



PATIENT

Moose Sibert

PRESENTING CLINICAL SIGNS

SPECIES

Canine

BREED

GSH

SEX

Neutered Male

AGE

2 Years 11 Months

WEIGHT

78.7 Pounds

INTERPRETED BY

Lisa Carioto, DVM,
DVSc, Diplomate
ACVIM

IMAGING BY

Loetitia Saint-Jacques,
LVT

sedated dex/torb- hx: presented 2 weeks ago for acute onset v/d. At that time BW showed thrombocytopenia, leukocytosis (mild). chem was unremarkable pet was treated symptomatically for GI signs and did well at home. rx doxycycline at that time tick panel (4dx) was run/negative Pet was rechecked and BW showed progressive decline of thrombocytes. pet was started on immunosuppressive dose of prednisone (4mg/kg) w/ concern for IMTP and pet was sched for abdominal ultrasound at next available at home pet has been eating well (very hungry) with no vomiting or diarrhea (normal stools). Marked PUPD (suspect 2ary to prednisone. O notes pet has continued to be lethargic, acts dazed and won't relax recheck 5/21: IH CBC 5/21 shows recurrence of thrombocytopenia (had been resolving w/ prev CBC rechecks), mild leukocytosis (pet is afebrile) IH chemistry shows severely elevated hepatic enzymes r/o open chest/abd rads show liver enlargement/rounded liver edges. intestinal gas and large amount of food and feces in GI tract, full/normal bladder (pet is urinating normally) A-fast IH shows no free abdominal fluid. diffusely enlarged and inflamed liver w/ no observed masses. rads sent for 24 hour review: current rx: amoxicillin 15mg/kg BID, denamarin prednisone 20mg BID = 2mg/kg per day tick PCR panel negative. lepto PCR and ELISA negative problem list: 1. thrombocytopenia r/o IMTP, vector borne, lepto, neoplastic/inflammatory, other 2. leukocytosis r/o infectious, inflammatory (poss 2ary to steroids) 3. hepatic r/o inflammatory, infectious, neoplastic (liver lymphoma, etc), idiosyncratic, idiopathic, open Relevant Medical History and Physical Exam findings: ~ Recent Diagnostics: Relevant Laboratory Results / Abnormalities: ~ leukocytosis (chronic, mild - neutrophilia, monocytosis) thrombocytopenia -initially responsive to prednisone with recurrence and progression hepatic enzyme elevation (severe, acute onset) ALP, ALT, GGT elevation - severe ~ Current medications (include full name, dosage and frequency): ~current rx: amoxicillin 15mg/kg BID, denamarin prednisone 20mg BID = 2mg/kg per day~ Relevant Radiograph Findings(email radiographs if available): ~ Diffuse hepatomegaly as described. This is a nonspecific finding that could be seen secondary to vacuolar hepatopathy (commonly seen secondary to endocrinopathies), congestion, extramedullary hematopoiesis, nodular hyperplasia, inflammatory process or an infiltrative process. Correlate with bloodwork. Gastric contents most consistent with ingesta. A combination with foreign material cannot be ruled out but is considered unlikely given the lack of reported gastrointestinal signs. Gas within the intestinal tract could be secondary to aerophagia or less likely due to gastroenteritis (given the lack of recent gastrointestinal signs). Unremarkable thorax.~
Abnormal PE/Chem/CBC/JA Results: BodyScore 4 - Ideal - 4 Temp 100.5 Pulse 80 Resp 30 CRT <2 sec Dental 2 - Mild Pain 1 - No Visible Pain Alert BAR Element Earth Muc Memb Pink/Healthy

ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN

HOSPITAL NAME

MountainView AH

Urinary System

The urinary bladder is well distended with anechoic contents. The wall is smooth and regular. No abnormalities are noted with the trigone or proximal urethra, and there is no evidence of sediment, cystoliths, polyps or a mass.

