

PATIENT PRESENTING CLINICAL SIGNS

Ripper Pomeroy Increased bile acids, ALT/ALP even after denamarin. Working diagnosis Portosystemic Shunt. MEDS: Denamarin 425mg SID

SPECIES

Canine

Abnormal PE/Chem/CBC/UA Results: ALT has increased to 315 (previously 239), ALP has increased to 299 (previously 241), Bile Acids Pre 139.5 (<13), post 418 (<25)

BREED

Shepherd X

ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN

Urinary System

SEX

Neutered Male

The **urinary bladder** revealed sand/small calculi accumulation up to 1.0 cm, non-obstructive. The pelvic urethra was imaged 3.0 cm beyond the cystourethral junction. The residual prostate measured 7.0 mm.

The **kidneys** were bilaterally swollen, measuring 7.6 cm on the right and 7.6 cm on the left. The kidneys appeared mildly hypervascular on color flow assessment.

AGE

20 Months

Adrenal Glands

WEIGHT

23.6 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 left adrenal gland measured 0.50 cm. The right adrenal gland measured 1.0 cm at the cranial pole and 0.70 cm at the caudal pole.

INTERPRETED BY

Eric Lindquist, DMV
DABVP, Cert. IVUSS

Spleen

The **spleen** was folded upon itself cranially and presented mild uniform enlargement.

Liver

IMAGING PERFORMED BY

Loetitia Saint-Jacques,
LVT

The **liver** was subnormal in size with increased portal markings, consistent with cholangitis and fibrosis. The gallbladder was unremarkable.

HOSPITAL NAME

Brighton Greens VH

There appears to potentially be an abnormal connection with right or central branch of the portal vein in intrahepatic fashion, as it appears to connect with the hepatic vein after the portal hilus. However, a separate abnormal vessel appears to be present measuring approximately 1.0 cm at maximum width with a distance of approximately 3.0 cm in the extrahepatic space. The position and contour would suggest gastro-caval shunt yet could not be considered.

REFERRING VET

Dr. Robin Janeway

Gastrointestinal

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

INVOICE

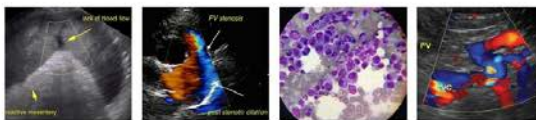
44561

Pancreas

DATE

8/10/23

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.



PATIENT *Free Abdomen*

Ripper Pomeroy Reactive mesenteric lymph node noted measuring 1.28 cm.

SPECIES **ULTRASONOGRAPHIC FINDINGS**

Canine

- Bladder sand/calculi
- Swollen kidneys
- Extrahepatic portosystemic shunt in a position and contour of gastro-caval shunt yet could not be confirmed. Possibility of small right divisional intrahepatic shunt concurrently.

BREED

Shepherd X

SEX

Neutered Male

AGE

20 Months

WEIGHT

23.6 kg

INTERPRETED BY

Eric Lindquist, DMV

DABVP, Cert. IVUSS

IMAGING PERFORMED BY

Loetitia Saint-Jacques, LVT

HOSPITAL NAME

Brighton Greens VH

REFERRING VET

Dr. Robin Janeway

INVOICE

44561

DATE

8/10/23

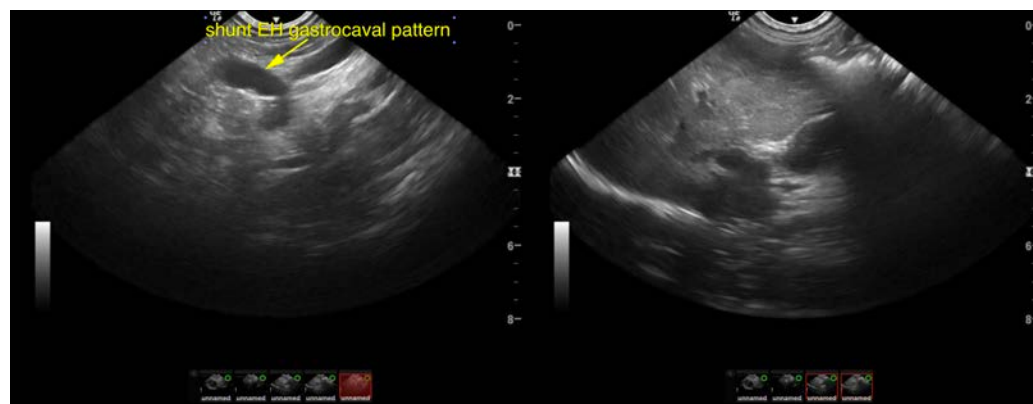
INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

