Restrictive Ventricular Septal Defects in Cats

Adapted by Dr. Lisa Mekka from "Ventricular Septal Defects in Cats" by
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What is a ventricular septal defect?

A ventricular septal defect (VSD) is a congenital cardiac anomaly, or an abnormality in the heart that is present at birth rather than beginning later in life. Specifically, a VSD is characterized by a hole in the septum (soft tissue wall) that divides the more muscular "bottom" portion of the heart into two chambers—the left and right ventricles. These are the main pumping chambers of the heart, and they are normally completely separated from one another by the septum.

The left ventricle is the strongest chamber in the heart and generates high pressure in order to push blood through most of the body. The right ventricle has the sole purpose of pumping blood to the lungs so it generates much lower pressure than the left ventricle. For this reason, when a VSD is present, blood tends to flow (shunt) through the defect from the left ventricle into the right ventricle under most conditions.

Fortunately, the majority of VSDs are small. These are called **restrictive VSDs** because the small size of the defect naturally restricts the amount of blood that flows through it. Most restrictive VSDs do not cause health issues or lead to reduced heart function over time (heart disease.)

How is a VSD diagnosed?

A congenital heart condition may first be suspected following detection of a heart murmur during physical examination of a young cat. A murmur is an abnormal "whooshing" sound associated with the normally crisp heart sounds heard while listening to the heart with a stethoscope. Although many different conditions result in the presence of a heart murmur, the location where the murmur is loudest may raise suspicion for a VSD.

Diagnosis of a VSD is confirmed by performing an echocardiogram. This is an ultrasound examination of the heart during which information is collected about the size and function of the heart as well as blood flow through its chambers. In the case of a VSD, observation of blood flow through a hole in the ventricular septum leads to this specific diagnosis.

How is a VSD treated?

Restrictive VSDs typically do not require treatment. Long-term prognosis is excellent in these cases, and although periodic re-evaluation is still warranted to ensure that the heart's health is stable, a normal lifespan is common.

What should I watch for?

With or without a VSD, many cats develop heart disease later in life. Symptoms may include **lethargy, weakness, intolerance to activity or exercise, coughing, and rapid or labored breathing**. In the most severe cases, weakness may be noted particularly following activity or exertion, and **collapse or fainting** may occur. Observation of even the milder of these symptoms warrants a visit to your regular veterinarian. More severe symptoms, such as difficulty breathing or collapse, require immediate attention on an emergency basis. Always inform the attending veterinarian about your cat's ventricular septal defect to help them interpret test results and diagnose the underlying issue as quickly as possible.

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