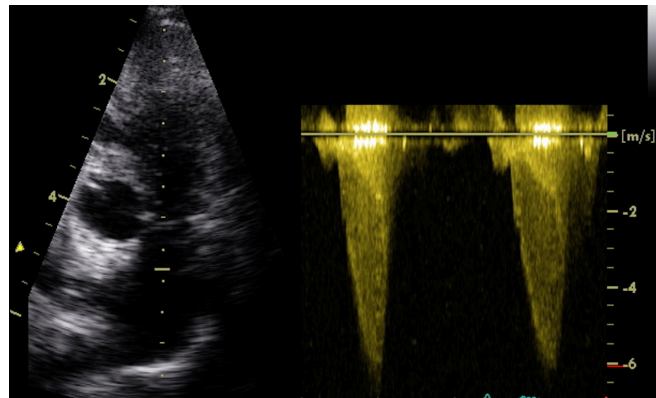


Pulmonic Stenosis

Pulmonic stenosis (PS) is a congenital heart condition that causes a pet to be born with a narrowed and thickened pulmonic valve. The pulmonic valve is located on the right side of the heart where it separates the right ventricle from the pulmonary artery. In pets with PS, the abnormal valve cannot open properly, thus making it difficult for blood to pass through the pulmonic valve and out to the lungs. In order for a normal amount of blood to move through the narrowed valve with each heartbeat, the blood must move at a significantly faster speed than normal. It is this high-speed blood flow that creates the audible heart murmur that is associated with this disease.

PS can range from mild to severe. Patients with mild PS are likely to live their entire life without developing any symptoms of the disease, while patients with more severe forms may develop symptoms such as exercise intolerance, fainting spells, right-sided heart failure (fluid build up inside the abdomen) and even sudden death.

The diagnosis of PS is based on the results of an echocardiogram (cardiac ultrasound). The echocardiogram allows the cardiologist to directly visualize the pulmonic valve, measure the speed of blood flow through the valve, and look for evidence of heart enlargement or changes in heart function. It is common for more severe cases of PS to develop substantial thickening and enlargement of the right side of the heart. The severity of PS is determined by measuring the speed of blood flow through the narrowed valve. This speed is then converted to a pressure gradient. Pressure gradients of 80 mmHg or higher are considered severe.



Measurement of the speed of blood flow across the pulmonic valve in a patient with severe PS. In this case the speed peaks around 6 meters/ second. The speed across a normal pulmonic valve should be approximately 1 meter/second.

Treatment for patients with PS varies based on the severity of their disease. Mild cases may only need occasional monitoring. Patients with severe PS and/or noticeable symptoms of their heart disease are candidates for a procedure called a balloon valvuloplasty. This is a catheter-based procedure performed by a veterinary cardiologist where a balloon catheter is fed down the jugular vein in the neck, into the heart, and across the narrowed valve. Once in position the balloon is inflated in an attempt to open the valve and allow the valve leaflets to move more freely. When successfully performed, this procedure may allow severely affected patients to live a normal or nearly normal life.