PATIENT

Toby Torres

SPECIES

Canine

BREED

Yorkie Terrier

SEX

Intact Male

AGE

12 years 1 month

WEIGHT

11.2 lbs

INTERPRETED BY

Bradley Harris, DVM, DACVECC, DACVIM (cardiology)

IMAGING PERFORMED BY

Rebecca Hamilton

HOSPITAL NAME

North Jersey Animal Hospital

REFERRING VET

Dr. Chiu

INVOICE

11152

DATE

1/16/2026

PRESENTING CLINICAL SIGNS

HM 3/6, coughing ^, OA, ^ BVS, but no crackles.
Meds: Gabapenting, Carprofen
Abnormal PE/Chem/CBC/UA Results: Mild Anemia 37.1%, Band Neut 0.432 k/ul, Monocytes 2.138 k/ul, Basophil 0.108 k/ul, BUN 32, Glob 4.3, ALb 2.7. Urine: Free Catch: Rare cocci and WBC/RBC, USG 1.031.

ULTRASONOGRAPHIC EXAMINATION OF THE HEART

CANINE CARDIAC PARAMETERS	BW	HR BPM	LAD 4 ch Long	RAD 4 ch Long	La/Ao Heart Base	LVIDd	LVIDs
NORMAL PARAMETER		50-100			<1.6		
PATIENT	5.09 kg	180	2.64	1.49	1.52	2.31	1.46
CANINE CARDIAC PARAMETERS	**FS**	**EPSS**	**PV V MAX (m/s)**	**AV V Max (m/sec)**	**MR Vmax**	**TR Vmax**	**RPA distensibility (normal >30%)**
NORMAL PARAMETER	28-40	<0.6	0.7-1.6	0.7-1.7	4.5-5.5	< 2.7	
PATIENT	37	0.2	1.2	1.2	6.4	2.0	NM

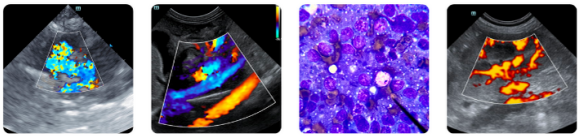
Cardiac Presentation

The left atrium is upper limits of normal to mildly enlarged. The left ventricle is normal in dimension, with normal systolic function. The right atrium and ventricle are normal in dimension, with normal systolic function. The anterior and posterior mitral valve leaflets are thickened and redundant consistent with myxomatous changes, and there is mild prolapse. There is evidence of mild to moderate mitral regurgitation. The tricuspid valve leaflets are minimally thickened, with trivial tricuspid regurgitation and no evidence of pulmonary hypertension. The left ventricular outflow tract demonstrated normal laminar flow and the visible aorta is unremarkable. The right ventricular outflow tract assessment revealed normal laminar flow, and appropriate diameter and distensibility. There is trivial pulmonic and no aortic valve insufficiency identified. There is no visible pericardial, pleural, or free peritoneal fluid documented. No evidence of hepatic venous congestion is noted. The cardiac chambers, pericardial and visible extra-cardiac regions were free of masses, spontaneous echo contrast, or thrombi.

ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN

Urinary System

The urinary bladder contains a mild amount of suspended echogenic debris with otherwise anechoic urine. The trigone, and pelvic urethra are unremarkable with normal wall thicknesses and normal tone. The ureters were not visualized, which is a normal finding. The ureteral papillae appear normal. There is no evidence of inflammatory, infiltrative, or neoplastic disease.



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The kidneys are normal in size. The cortices are hyperechoic with a loss of normal cortocmedullary distinction. There are mild scattered renal cortical cystic changes and mild dystrophic mineralization noted bilaterally. The cortex to medulla ratio is appropriate. No pyelectasis or pelvic dilation present. Mildly irregular capsules. Left kidney measures 4.56 cm, and the right kidney was not measured.

