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Clinical Sonography & Telecytology
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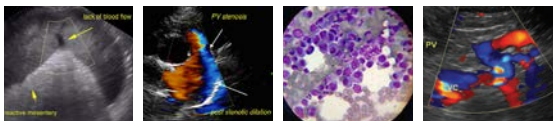


ANIMAL SOUNDS NW
MOBILE VETERINARY ULTRASOUND
IMAGING PERFORMED BY
AnimalSoundsNW.com 541-357-9423

PATIENT
Mo Huberts

SPECIES
Canine

BREED
Boston Terrier

SEX
Neutered Male

AGE
4 Years

WEIGHT
32.5 Pounds

INTERPRETED BY
Eric Lindquist, DMV, DABVP, Cert. IVUSS

IMAGING PERFORMED BY
Jenna Walsh, CVT

HOSPITAL NAME
Ark Animal Hospital

REFERRING VET
Dr. Jackson

DATE
1/11/22

INVOICE
34132

PRESENTING CLINICAL SIGNS

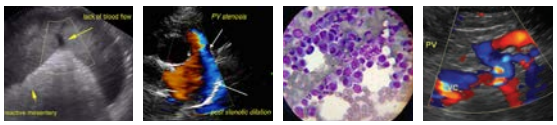
Underbite and arrhythmia on PE found. No history concerns, arrhythmia first auscultated 7/2020, no changes or clinical signs seen since first diagnosed or prior to it being found on exam. Primary Question/Differential to Be Answered in This Exam stable for dental?
Abnormal PE/Chem/CBC/UA Results: ECG AND CLINICAL ASSESSMENT: A supraventricular arrhythmia is noted. Supraventricular arrhythmias are most commonly associated with cardiac conditions that cause atrial enlargement; however, they can also be identified in patients with metabolic disease, wide variations in autonomic tone, congenital conduction system abnormalities, and possibly intra-abdominal disease. The R wave amplitude is markedly increased; this may suggest ventricular enlargement but can also be identified as a normal patient variant. DIAGNOSTIC RECOMMENDATIONS: Thoracic radiographs and echocardiography (if available) are recommended to evaluate cardiac size and determine if the ECG changes are secondary to cardiac enlargement or represent a benign variant of normal. The supraventricular arrhythmia suggests the presence of underlying structural heart disease. Additional diagnostics including thoracic radiographs and an echocardiogram (if possible) are recommended. OVERALL RECOMMENDATIONS: Recommend avoiding alpha-2 agonists, ketamine, or Telazol in the anesthetic protocol. Consider premedication with an opioid/benzodiazepine and induction with propofol, etomidate, or alfaxalone (preferred, if available).

ULTRASONOGRAPHIC EXAMINATION OF THE HEART

CANINE CARDIAC PARAMETERS	MR VMAX (m/s)	TR VMAX (m/s)	LA/AO (Boon method)	LA/AO (Heart Base; Swe)	FS (%)	EF (%)	EPSS (cm)
NORMAL PARAMETER	4.5-5.5	<2.7	1.3	<1.6	28-40	40-100	<0.6
PATIENT	5.0	1.8	1.18	1.4			0.1
CANINE CARDIAC PARAMETERS	**HR** (BPM)	**AV VMAX** (m/s)	**PV MAX** (m/s)	**BODY WEIGHT** (kg)	**LA** 2D short axis Base view (cm)	**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		1.64	1.28		3.01		

Cardiac Presentation

The echocardiogram in this patient demonstrated normal **left atrial** size based on 3 different LA measurement methods. Chamber volumes and echogenicity were normal. The cranial and caudal **mitral** valve leaflets presented vegetative thickening consistent with endocardiosis. Doppler indicated measurable insufficiency. The **left ventricle** presented thicknesses with linear contour and was not dilated nor restricted. The **myocardium** presented normal echogenicity without subjective evidence of significant fibrotic or ischemic disease. **Contractility** of the ventricular walls was adequate and in normal range for this patient evidenced by the fractional shortening measurement and subjective evaluation of the different regions of the myocardium. The **left ventricular outflow** tract demonstrated normal laminar flow and subjective structural integrity. The **right atrium** and auricle revealed normal