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Dr. Hill

Prostate

The prostate is homogenous and measures 1.14 cm, which is within normal limits for a neutered male.

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Kidneys

The **left** kidney. No overt abnormalities are noted with its size. A precise measurement is not possible as the entire kidney does not fit in the field of view. It is within normal limits in echotexture and echogenicity (hypoechoic to the spleen). The capsule is smooth and its overall architecture, including the definition of the cortico-medullary junction, are preserved. There are no signs of nephroliths or pyelectasia. The surrounding mesentery is not hyperechoic.

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The **right** kidney. Findings are similar to the left kidney.

GSH

Aortic bifurcation/trifurcation

No abnormalities observed.

Adrenal Glands

SEX

Neutered Male

The **left** adrenal gland measures 0.42 cm at the cranial pole, 0.42 cm at the caudal pole. The gland is mildly flattened, which is attributed to the administration of steroids. No abnormalities are noted with the gland's overall architecture, echogenicity or echotexture. The phrenico-abdominal vein and surrounding vasculature and mesentery are unremarkable.

AGE

2 Years 11 Months

The **right** adrenal gland measures 0.48 cm at the cranial pole, 0.49 cm at the caudal pole. No abnormalities are noted with the gland's overall architecture, echogenicity or echotexture. The phrenico-abdominal vein and surrounding vasculature and mesentery are unremarkable.

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Spleen

Splenomegaly, however, no abnormalities are observed with its overall architecture or echogenicity. The capsule is smooth and curvilinear. No abnormalities are observed with its vasculature, i.e. congestion and thrombi are not identified.

INTERPRETED BY

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Splenomegaly may occur secondary to the administration of sedation. It is often observed in German shepherd and German shepherd mix breed dogs. The cause of splenomegaly of which is unknown, but is not considered clinically significant.

IMAGING BY

Loetitia Saint-Jacques,
LVT

However, given Moose's thrombocytopenia and previous history of vomiting and diarrhea, other differential diagnoses include splenitis, caused by antigenic stimulation, immune-mediated induced inflammation, extramedullary hematopoiesis, reactive hyperplasia and hypersplenism. There are no obvious signs of lymphoma or other round cell tumour. *Note*, a mildly heterogeneous echotexture is noted when evaluated with the linear probe, which may be due to white and red pulp. Hypersplenism and extramedullary hematopoiesis are

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Liver

The liver appears swollen and enlarged. It has smooth, but rounded borders. It is homogeneous. Subjectively, it appears *hypoechoic* for an individual receiving steroids. It remains hypoechoic to the spleen and falciform fat. The walls of the portal veins are mildly hyperechoic and prominent. Focal lesions are not observed. No obvious abnormalities are noted with the hepatic vessels.

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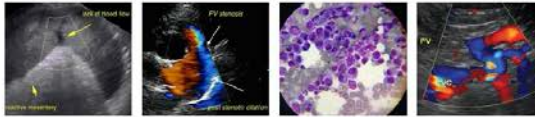
The gallbladder (GB) wall is within normal limits in thickness and echogenicity. A trivial amount of echogenic material is present within the GB. No edema is noted surrounding the GB. The portions of the cystic and/or common bile ducts observed are not dilated or tortuous, i.e. there are no signs of an obstruction.

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Portable Animal Wellness Sonography, Inc.

IMAGING PERFORMED BY

pawsonography@gmail.com 530-786-8340

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Gastrointestinal

The lumen is filled with ingesta and gas. The gastric wall is within normal limits in thickness and the wall layers are well defined. No obvious abnormalities are observed with its peristalsis.

SPECIES

Canine

The small intestinal wall thickness, including the duodenum, is within normal limits and the definition of the wall layers is preserved. Quite a bit of ingesta, gas and fluid are present within the small intestines. Abnormally dilated loops of bowel are not observed.

BREED

Gas and ingesta in the transverse colon.

GSH

The colonic wall is not thickened and mural detail is considered normal.