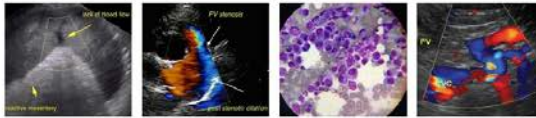
Recommend medical management for portosystemic shunting and elevated bile acids in this patient, given the bladder sand, swollen kidneys and microhepatica, followed by CT evaluation for surgical planning. The intrahepatic portal vein branching portion of the image set may be a normal variant, and I could not confirm a potential connection there such as a right divisional intrahepatic shunt. However, the extrahepatic abnormal vessel is evident. The exact termination of the vessel could not be made. CT with contrast is essential in this patient as the next step for confirmation and potential surgical planning. If surgical intervention is to be performed, then cystotomy, stone analysis and culture would also be indicated.

**Note that the portal vein to vena cava ratio was not typical of extrahepatic shunting, yet this is likely owing to the type of sedation utilized, which creates an abnormal passive congestion in the liver and alters the usual portal vein : vena cava : aortic ratio scheme that is necessary for portosystemic shunt evaluation from a sonographic standpoint.

Hepatic Support for Bile Acid Elevation +/- Hepatic Encephalopathy

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.





PATIENT

Ripper Pomeroy

SPECIES

Canine

BREED

Shepherd X

SEX

Neutered Male

AGE

20 Months

WEIGHT

23.6 kg

INTERPRETED BY

Eric Lindquist, DMV
DABVP, Cert. IVUSS

IMAGING PERFORMED BY

Loetitia Saint-Jacques,
LVT

HOSPITAL NAME

Brighton Greens VH

REFERRING VET

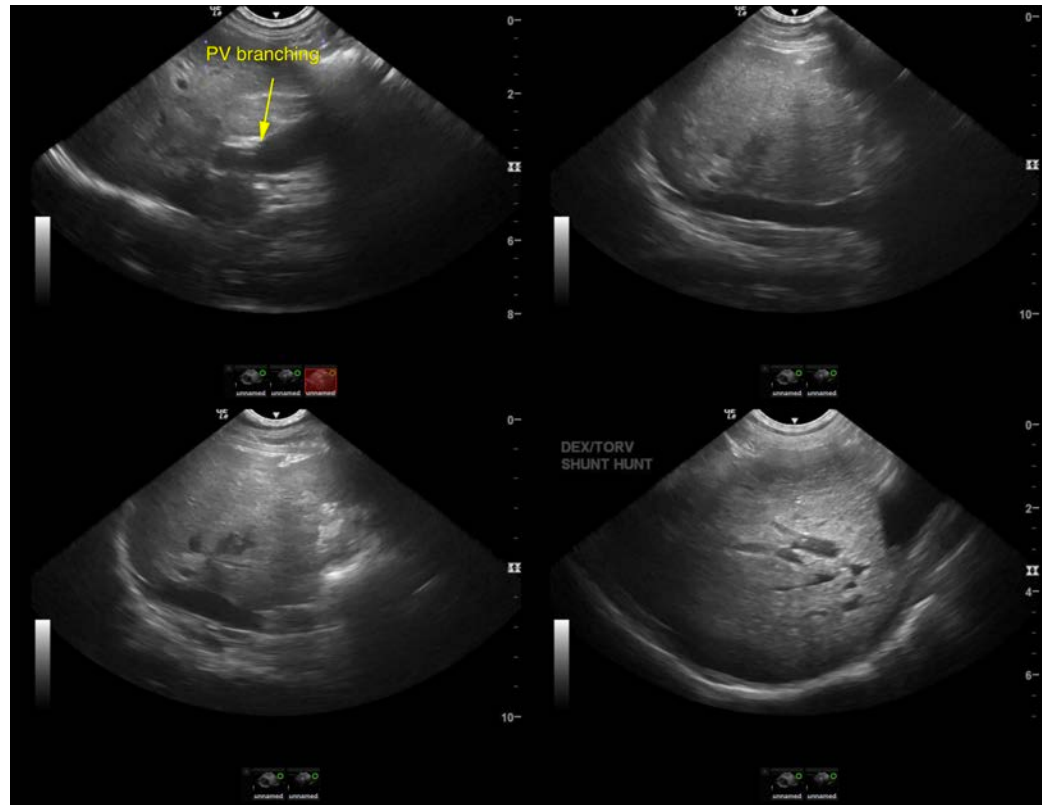
Dr. Robin Janeway

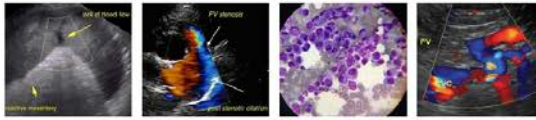
INVOICE

44561

DATE

8/10/23





PATIENT

Ripper Pomeroy

SPECIES

Canine

