



## PATIENT

Harley Wood

## PRESENTING CLINICAL SIGNS

## SPECIES

Canine

## BREED

Pit Bull

Sedation and muzzled- Dexdormitor 0.05ml IV- Chief Concern: Sudden onset of severe hypoglycemia Diagnosis: ddx: insulinoma, neoplasia History and Physical Findings: P is unstable in the hind end, O reported P has had some seizure activity in the last 24 hours. Lethargic, decreased appetite. Hx of seizures starting 2 months ago according to O. Also showing changes in aggressive behavior. Current Therapy and Medications: P is on carprofen for arthritis. Gave karo syrup every 1-2 hours, instructed O to continue to give karo syrup  
Abnormal PE/Chem/CBC/UA Results: Summary of Laboratory Abnormalities: BG @ 12:15 pm= 53, 2:50 pm= 45, 4:45= 78.

## ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN

### SEX

Neutered Male

### Urinary System

The **urinary bladder** is well distended. The wall is smooth and regular. No abnormalities are present with the trigone or proximal urethra. A very small amount of free floating sediment is present, however, there is no evidence of cystoliths, polyps or a mass.

### AGE

10 Years

The **prostate** is homogenous and measures 1.17 cm; within normal limits for a neutered male.

### WEIGHT

76 Pounds

### Kidneys

The **left kidney** measures 6.54 cm. The capsule is smooth. Its overall architecture, including the definition of the cortico-medullary junction, is preserved. Mineralizations of the diverticulae and pelvis are present, without evidence of nephroliths or pyelectasia. The surrounding mesentery is not hyperechoic.

The **right kidney** measures at least 6.0 cm. Findings are similar to the left kidney.

## INTERPRETED BY

Lisa Carioto, DVM,  
DVSc, Diplomate  
ACVIM

**Aortic bifurcation/trifurcation** No abnormalities observed.

## IMAGING BY

Loetitia Saint-Jacques,  
LVT

### Adrenal Glands

The **left adrenal gland** measures 0.56 cm at the cranial pole, 0.46 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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Valley Vet Clinic

The **right adrenal gland** is enlarged and plump, measuring approximately 2.00 cm in diameter x 1.70 cm in length (depending on the view). It is mildly heterogeneous, with areas of hyperechogenicity, suggestive of fat, fibrosis, and mineralization. An echogenic mass effect with very mildly irregular contours is noted within the lumen of the caudal vena cava adjacent to the adrenal mass. It measures 0.48 cm in diameter x 0.77 cm in length

## REFERRING VET

Dr. Anna Lopez

### Spleen

The spleen is within normal limits in size, architecture, echotexture, and echogenicity. The capsule is smooth. No abnormalities are observed with its vasculature, i.e. congestion and thrombi are not identified.

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## PATIENT

Harley Wood **Liver**

There are no obvious signs of hepatomegaly and its borders are smooth and sharp. The liver's echotexture is homogeneous and it is within normal limits in echogenicity. Focal lesions are not observed and no abnormalities are noted with the hepatic vessels.

## SPECIES

Canine

The **gallbladder** (GB) is moderately distended with a mild amount of free floating, gravity-dependent and inspissated echogenic material (sludge). The GB wall is within normal limits in thickness and echogenicity. 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. The parenchyma surrounding the GB is not hyperechoic.

## BREED

Pit Bull

### **Gastrointestinal**

A large amount of gas is present within the lumen of the stomach. The gastric wall is at the high end of the normal reference range in thickness (0.52 cm), however, the wall layers are well defined. The muscularis is more prominent than usual. No obvious abnormalities are observed with its peristalsis.

## SEX

Neutered Male

## AGE

Duodenum: wall thickness is within normal limits and the definition of the wall layers is preserved.

10 Years

Jejunum: wall thickness is within normal limits and the definition of the wall layers is preserved. Abnormally dilated loops of bowel are not observed.

## WEIGHT

76 Pounds

A large amount of gas is present in the small intestines and transverse colon.