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size, structure and content. No evidence of masses was noted or chamber overload. **Tricuspid** valvular assessment demonstrated adequate linear morphology. The **right ventricle** was of normal size (1/3 diameter of LV), chordae structure, myocardial echogenicity and thickness. **Pulmonic** tract assessment revealed normal valve structure, laminar flow, and diameter (approx.1:1 pa/ao ratio). No visible **pericardial** or free pleura fluid was noted. No echographically detectable evidence of infiltrative disease was visible. The cranial **mediastinum and pericardial regions** were free of masses in the visible window.

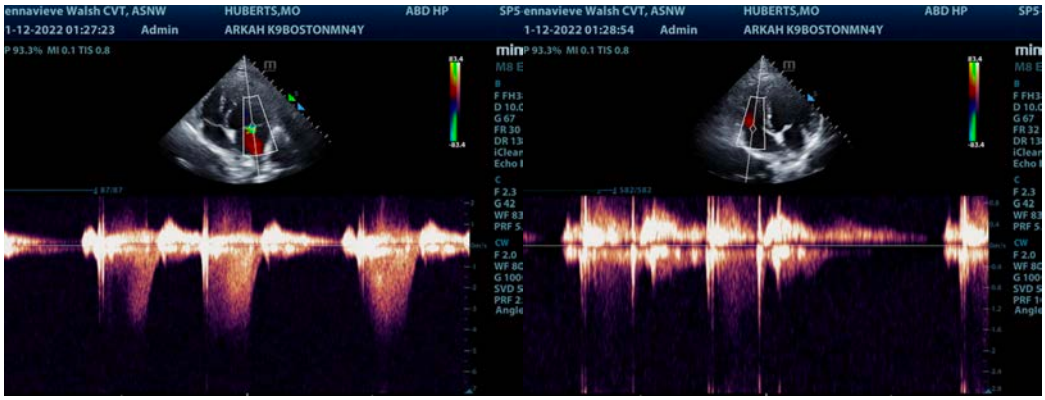
ULTRASONOGRAPHIC FINDINGS

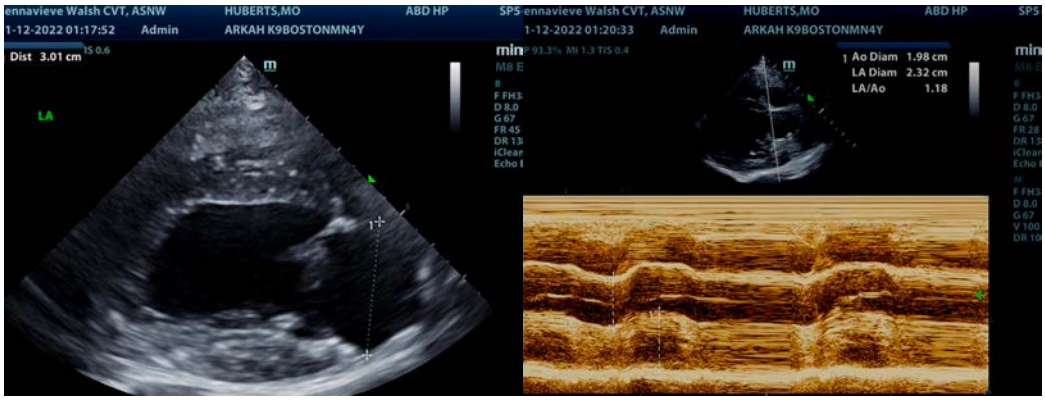
- Stage B1 valvular disease

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

No evidence of volume overload. No treatment recommended. Normal structure and function other than minor valvular disease. Holter monitor with cardiologist review would be ideal in this patient given the patient history. Holter monitor may be obtained from our office.

