SonoPath
Clinical Sonography & Telecytology
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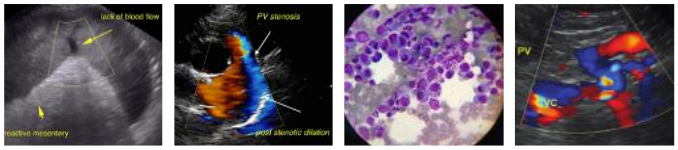

SonoPath.com
1-800-838-4268 info@sonopath.com

PATIENT
Conrad Bridwell

SPECIES
Canine

BREED
Beagle

SEX
Male Neutered

AGE
10 years

WEIGHT
35lbs

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

IMAGING PERFORMED BY
A. Nicastro, DVM

HOSPITAL NAME
Pet Vet Animal Hospital

REFERRING VET
Dr. Allison

INVOICE
32268

DATE
8/9/23

PRESENTING CLINICAL SIGNS

History: Coughing/gagging. Globoid heart seen on chest rads. Loss of serosal detail in abdomen with mild hepatomegaly. Sedated with Torb.

ECHOCARDIOGRAM FINDINGS

2D, m-mode, color flow and doppler imaging is available. Mild diffuse thickening of mitral valve leaflets with no prolapse into the left atrial lumen. Moderate eccentric mitral regurgitation. with Normal MR velocity. The LA is difficult to visualize in standard views; however, mild enlargement is suspected. Mild LV dilation with hyperdynamic myocardial function. The tricuspid valve appears mildly thickened with moderate tricuspid regurgitation. Velocity consistent with moderate PAH. Moderate right atrial and ventricular enlargement. The pulmonic and aortic valves are normal in morphology and mobility. Normal pulmonic and aortic outflow velocities with laminar flow. No obvious aortic or pulmonic insufficiency. Large uniform echogenicity mass is seen encompassing the aortic root; 7.4 x 6.1cm in best viewed cross section. Compression of the distal PA is suspected. Small volume pericardial effusion. No obvious pleural effusion noted. Hepatic congestion suspected.

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	5.4	4.2	NM	NM	52	90	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		1.6	1.3	15.9	NM	3.9	1.9
*Normal chamber parameters expressed as a mean value (SD)				3	1.27 (5.3)	2.46 (2.46)	1.36 (5.5)
				5	1.40 (4.5)	2.74 (5.2)	1.60 (4.7)
				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)

BODY WEIGHT DEPENDENT PARAMETERS

**Note: All measurements based upon multi-modal images and methods. An average value is reported.*

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

A large tumor is identified, likely associated with the aortic root. Given the breed and size of the mass, a chemodectoma is considered most likely; however, hemangiosarcoma would be an alternative differential. The right heart is enlarged with moderate TR and elevated pulmonary pressures, presumably due to peripheral mass compression. Mitral regurgitation with LA enlargement is also identified, suggesting concurrent valve disease. The remainder of the cardiac structure and function are unremarkable.

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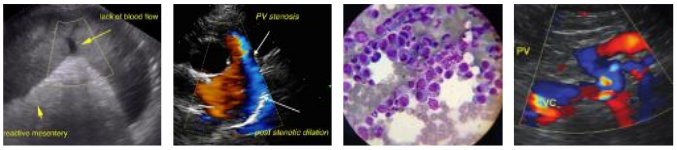

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Effusion is identified within the pericardial space and peritoneum. The amount of pericardial effusion seen today is essentially mild without obvious tamponade. Two broad possibilities for the effusion origin could be considered. First would be a tumor bleed, leading to hemorrhage into the pericardial space. This would not however explain hepatic congestion in the absence of tamponade. The second explanation would be the tumor is compressing the distal pulmonary vasculature and leading to right-sided congestive signs which is suspected. Consider referral for advanced imaging, including advanced echo, CT scan, etc. to fully understand the extent of the lesion.

Going forward, regardless of tumor type the clinical issues are due to a mechanical obstruction of flow through the right heart, which confers a poor to grave prognosis as the mass continues to grow. The mass will likely continue to increase in size, further worsening the obstruction and ultimately leading to recurrent decompensation. The best we can do is remove effusions through tapping when needed and use medications for congestive heart failure to help slow fluid accumulation. The size of the mass and compressive nature should be considered when electing to treat complications down the road. Diuretics are a band aid over a much bigger issue and may or may not be effective. If QOL suffers despite therapy, euthanasia is recommended. Please note medications below.