Reproductive System

The left testicle had a moderately sized hyperechoic mass effect within the parenchyma that does not readily distort the normal testicular capsule. The right testicle is normal in size, and contour with normal parenchyma. The prostate is enlarged with irregular capsule and a heterogenous or mottled parenchyma with mixed hyper and hypoechoic nodular changes. The visible pelvic and prostatic urethra appear patent with no overt evidence of obstruction.

Adrenal Glands

Both adrenal glands are visualized and have 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. Left adrenal measures 0.51 cm x 1.72 cm. The right adrenal measures 0.45 cm x 1.48 cm.

Spleen

The spleen is smooth with homogeneous parenchyma and hyperechoic to liver and renal cortical parenchyma. The capsule is without noticeable irregularity or deformation. The splenic vasculature is normal without signs of congestion, spontaneous echo contrast, or thrombosis. No evidence of acute or chronic inflammatory, neoplastic, or infarct are documented. The spleen measures 1.02 cm at the hilus.

Liver

The liver is subjectively normal liver size, contour, and structure. Parenchymal echogenicity is naturally coarse and hypoechoic to the spleen. Vasculature is within normal limits with no evidence of congestion. The gallbladder contains a mild amount of suspended echogenic debris and dependent sediment. Cystic and common bile ducts are normal. There is no evidence of intra- or extra-hepatic biliary dilation.

Gastrointestinal

The stomach and intestines are free of stasis and peristaltic activity, with no significant dilation noted. There is normal wall thickness and acceptable curvilinear mural detail. The pyloric-duodenal junction and ileocecocolic junction are patent, and the colon contains normal shadowing feces. There is no evidence of shadowing obstructive material or overt infiltrative disease noted. No associated abnormal lymphatic activity is documented.

Pancreas

The base and limbs of the pancreas are isoechoic to surrounding omental fat. The pancreatic duct and capsular contour are normal. There is no overt evidence of active inflammatory or neoplastic disease.

Free Abdomen

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There is no lymphadenopathy or free fluid noted.

ULTRASONOGRAPHIC FINDINGS

- The urinary bladder contains echogenic, suspended debris contrasted with anechoic urine. This is often related to urinary tract infection but may represent exfoliated debris or sterile inflammation.
- There is increased renal cortical echogenicity and thickening with a mildly irregular capsular contour. Multifocal cystic cortical changes are noted. This is secondary cystic formation consistent with degenerative changes and remodeling. There is no evidence of abscessation or suspicion of neoplasia. Dystrophic mineralization was noted and is non-obstructive at this time, with no evidence of pylectasis.
- There's a hyperechoic left testicular mass within the testicular parenchyma with minimal capsule distortion. The prostate is enlarged, and heterogenous with irregular margins. This may represent infiltrative neoplastic disease, however, benign prostatic hypertrophy is also considered a possibility given the intact status of this patient.
- The gallbladder contains echogenic, suspended and dependent unorganized debris. This is not yet to the level of an organized mucocele, however early/developing mucocele cannot be ruled out. This dependent sediment is often an incidental finding or may be associated with concurrent endocrine disease such as hyperadrenocorticism or diabetes mellitus.
- These findings are consistent with degenerative/myxomatous mitral valve disease with moderate hemodynamic effects consistent with at least ACVIM Stage B1 and possibly early stage B2. Stage B2 criteria for heart enlargement that are used to identify dogs that may benefit substantially from treatment before the onset of clinical signs of heart failure include hear murmur intensity ≥3/6, echocardiographic LA/Ao in the right-sided short axis view in early diastole ≥1.6, left ventricular internal diameter in diastole, normalized for body weight (LVIDDN) ≥1.7, VLAS > 3, and breed-adjusted radiographic vertebral heart score (VHS) >10.5.

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

A urinalysis and urine culture via cystocentesis are recommended to evaluate the urinary tract changes for potential urinary tract infection.

