PATIENT

Chico Valdivia

SPECIES

Canine

BREED

Havanese

SEX

Neutered Male

AGE

15 years

WEIGHT

14 lbs

INTERPRETED BY

Tam Mengine, DVM, DABVP (canine/feline practice)

IMAGING PERFORMED BY

Meghan Morse, LVT, CVT

HOSPITAL NAME

Park Ridge Animal Hospital

REFERRING VET

Dr. Rosenblum

INVOICE

10799

DATE

11/21/2025

PRESENTING CLINICAL SIGNS

Grade 3-4/6 HM and elevated LEZ, v+, decreased appetite Current meds: Fluoxetine, Gabapentin.

Abnormal PE/Chem/CBC/UA Results: CHem: SDMA 15, Alb 2.5, Glob 4.6, ALT 1874, AST 231, ALP 2569, GGT 6.8, Total bili 1.7, Bili unconj 0.4, Bili conj 1.3, Chol 415 CBC: Neuts 16373, Lmyph 671, Band 372 Fecal: AG + hooks and rounds T4 0.6 U/A: 1+ bili, 1+ protein, UPC 0.2.

ULTRASONOGRAPHIC EXAMINATION OF THE HEART

CANINE CARDIAC PARAMETERS	**MR VMAX** (m/s)	**TR VMAX** (m/s)	**LA/AO** (m-mode long axis)	**LA/AO** (Heart Base; Swe)	**FS** (%)	**EF** (%)	**EPSS** (cm)
NORMAL PARAMETER	4.5-5.5	<2.7	1.3	Up to 1.6	28-40	40-100	<0.6
PATIENT	4.3	2.3	1.3	1.3	46.3	79.8	0.4
CANINE CARDIAC PARAMETERS	**HR** (BPM)	**AV VMAX** (m/s)	**PV MAX** (m/s)	**BODY WEIGHT** (kg)	**LAD** LA MAX 4 Chamber	**LVIDd** Avg; 2D and m-mode short axis (cm)	**LVIDs** Avg; 2D and m-mode short axis (cm)
NORMAL PARAMETER	50-100	0.7-1.7	0.7-1.6				
PATIENT	NM	1.2	1.0	6.4	2.8	2.5	1.3

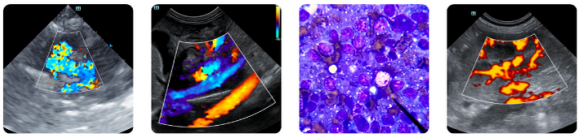
Cardiac Presentation

The **left atrium** is of normal size with no evidence of spontaneous echo contrast or thrombus formation. The **left ventricle** is normal in diameter with normal wall thickness and demonstrates good systolic function. The **right atrium** is subjectively of normal size and **right ventricular** dimensions and systolic function are subjectively normal. There is mild to moderate **mitral valve** regurgitation and mild **tricuspid valve** regurgitation noted, with irregular thickening of the valve leaflets. There was no evidence of chordae tendineae rupture or valvular prolapse in either valve and no vegetative lesions were seen. Estimates of left ventricular filling pressures are normal (Mitral E-vel. 0.7 m/s , mitral A-vel. 0.9 m/s), and there was reversal of the E and A waves, which is an incidental finding in geriatric patients. The **aortic** and **pulmonary valves** both exhibit normal appearance and function. The **main pulmonary artery** appears normal. There is no evidence of pulmonary hypertension. No pericardial/pleural effusion or cardiac masses are seen. There is no evidence of an arrhythmia.

ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN

Urinary System

The urinary bladder is moderately distended with anechoic urine, and no luminal sediment is present. The ureteral papillae, trigone and pelvic urethra are of normal appearance, and the ureters are not visible (normal). No masses, calculi or mucosal irregularities are noted. Urethra visualized to 3.0 cm.



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The prostate is of appropriate size for patient age and neutering status, with a homogenous parenchyma and smooth capsule. The prostatic urethra is non-dilated with normal margins.

The kidneys are of normal size and shape and exhibit appropriate corticomedullary differentiation with a normal 1:3 cortex to medulla ratio. There is no evidence of nephrolithiasis, mineralization, pyelectasia, cystic change or hydronephrosis. The proximal ureter is not visible (normal). Left kidney measures 3.8 cm, and the right kidney measures 3.9 cm.

Adrenal Glands

Both adrenal gland are diffusely enlarged and of normal echogenicity. They have normal phrenic vasculature and are found in the normal location. The left adrenal gland height is 8.7 mm at the cranial pole and 6.7 mm at the caudal pole. The right adrenal gland height is 9.8 mm at the cranial pole and 5.1 mm at the caudal pole.

