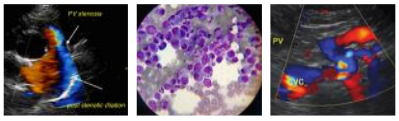
IMAGING PERFORMED BY

IntraPet.com



SonoPath
Clinical Sonography & Telecytology
EDUCATIONAL TELECONSULTATION SERVICES™
1-800-838-4268 info@sonopath.com SonoPath.com

PATIENT
Brutus Merbach

SPECIES
Canine

BREED
English Bulldog

SEX
MN

AGE
2012

WEIGHT
44lbs

INTERPRETED BY
Maggie Machen Lamy, DVM, DACVIM (Cardiology)

HOSPITAL NAME
Pleasantville AH

REFERRING VET
Dr. Gounaris

INVOICE
23534

DATE
4/8/22

PRESENTING CLINICAL SIGNS

History: Presented 4/7 by owner for lethargy, vomiting, inappetence. Tachypneic, normal sinus rhythm/no murmurs ausc, lungs harsh. Rads show cardiomegaly with effusion.
Pertinent abnormal PE/Chem/CBC/UA Results: Neutrophilia 17K.
Current medications: Augmentin 14mg/kg BID, Enrofloxacin 15mg/kg SID, Furosemide 2mg/kg BID.
Sedation used: Not required to complete full diagnostic ultrasound.
Pertinent previous ultrasound results: No previous.
STAT: Requested by DVM
Imaging performed by: Andi Parkinson, RDMS, RVT

ECHOCARDIOGRAM FINDINGS

2D, m-mode, color flow and doppler imaging is available. Massive soft tissue lesion is visualized (5.4 x 5.6cm in best viewed cross-section). The mass appears to be associated with the heart base, seen adjacent to the aortic root. No mitral regurgitation with mild thickening of the mitral valve. LV function and dimension is normal. Left atrium is normal. RA/RV dimensions are markedly increased with septal flattening. Moderate TR; velocity consistent with mild pulmonary hypertension, likely secondary to compression. The pulmonic and aortic valves are normal in appearance. Normal LVOT velocity. No PI identified. No pericardial effusion is seen. Pleural effusion identified.

CARDIAC CHART

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	NA	3.1	NM	1.3	52	84	NM
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	BELOW	BELOW	BELOW	BELOW
PATIENT	NM	1.1	NM	20	2.4	2.7	1.3
*Normal chamber parameters expressed as a mean value (SD)				3	1.27 (5.3)	2.46 (2.46)	1.36 (5.5)
BODY WEIGHT DEPENDENT PARAMETERS				5	1.40 (4.5)	2.74 (5.2)	1.60 (4.7)
**Note: All measurements based upon multi-modal images and methods. An average value is reported.*				10	1.50 (3.8)	3.27 (3.5)	2.06 (3.1)
				15	1.83 (2.0)	3.71 (2.4)	2.43 (2.1)
				20	2.02 (1.9)	4.14 (2.2)	2.80 (2.0)
				25	2.18 (2.4)	4.48 (2.9)	3.10 (2.5)
				30	2.33 (3.3)	4.83 (3.9)	3.39 (3.4)
				35	2.48 (4.3)	5.17 (5.0)	3.69 (4.5)
				40	2.62 (5.2)	5.48 (6.1)	3.96 (5.4)
				50	2.88 (7.1)	6.07 (8.3)	4.46 (7.4)

Adapted from June Boon, Veterinary Echocardiography, 1998
Rishniw M and Hollis NE, J Vet Intern Med 2000; 14:429-435
Hansson et al, Vet Rad and Ultrasound 2002
Bonagura et al. Echocardiography: principles of interpretation, Vet Clin North Am 15:1177, 1995

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

Primary cardiac neoplasia is identified likely compressing the peripheral pulmonary vasculature. Once a mass is impeding blood flow, the patient is at extremely high risk for congestive signs as are seen here (effusion). The right heart is severely enlarged, with mild PAH (likely due to compression).

Given the signalment and the size of the mass, the likely diagnosis is a chemodectoma, however a less common tumor such as ectopic parathyroid, lymphoma, etc. cannot be entirely ruled out without a biopsy. The issue is more of a mechanical obstruction than true pulmonary hypertension, and sildenafil will be of little benefit. The best we can do is remove effusions should they occur and use medications for congestive heart failure to help slow development of fluid accumulation. The size of the mass should be relayed as a grave prognosis, as the patient is already experiencing associated clinical signs that are certainly related (CHF in addition to vomiting/lethargy/anorexia). Supportive care can be attempted for the short term; however, diuretics and cough suppressants are a band aid over a much bigger issue as the tumor continues to grow. Euthanasia should be considered in this case should quality of life suffer in the future.