Fine needle aspirates of the prostate with cytology are recommended. A coagulation profile and platelet estimate prior to sampling are indicated to ensure the absence of coagulopathy. Occasionally some tissues are poorly exfoliative, or cytology is non-specific, in which case biopsy with histopathology may be required for a definitive diagnosis.

Consider surgical castration with histopathology of the left testicle for further diagnosis of the testicular nodular mass.

Given the degree of chamber dilation, an aggressive treatment approach would be to start cardiac therapy. Therapy would include enalapril or benazepril (0.5 mg/kg BID assuming normotension and lack of renal insult), Vetmedin (0.25-0.35 mg/kg BID), with a cough suppressant (e.g. Hydrocodone 0.25-0.35 mg/kg BID to q6 hours PRN) as necessary based on the severity of the cough. While there is an increased risk of IV fluids, corticosteroids, or anesthesia, there is no overt objection, as the need

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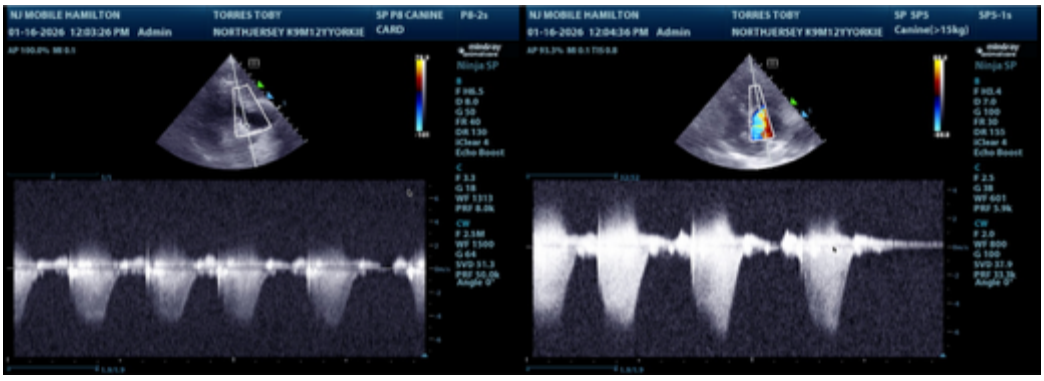
likely outweighs the risks. If not already performed, baseline thoracic radiographs and blood pressure are recommended. A repeat chest X-rays, BP, and chemistry should be performed again in 1-2 weeks. A repeat echo, blood pressure, chemistry panel and thoracic radiographs are indicated in 6 months.

As the results are on the border between stages B1 and B2 (B2 is where therapy is typically recommended), a conservative approach is to hold off on therapy and just follow the 6 month recheck plan. Either option is acceptable and should be discussed with the owner. Regardless of approach, owners should begin monitoring the resting respiratory rate. If a progressive increase in respiratory rate is seen, then evaluation by a veterinarian is necessary.

Anesthesia considerations:
If anesthesia is necessary, then alpha-2 agonists, ketamine, high dose acepromazine, and Telazol should be avoided. Skip any ACE-inhibitor (if receiving) on morning of anesthesia. Fluid therapy during anesthesia should be considered at a reduced rate (e.g., 5 ml/kg/hour) if possible. A shorter anesthetic duration will reduce the risk of complications. Pre-oxygenation is advised. Pre-medication with an opioid (i.e., butorphanol, hydromorphone, oxymorphone) with or without a benzodiazepine is generally the safest protocol. An induction agent such as Propofol, alfaxalone, or diazepam/etomidate can be used to effect. Maintenance of anesthesia with isoflurane or sevoflurane is reasonable.

Diet:
Ensure feeding a grain-inclusive diet if possible. A high-quality food from Hills, Royal Canin, Science Diet, Eukanuba, Iams, or Purina that is highly palatable with adequate protein and calories for maintaining optimal body condition with mild dietary sodium restriction (<100 mg/100 kcal) is recommended. Consider omega-3 fatty acid supplementation.