Spleen

A 9.4 mm diameter heterogenous nodule is noted in the tail of the spleen, which does disrupt the splenic capsule. The surrounding omentum is normal. The splenic vasculature is normal with no evidence of congestion or thrombosis, and blood flow through the splenic hilus appears normal

Liver

The liver is diffusely hyperechoic and subjectively enlarged, with sharp borders and a homogenous echotexture. The portal and hepatic vasculature are of normal size and appearance with no evidence of congestion or thrombosis.

The gallbladder is moderately distended with anechoic contents and a small amount of freely-moveable echogenic sludge. The wall was thin and continuous with small focal polypoid lesions. The cystic and common bile ducts are normal / not visible.

Gastrointestinal

The stomach is moderately) distended with gas. The gastric wall is 2.7 mm with normal deviations due to rugal folds, and exhibits appropriate wall layering. The pylorus is of normal appearance.

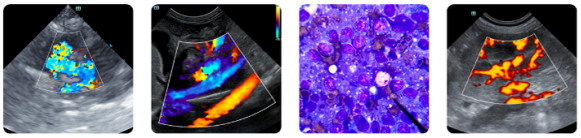
The visualized portions of the duodenum, jejunum, and ileum are of normal thickness with intact wall layering that exhibits the appropriate 1:3 muscularis to mucosa ratio. Intestinal motility appears normal.

The visible portions of the colon are of normal thickness, 1.3 mm, with intact wall layering. The ileocecal junction is not visualized.

Pancreas

The areas of the limbs and body of the pancreas are isoechoic to the surrounding mesenteric fat, with normal capsular appearance. There is no evidence of peripancreatic inflammation. The pancreatic duct appears normal.

Free Abdomen



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There is no evidence of free fluid within the peritoneal cavity. The omentum and intra-abdominal fat are of appropriate echogenicity. Enlarged abdominal lymph nodes are not observed. The aortic trifurcation has normal blood flow with no evidence of thrombosis.

PRIMARY FINDINGS

- Myxomatous mitral valve disease – Stage B1.
- Diffusely hyperechoic liver, consistent with non-specific hepatopathy.
- Diffusely enlarged adrenal glands, most typical of benign hyperplasia, with hyperadrenocorticism or neoplasia deemed less likely.
- Small, heterogenous splenic nodule with capsular expansion.

SECONDARY FINDINGS

- Gallbladder polypoid hyperplasia, which is an incidental in an older dog.

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

- No cardiac medication is warranted at this time.
- Daily monitoring of the sleeping respiratory rate at home is recommended, and if the sleeping respiratory exceeds 35 breaths per minute, then a prompt recheck physical examination and chest radiographs to assess for pulmonary edema would be warranted.
- The patient may benefit from a cardiac diet such as Purina's "CardioCare" veterinary diet. Omega-3 Fatty acid supplementation may also be of benefit.
- Extremely vigorous exercise should be avoided, but there are no restrictions on moderate exercise, such as leash walking.
- Recheck echocardiogram is recommended in 6-8 months. MMVD is a progressive disease, and while no medication is warranted now, it may be beneficial in the future.
- If anesthesia is needed, the following recommendations are suggested:
    - Avoid a-2 agonists such as dexmedetomidine and xylazine.
    - Pre-medication with an opiate and a benzodiazepine is recommended. Additionally, Gabapentin 10mg/kg PO and trazodone 5mg/kg PO given first thing in the morning on the day of the procedure can further reduce inhalant anesthetic requirements.
    - Pre-oxygenation, followed by induction with propofol or alfaxalone is recommended, followed by maintenance with isoflurane or sevoflurane.
    - When feasible, the use of local anesthetic blocks can decrease maintenance anesthetic requirements.
    - Moderate use of IV fluids throughout the procedure is recommended, with a starting dose of 3-5ml/kg/hr, with modest increases as needed to support blood pressure, but not to exceed a total volume of 20-30ml/kg for the procedure. The minimum volume necessary to maintain adequate blood pressure is desirable.
    - Use atropine, if necessary, to maintain a HR > 90 throughout the procedure. If available, a dopamine or dobutamine CRI can be used for additional blood pressure support if the patient experiences hypotension.

