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## **Left Ventricular Aneurysm**

### **What is an aneurysm?**

An aneurysm refers to an unusual dilation (bulging or ballooning) of a structure. Aneurysms are typically associated with blood vessels.

### **What is an aneurysm of the left ventricle?**

An aneurysm of the left ventricle is bulging or blistering of an area of tissue in the left ventricle.

The left ventricle is the main pumping chamber of the heart. It pumps blood full of oxygen to the body. There are three arteries that supply the left ventricle with blood. They are called coronary arteries. When one of these becomes blocked, a heart attack can occur with a resulting portion of the left ventricle being damaged. In the process of healing, the damaged portion of the heart wall becomes scarred and thinned out. Occasionally this thinned segment becomes stretched out and bulges like a blister on an inner tube.

Most people who have a heart attack recover without developing an aneurysm. However, if the heart attack involves a large area of the heart muscle, an aneurysm may develop.

In aneurysms that occur in blood vessels, the risk of rupture is a serious concern. Fortunately, left ventricular aneurysms rarely rupture but they can affect the heart's performance.

Left ventricular aneurysms can be very small outpouchings on the heart (about the size of a dime). They can also bulge out to twice the normal size of the heart, or any size in between. Aneurysms generally form and get bigger during the first few months after a heart attack.

### **Symptoms of left ventricular aneurysm:**

Congestive heart failure (reduced ability of the heart to pump blood throughout the body), is a dangerous complication usually associated with large left ventricular aneurysms. This occurs because the heart must now pump blood into the aneurysm as well as out to the body, which creates an added load on the heart. This added load often leads to congestive heart failure.

Because blood is stagnant within aneurysms, blood clots often form in them. The danger associated with these blood clots is that fragments of them (emboli) can break loose, lodge in a blood vessel of the brain and cause a stroke.

An aneurysm of the left ventricle can cause an irregular heartbeat (ventricular tachycardia and ventricular fibrillation). These rhythm disturbances can result in fainting episodes and sudden cardiac death.

**Diagnosis:**

A cardiac ultrasound (echocardiogram) is a useful noninvasive way to study left ventricular aneurysms. This simple test uses sound waves to make a picture of the aneurysm.

Your doctor may also perform a cardiac catheterization. This test allows your doctor to view the movement of blood throughout the coronary arteries and heart.

The test involves the placement of a small tube into an artery of the arm or leg that advances into your heart through which the doctor can inject a dye material. The dye material allows the doctor to view a moving picture of blood flow through your heart. This test is necessary if surgical correction is contemplated.

**Treatment:**

Because the underlying cause of left ventricular aneurysm is a heart attack, the best treatment is prevention. By controlling the risk factors that lead to hardening of the arteries, heart attacks can often be prevented. For those who have a heart attack, prompt treatment can often minimize the amount of damage caused and, therefore, prevent aneurysm formation. Early recognition and treatment are the best ways to prevent long-term problems.

Once an aneurysm is present, treatment depends upon the problems associated with the aneurysm. If there is congestive heart failure, surgical resection of the aneurysm (cutting out the aneurysm and sewing the area of the heart back together) may be necessary. Coronary artery bypass surgery is usually carried out at the same time. Often, blood thinners are used to prevent clotting within the aneurysm. If there are significant heart rhythm disturbances, specialized treatment may be required.