BREED

Shepherd X

SEX

Neutered Male

AGE

20 Months

WEIGHT

23.6 kg

INTERPRETED BY

Eric Lindquist, DMV
DABVP, Cert. IVUSS

IMAGING PERFORMED BY

Loetitia Saint-Jacques,
LVT

HOSPITAL NAME

Brighton Greens VH

REFERRING VET

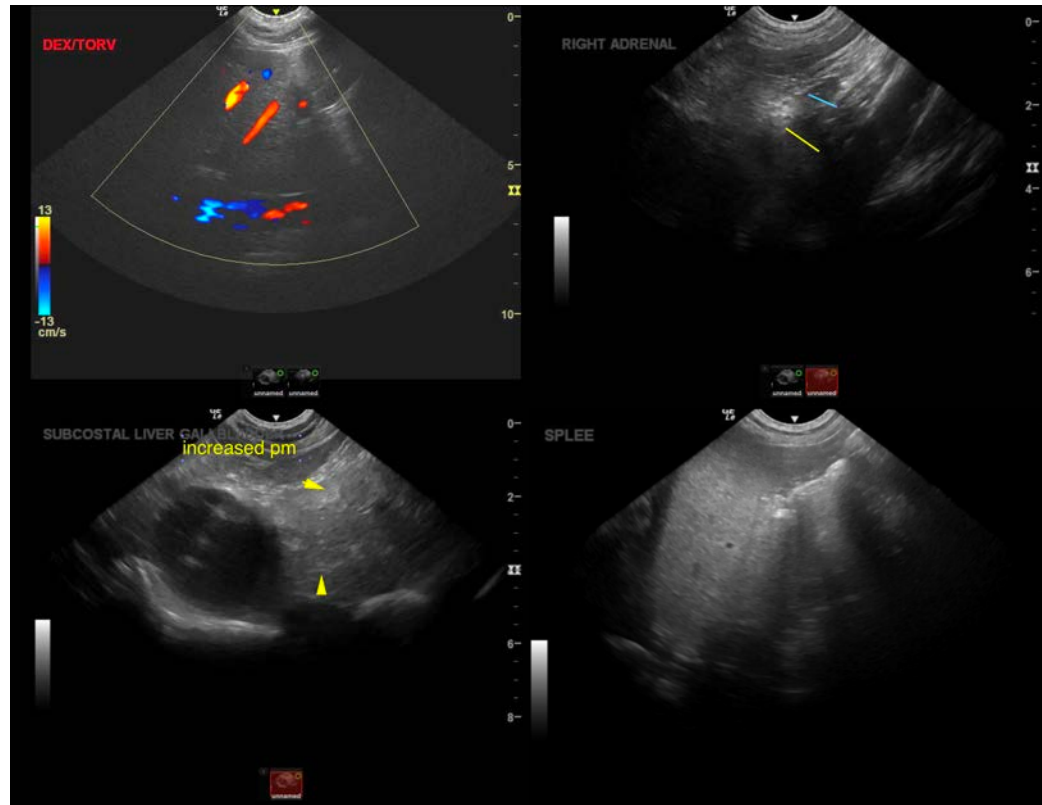
Dr. Robin Janeway

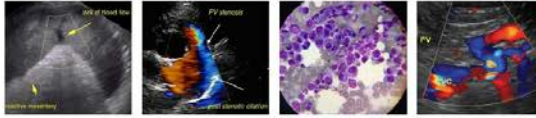
INVOICE

44561

DATE

8/10/23





PATIENT

Ripper Pomeroy

SPECIES

Canine

BREED

Shepherd X

SEX

Neutered Male

AGE

20 Months

WEIGHT

23.6 kg

INTERPRETED BY

Eric Lindquist, DMV
DABVP, Cert. IVUSS

IMAGING PERFORMED BY

Loetitia Saint-Jacques,
LVT

HOSPITAL NAME

Brighton Greens VH

REFERRING VET

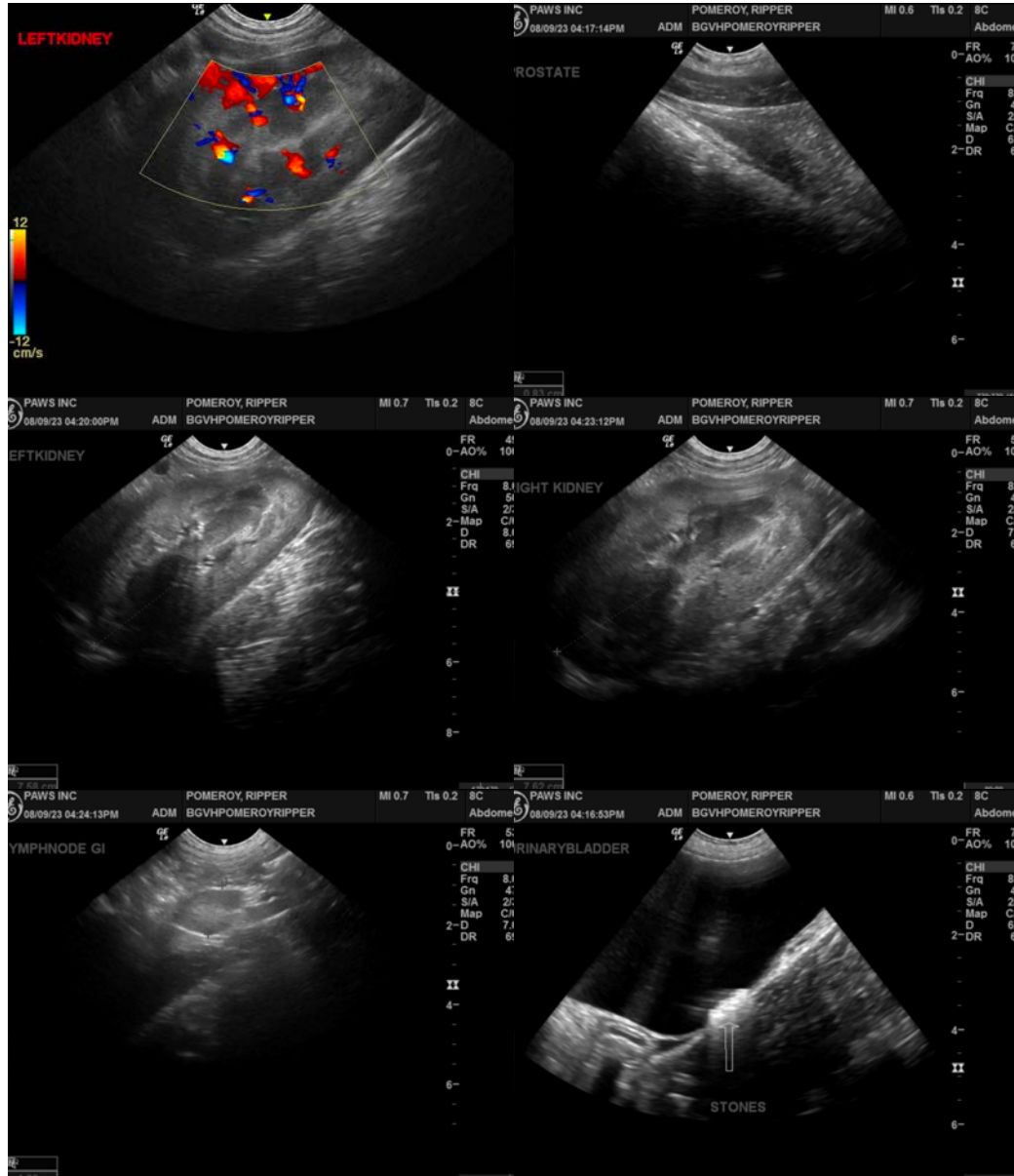
Dr. Robin Janeway

INVOICE

44561

DATE

8/10/23



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.

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

info@SonoPath.com