The changes in the liver are non-specific, but given the marked elevations in liver enzymes, significant underlying pathology such as cholangiohepatitis or diffuse infiltrative neoplasia is suspected. Fine needle aspiration could be attempted but may not provide definitive diagnosis in the case of liver pathology. Thus, liver biopsy would be ideal, provided coagulation parameters are normal. If empiric

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treatment for cholangiohepatitis is desired, then the following treatment recommendations would apply:

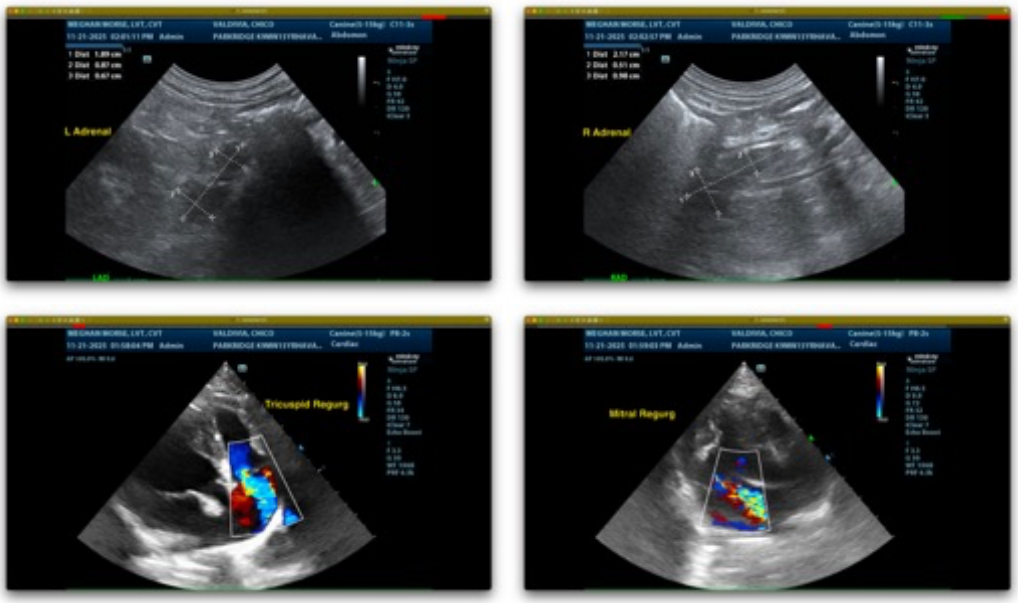
- Initiation of liver support therapies such as SAMe, Vitamin E and ursodiol.
- Broad spectrum antibiotic therapy, such as a combination of amoxicillin or amoxi-clav, in combination with a fluoroquinolone, is recommended. If recheck lab values in 1 week show significant improvement, then a 4-6 week total course of antibiotics is recommended.

The splenic nodule is a non-specific finding and could be consistent with nodular hyperplasia, extramedullary hematopoiesis, splenitis or less likely, neoplasia. Recommendations include:

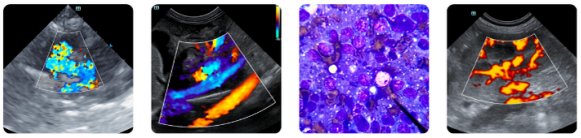
- Ultrasound-guided fine needle aspiration of affected areas with a 25G needle.
- Monitoring the nodule(s) for changes in size or appearance, via serial ultrasounds at 6-8 week intervals would be recommended if fine needle aspirate is not pursued.

The changes in the adrenal glands are most consistent with benign hyperplasia, as might occur secondary to physiologic stress. However, pituitary dependent hyperadrenocorticism would also be possible, provided there are clinical signs to support this diagnosis.

- If signs of Cushing's disease are present, then adrenal function testing (either a low-dose dex-suppression test or ACTH stimulation test) is recommended.
- Monitoring the nodule for changes in size or appearance, via serial ultrasounds at 6-8 week intervals



New Jersey Mobile
FUELED BY SONOPATH VETERINARY ULTRASOUND



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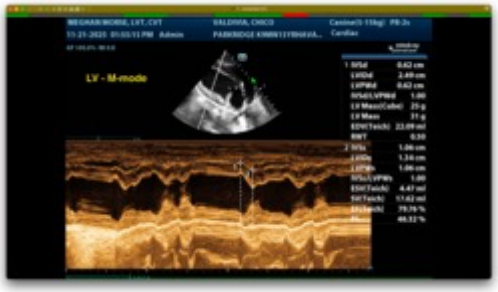

The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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.

Tam Mengine, DVM, DABVP (canine/feline practice)

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