Activity:
Moderate physical activity (meandering walks, exploring the backyard, playing with toys inside, getting excited when family gets home, etc.) is encouraged, but periods of strenuous aerobic activity (jogging, strenuous outdoor ball play, prolonged play at the dog park, etc.) should be avoided, especially during periods of high heat (> 80 F) and humidity. Dogs with heart disease tend to tolerate cool and cold temperatures much better than high temperatures. Avoid sudden increases in activity (e.g. 2 block walks during the week but 2 mile walks followed by 30 minutes at the dog park on the weekends) as this may be difficult for the cardiovascular system to deal with.



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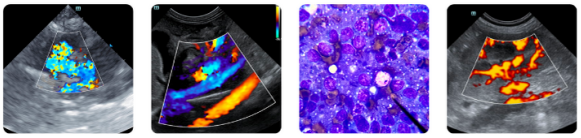

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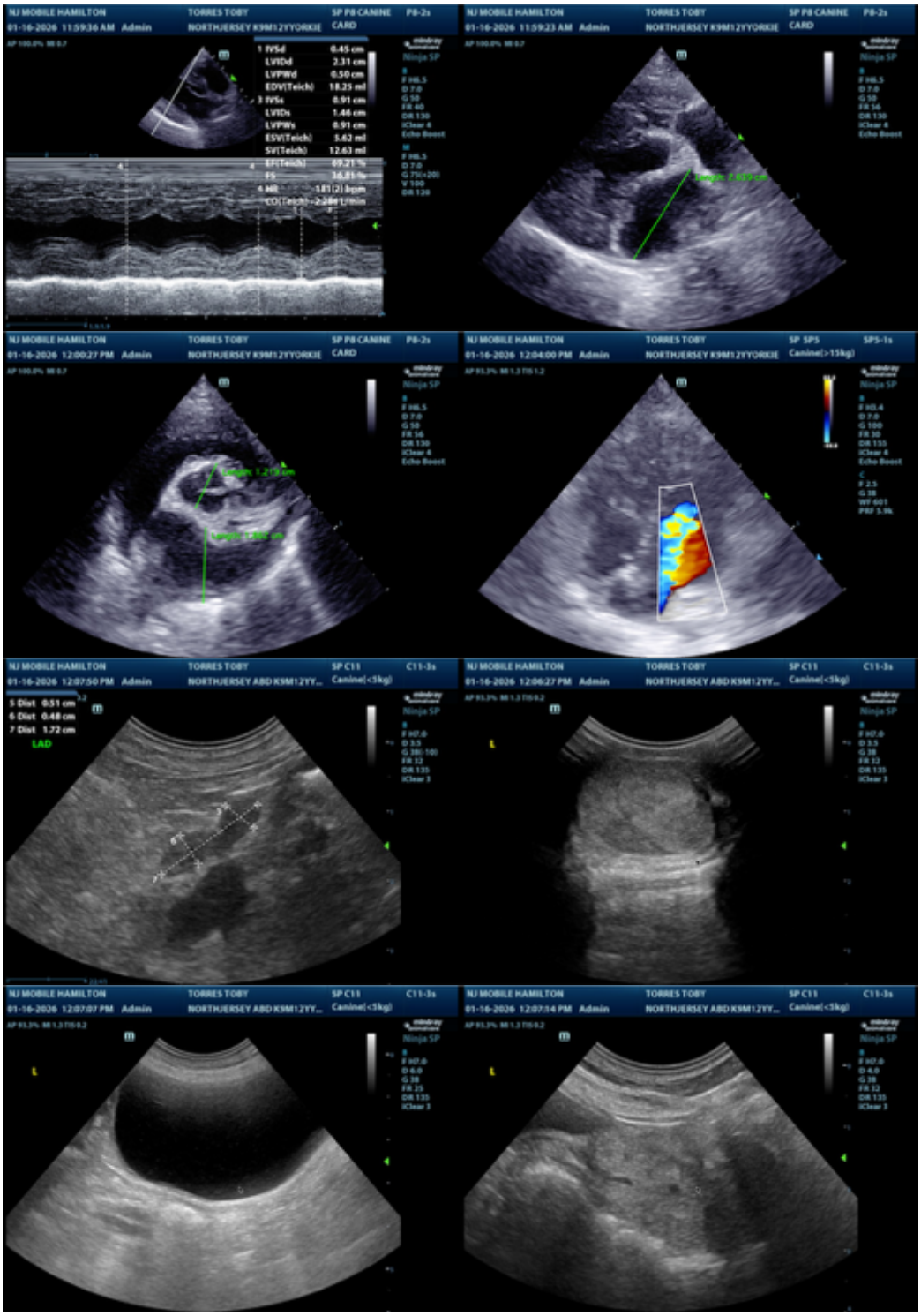