The colonic wall is not thickened and mural detail is considered normal. Gas and soft stools are present in the colon.

## INTERPRETED BY

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### **Pancreas**

The **right limb** is enlarged, measuring 2.73 cm, but has smooth contours. It has a coarse echotexture, and is mildly heterogeneous. Pinpoint to punctate hyperechoic foci are scattered throughout the parenchyma. The changes are suggestive of fibrosis, which may be an age-related change, secondary to previous episodes of pancreatitis, mineralization and amyloid deposition. Signs of active pancreatitis or neoplasia are not appreciated.

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Loetitia Saint-Jacques,  
LVT

The **left limb** is severely heterogeneous. It is enlarged (2.1 cm), consists of hypo and hyperechoic nodules of variable size. Punctate hyperechoic foci and ill-defined hyperechoic regions are noted throughout the parenchyma. The area is vascularized.

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A round to elliptical, hypoechoic, homogeneous, well-circumscribed mass is located in the right cranial quadrant. It can be followed medially from the right limb of the pancreas. It measures 2.13 cm in diameter x 2.88 cm in length, and 2.30 in diameter x 2.94 cm in length with the linear probe. The mass is vascularized along its periphery (circumferentially) and throughout. A large blood vessel is present lateral to the mass.

## REFERRING VET

Dr. Anna Lopez

### **Other**

**Lymph nodes** No abnormalities are observed

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**Abdominal effusion** is not visualized.

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## PATIENT

Harley Wood

## ULTRASONOGRAPHIC FINDINGS

## SPECIES

Canine

- **Pancreas:** High index of suspicion of a solitary mass, most likely consistent with an insulinoma with diffuse metastases throughout the left and right limbs and body. Hypoglycemia could explain changes in behaviour (aggressive nature).

## BREED

Pit Bull

- **Adrenal glands:** The right gland is replaced by a mildly heterogeneous mass. there is strong suspicion of a thrombus or metastasis in the caudal vena cava. A pheochromocytoma could explain changes in behaviour (aggressive nature). An adenocarcinoma or carcinoma cannot be excluded.

## SEX

Neutered Male

- **Gallbladder:** Gallbladder sludge without evidence of a mucocoele, or an obstruction.

- **Kidneys:** Very mild age-related changes

- **Urinary bladder:** Sediment in the lumen of the urinary bladder is most likely clinically insignificant.

## AGE

10 Years

- **Gastrointestinal (GI) tract:** No obvious signs of inflammation noted. Changes may be due to stress.

## WEIGHT

76 Pounds

## INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

A fasting blood glucose and insulin concentration may be performed to confirm the diagnosis of insulinoma, or a fine needle aspirate may be performed. The latter must be performed judiciously due to the vascularization of the mass and the blood vessel adjacent to it. Unfortunately, surgical resection is not an option based on the high index of suspicion of metastases.

## INTERPRETED BY

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Medical management of insulinomas can be very successful, particularly in older dogs. Briefly, low dose prednisone at 0.10-0.25 mg/kg/day. High quality protein diet that is restricted in simple sugars, i.e., complex carbohydrates are recommended. Honey, corn or maple syrup may be applied to the gums during signs of hypoglycemia.

## IMAGING BY

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LVT

Discontinue NSAIDs if prednisone is to be used.

Osteoarthritis may be controlled with gabapentin, Cartrophen injections, omega-3 fatty acids, joint related diets, laser therapy, supplements, etc.

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The adrenal mass of right gland and an insulinoma may be the cause of Harley's aggressive behaviour. Metanephrine analysis in the urine may be performed.

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Dr. Anna Lopez

Arterial blood pressure to exclude hypertension

Urine protein: creatinine ratio to exclude proteinuria

Clopidogrel may be considered to decrease the risk of thromboembolism.