B1: The heart is stable without clinical disease. No overt contraindication for anesthesia of brief to moderate duration. I suggest Torbutrol premed, Propofol induction, Isoflo maintenance or similar protocol if anesthesia is desired. Blood pressure recommended if not already performed and target white coat negative systolic pressure of < 160 mmHg. If higher than this ACE-inhibitor is suggested to reach this level. Recheck echocardiogram is recommended in 6 months, earlier if murmur grade increases or clinical signs initiate.





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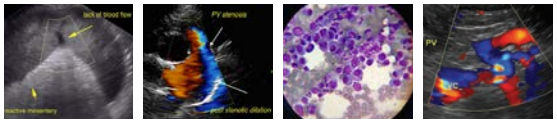

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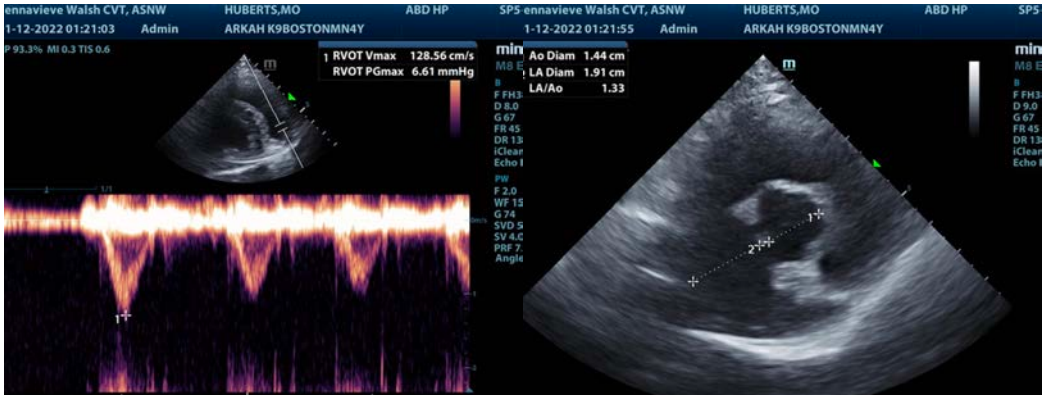

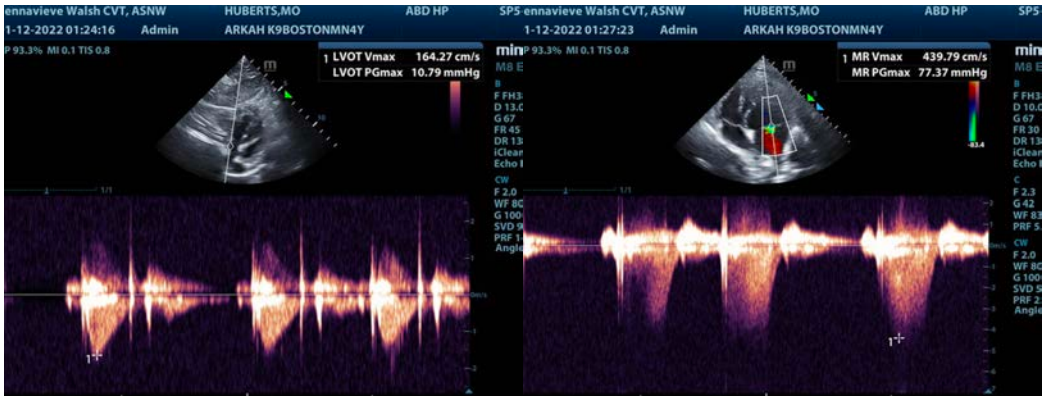

The information and recommendations provided are based on the images presented by the referring veterinarian. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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

Eric.Lindquist@SonoPath.com