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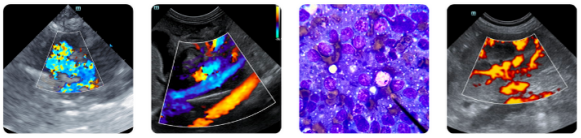

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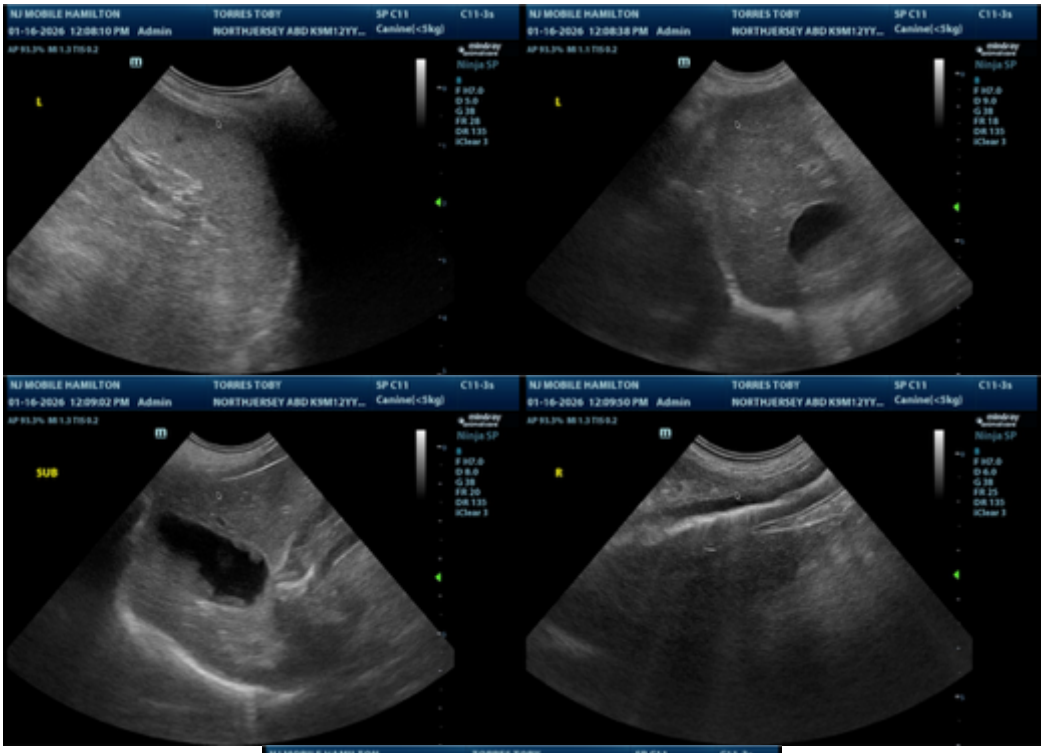

The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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.

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