There are some options for palliating this type of cancer, including radiation and chemotherapy. Full systemic screening to assess for metastasis may be useful (AUS, labs, etc.) when deciding what is appropriate. Consultation with an Internist or Oncologist is recommended in light of echo results. Full systemic screening for metastasis is warranted (AUS, etc.).

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

Highly recommend immediate referral for advanced imaging (CT), abdominal workup, etc. to determine the best course of action. If declined, consider full cardiac medications and assess response: Institute Lasix 1-2mg/kg PO q12h. Institute Spironolactone 1-2mg/kg PO q12h. Institute Pimobendan 0.3mg/kg PO q12h. Institute ACE-I 0.5mg/kg PO q12h. Consider Hydrocodone if needed for quality of life. Consider full systemic evaluation to screen for ancillary lesions.

Monitor renal panel/BP and amount of effusion in 1-2 weeks, sooner if any clinical decline. If QOL is not improved, euthanasia is recommended.

Recheck tumor size in 2-3 months if patient does well.

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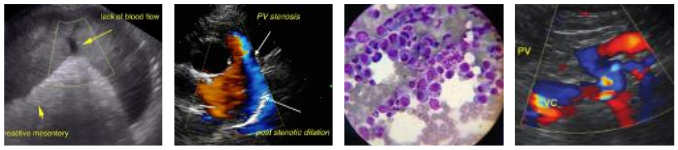

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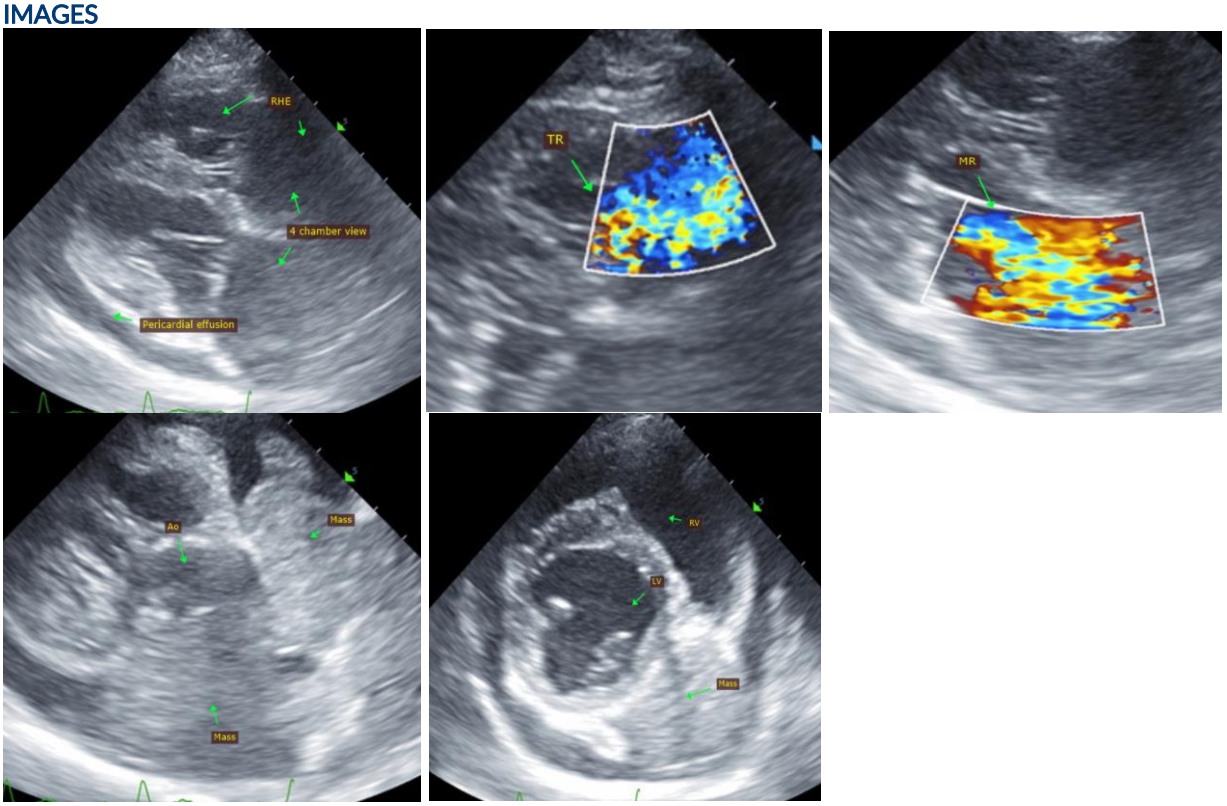
IMAGES



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