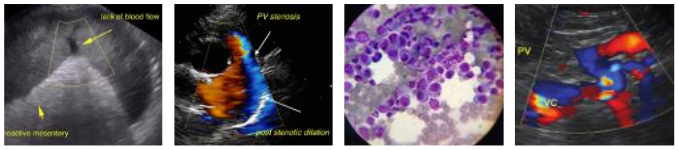
SonoPath
Clinical Sonography & Telecytology
EDUCATIONAL TELECONSULTATION SERVICES™



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

PATIENT
Nora Bielski

SPECIES
Canine

BREED
German Shepherd Mix

SEX
Female Spayed

AGE
6 years

WEIGHT
69.2lbs

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

IMAGING PERFORMED BY
Fred Gromalak, DVM

HOSPITAL NAME
SVS Imaging

REFERRING VET
Dr. Chapman

INVOICE
20948

DATE
9/9/21

PRESENTING CLINICAL SIGNS

History: History of PS, L-R VSD, mild AS, HW disease; diagnosed 3/2018. Assess prior to anesthesia.
-Current medications: Atenolol 12.5mg PO q12h.

ECHOCARDIOGRAM FINDINGS

2D, m-mode, color flow and doppler imaging is available. The anterior leaflet of the mitral valve is thickened in appearance. No obvious mitral regurgitation, minimal left atrial dilation. The LV is largely normal with mild LV hypertrophy. The tricuspid valve appears normal, although not extensively visualized. No obvious TR; however, this is not entirely ruled out. The right heart is not significantly enlarged. The right ventricular is prominent. The main pulmonary artery appears normal. No significant post-stenotic dilation. The pulmonic valve is thickened with an elevated velocity through the region. Trace pulmonic insufficiency. The aortic valve is significantly thickened, although velocity through the region is only mildly elevated. No obvious aortic insufficiency. No subvalvular ridge is visualized; however, an LVOTO is not ruled out. No obvious ventricular septal defect is seen (VSD); however, this region is not extensively examined. No pericardial or pleural effusion noted.

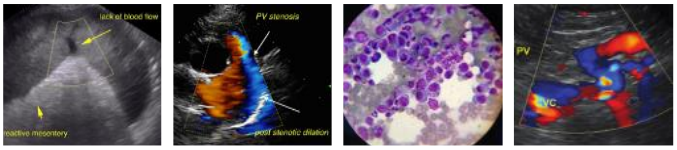
CARDIAC CHART

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	NA	1.3	1.3	39	76	0.69
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	60	2.4	4.7	31.4	3.3	4.1	2.5
*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

FINDINGS & FURTHER RECOMMENDATIONS

Complex congenital heart disease is present as was previously diagnosed. This is not considered an extensive congenital study and visualization is limited. What can be said is the aortic and pulmonic valves are both abnormal, consistent with previous diagnosed stenosis. What is unusual is the right heart is not significantly enlarged despite a severely elevated velocity through the region. Typically, with severe pulmonic stenosis in a middle-aged dog you would suspect significant right heart enlargement, and this is difficult to explain. Additionally, the aortic valve is



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

PATIENT
Nora Bielski

SPECIES
Canine

BREED
German Shepherd Mix

SEX
Female Spayed

AGE
6 years

WEIGHT
69.2lbs

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

IMAGING PERFORMED BY
Fred Gromalak, DVM

HOSPITAL NAME
SVS Imaging

REFERRING VET
Dr. Chapman

INVOICE
20948

DATE
9/9/21

significantly thickened; however, the left heart is largely unremarkable which may support only a mild stenosis as documented on Spectral Doppler. Finally, the VSD is unable to be visualized and no comments can be made on directionality, size, etc. What can be said is there is no significant left atrial enlargement indicating volume overload of the left heart appears to be minimal.

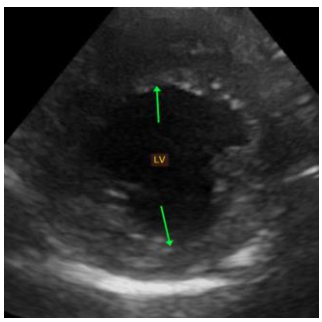
Given that this is a pre-anesthetic screening, **highly recommend referral for an advanced echocardiogram with a local Cardiologist prior to proceeding**. Directionality of the VSD is important, as a right to left or bidirectional shunting may pose significant a contraindication for anesthesia. That being said, based simply upon what is seen here, the risk appears relatively low. If you elect to proceed without an Anesthesiologist involved, avoid heart rate stimulating drugs and use cardiac protective protocols (opioid/benzodiazepine premedication, propofol or alfaxalone induction, isoflurane gas). Pre-oxygenate for 5-10 minutes prior to induction. Monitor for arrhythmias, hypotension, and hypoxia both intra and post-operatively and intervene as necessary. Mild IV fluid restriction is recommended to avoid fluid overload.

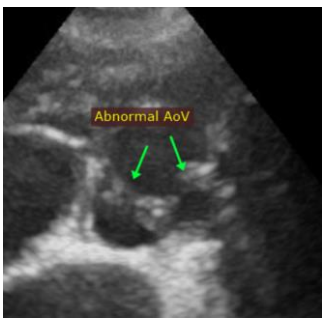
The heart rate appears well controlled on the current dose of Atenolol, which should be continued life-long. Patient will always be at risk for congestive heart failure, malignant arrhythmias, and/or sudden death. Monitor for any change in breathing, fainting episodes or exercise intolerance.

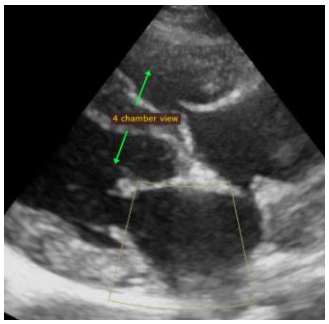
PLAN

Highly recommend referral for advanced echocardiography prior to proceeded. If declined, reassess echocardiogram annually, sooner if any syncope or other associated signs arise.

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