Going forward there are some options for obtaining more information and palliating this type of cancer. Should the client elect to proceed, referral for a thoracic CT, Oncology/IM consultation, etc can be considered.

High risk will always remain for recurrent effusions (pericardial, pleural or abdominal) and development of arrhythmias/sudden death at home. Monitor at home for progressive abdominal distention, labored breathing and/or lethargy and collapse.

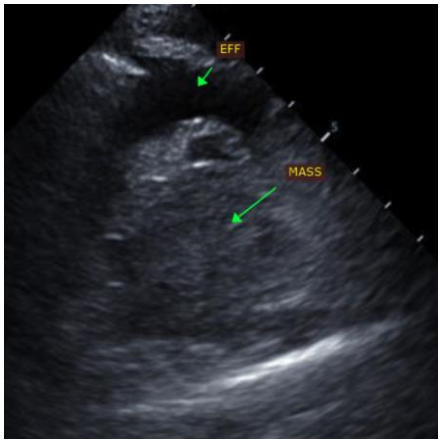
PLAN

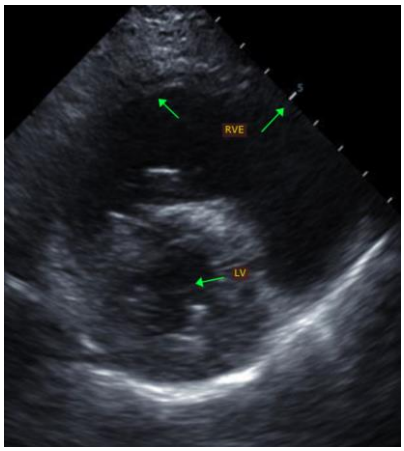
Consider referral for overnight hospitalization/supportive care, advanced imaging/evaluation, etc. If declined, attempt oral therapy +/- thoracocentesis if necessary: Administer Furosemide 1-2mg/kg PO q12h. Administer spironolactone 1-2mg/kg PO q12h. Administer Pimobendan 0.3mg/kg PO q12h. Administer further supportive care including Hydrocodone. Centesis as required for comfort and appetite.

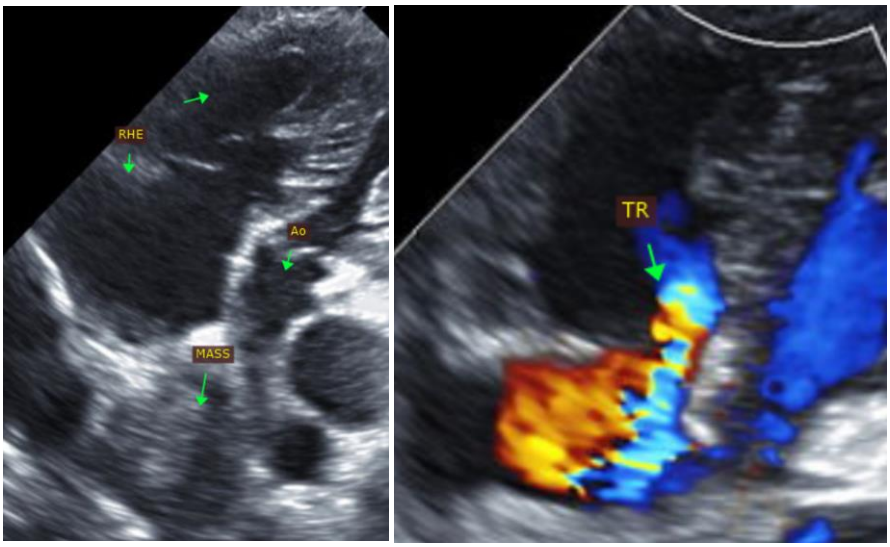
A renal panel is recommended in 5-7 days, then every 2-3 months going forward. Euthanasia should be considered should quality of life suffer at any time.

A recheck echocardiogram to reassess mass dimension and heart size is recommended in 2-3 months.

IMAGES







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. This report was generated using transcription software, and minor dictation errors may be present. If the clinical or image interpretation does not parallel your findings or if I can be of any further assistance please contact me.

Maggie Machen Lamy, DVM
Diplomate of the American College of Veterinary Internal Medicine (Cardiology)
info@sonopath.com