There are no obvious signs of a mass, foreign body, infiltrative disease or an obstruction in the gastrointestinal tract.

SEX

Neutered Male

Pancreas

No abnormalities are observed with the size, architecture, echogenicity or echotexture of the pancreas. There is no evidence of hyperechogenicity of the surrounding mesentery, i.e., signs of active pancreatitis are not present.

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Other

Lymph nodes

Mildly prominent, however, most likely within normal limits for a dog of Moose's age and lean body condition score. Reactive hyperplasia may be a contributing factor due to his history.

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Abdominal effusion is not visualized.

Heart sedated dexmedetomidine/butorphanol

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A brief video clip of the heart was submitted. Pericardial and pleural effusion are not identified. A mass is not observed on evaluation of the cardiac chambers. Note, a mass may be overlooked in the absence of pericardial effusion. No obvious abnormalities with contractility (sedated and measurements not performed).

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ULTRASONOGRAPHIC FINDINGS

• **Liver:** The hepatomegaly and "swollen" appearance of the liver are most likely secondary to the administration of steroids. The subjective finding of mild hypoechoogenicity is contrary to what one normally expects with steroids, therefore, active inflammation, such as lymphoma or acute hepatitis cannot be excluded. However, it may also be overinterpretation and normal for Moose and the ultrasound machine. Cytology results are pending.

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• **Spleen:** Splenomegaly possibly multifactorial causes, i.e. sedation, often observed in German shepherd and German shepherd mix breed dogs, as well as a response to Moose's underlying disease, such as extramedullary hematopoiesis or reactive hyperplasia. Splenitis due to antigenic stimulation, immune-mediated induced inflammation, and hypersplenism remain possible. Lymphoma or other round cell tumour cannot be excluded.

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• **Adrenal glands:** the flattened appearance of the left gland is consistent with the administration of steroids, and is not considered clinically significant.

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- Lymph nodes: Mildly prominent, however, most likely within normal limits for a dog of Moose's age and lean body condition score. Reactive hyperplasia may be a contributing factor due to his history. If lymphoma is present, it is always possible that the lymph nodes were larger a few weeks ago and the steroids have caused a regression in size.

- Mild subcutaneous hemorrhaging following aspiration of the liver. This may be associated with administration of steroids. An underlying coagulopathy is considered unlikely if Moose's neuter occurred without complications.

- An underlying cause for the original clinical signs of **vomiting and diarrhea** is not identified on the ultrasound. However, the absence of clinical signs does not exclude the possibility of an underlying food intolerance. Inflammatory bowel disease would have likely responded to the high doses of steroids.

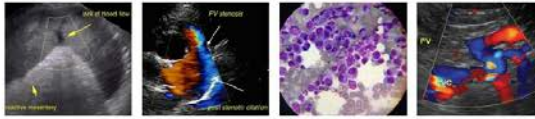
INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

The cytology results will help exclude certain diseases for possible causes of thrombocytopenia.

Depending on the severity of the thrombocytopenia, one may consider macrothrombocytosis, which does not cause clinical signs of bleeding. Macrothrombocytes are seen on the blood smear. Platelet counts can go as low as $50 \times 10^9/L$ in some dogs, and day to day variability may occur. *Bartonella* spp. may be considered as the cause of immune-mediated thrombocytopenia (IMT).

A second immunosuppressive drug may be required in some dogs when treating IMT. Some dogs develop signs of depression, and severe lethargy while receiving steroids, which may or may not be dose dependent.