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**SEX**

Neutered Male

**AGE**

10 Years

**WEIGHT**

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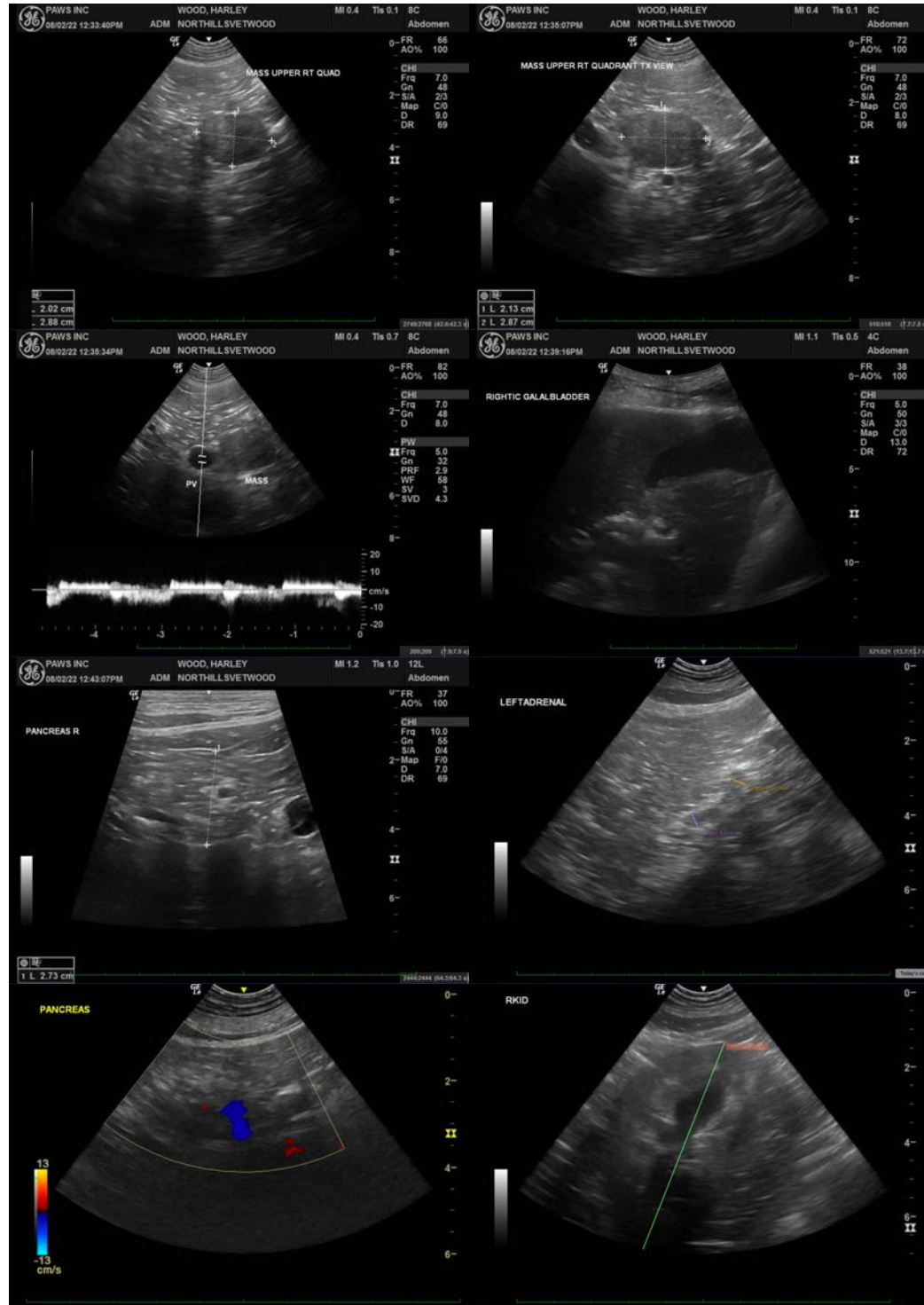
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**SEX**

