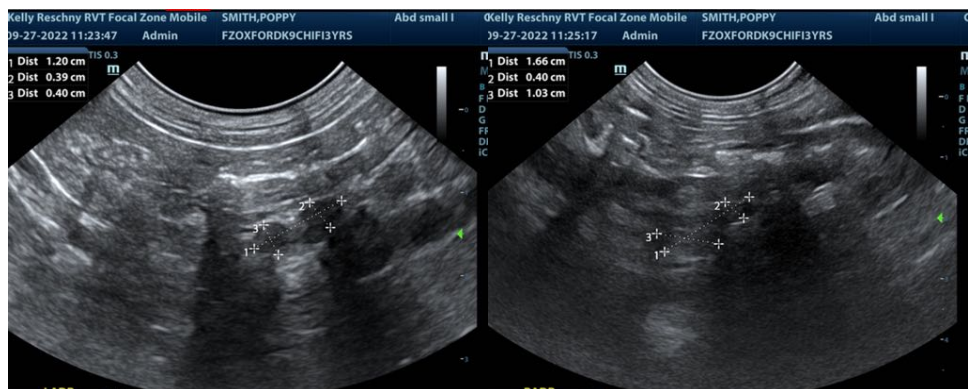
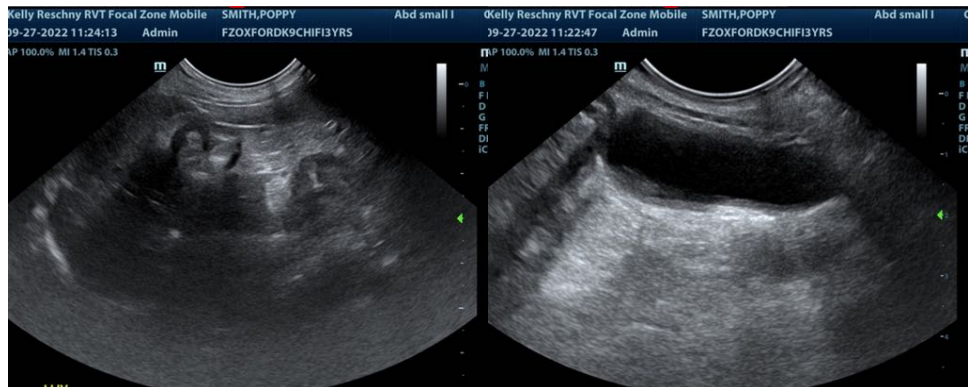
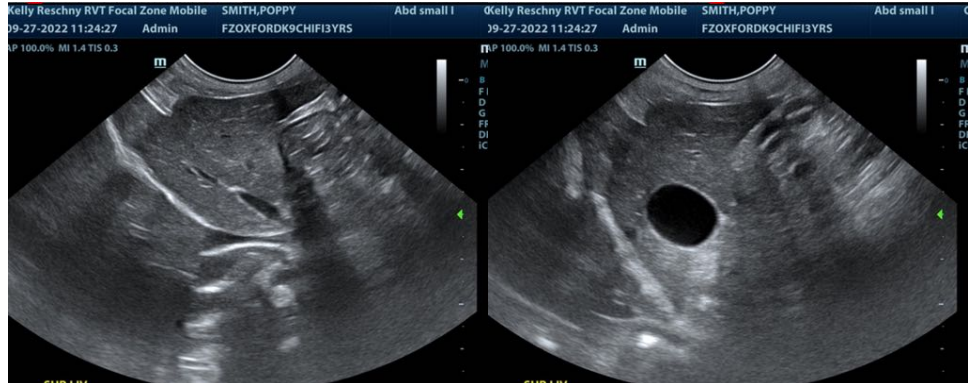
Dr. Halfon

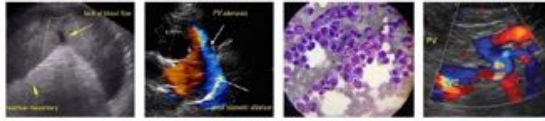
**INVOICE**

39630

**DATE**

9/27/22





**PATIENT**

Poppy Smith

**SPECIES**

Canine

**BREED**

Chihuahua

**SEX**

Intact female

**AGE**

3 years

**WEIGHT**

2.6 kg

**INTERPRETED BY**

Eric Lindquist, DMV  
DABVP, Cert. IVUSS

**IMAGING  
PERFORMED BY**

Kelly Reshny, RVT

**HOSPITAL NAME**

Oxford County VC

**REFERRING VET**

Dr. Halfon

**INVOICE**

39630

**DATE**

9/27/22

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.

**Eric Lindquist**, DMV, DABVP, Cert. IVUSS, CEO of SonoPath.com  
Eric.Lindquist@SonoPath.com