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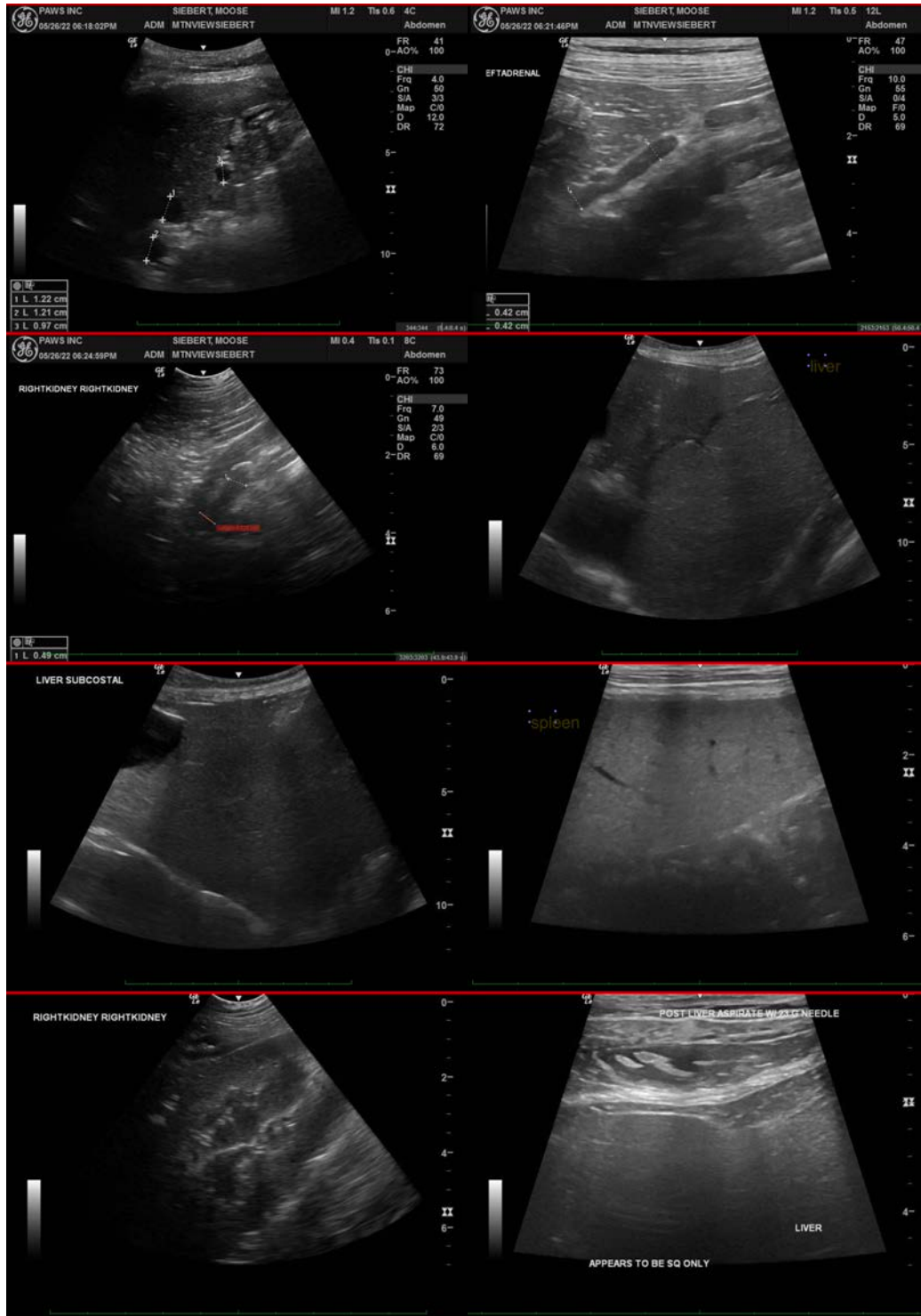
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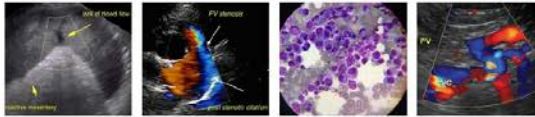
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The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

SPECIES

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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.

BREED

GSH

Lisa Carioto, DVM, DVSc, Diplomate ACVIM

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