Neutered Male

**AGE**

10 Years

**WEIGHT**

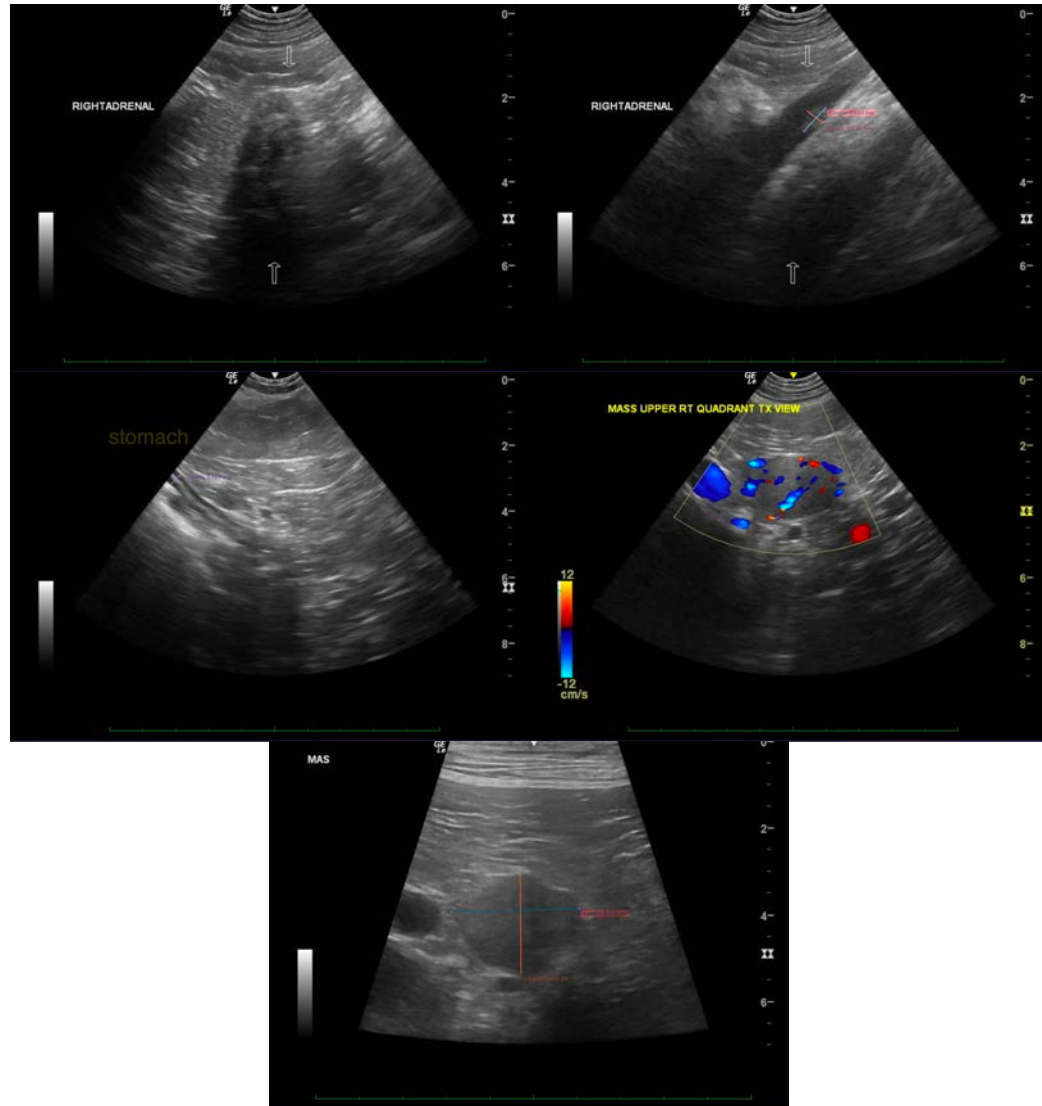
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The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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.

**Lisa Carioto, DVM, DVSc, Diplomate AVIM**

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Dr. Anna Lopez

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