Heart Disease: Conditions and Treatments

**THE CONDITION:**
Mitral Valve Disease

The mitral valve is a complex structure that controls blood flow through the left side of the heart. When open, the mitral valve allows blood to flow into the heart's main pumping chamber, the left ventricle. When the left ventricle contracts to push blood through the body, the mitral valve closes to prevent blood from flowing back toward the lungs.

Sometimes the mitral valve is abnormal from birth or becomes damaged by infection. More often, mitral valve structures become damaged with age or from coronary artery disease. Whatever the cause, an abnormal or damaged mitral valve cannot completely seal the heart's left ventricle. With an incomplete seal, blood can escape the left ventricle and flow backwards through the mitral valve. This conflicting force can make the heart work harder, leading to further mitral valve damage and other potential complications such as congestive heart failure.

**THE TREATMENT:**
Mitral Valve Repair

Surgical repair involves delicate reconstruction of native valve tissues in order to restore proper function. The most common approach to repair requires the surgeon to saw open the breastbone and spread the ribs to gain direct access to the heart. Cutting the sternum and opening the rib cage — the body's natural protective structure for the heart — can prolong healing time, increase risk of infection, serious complications and even mortality.
THE CONDITION:
Coronary Artery Disease

Coronary artery disease is a common form of heart disease that occurs when the arteries that bring blood to the heart narrow or become clogged by plaque. Plaque is a buildup of fat, cholesterol, calcium and other substances in the blood. When some of the plaque loosens and breaks off, a blood clot can form, resulting in a blockage that slows blood flow to your heart. This blockage can cause chest pain or angina. Angina can also feel like pressure or squeezing in your chest, shoulders, arms, neck, jaw, or back.

Coronary artery disease can lead to a heart attack, which occurs when blood flow to an area of your heart is completely blocked. A heart attack can cause serious health problems or even death.

Coronary artery disease is the most common type of heart disease and the leading cause of death among Americans, according to the American Heart Association. More than 16 million people have some form of the disease and it claims nearly 500,000 lives a year.

THE TREATMENT:
Coronary Artery Bypass Surgery

Treatment for coronary artery disease may include lifestyle changes, medicines and procedures. The goal is to ease symptoms and reduce heart attack risk. For severe cases, surgery is needed to widen or unblock clogged arteries and increase blood flow to the heart. This surgery is known as coronary artery bypass or coronary revascularization.

In traditional bypass, doctors access the heart by making an 8- to 10-inch incision down the chest and opening the ribs. This is known as a sternotomy. Surgeons then take a segment of a healthy blood vessel from your chest, leg or arm and attach one end of that vessel to a healthy artery and the other end to the diseased coronary artery just past the clogged area. This creates a new channel, allowing blood to flow freely to your heart again.

A pump oxygenator (heart-lung machine) is used for most coronary bypass operations. It takes over the function of the heart and lungs during surgery. Recently, more surgeons are performing off-pump coronary artery bypass surgery, where the heart continues beating while the bypass graft is sewn in place. In many patients, an off-pump approach may reduce serious complications during or after surgery.

ROBOTIC-ASSISTED SURGERY:
A Less Invasive Surgical Procedure

If you have been told you need coronary bypass or mitral valve repair (MVR) surgery, ask your doctor about robotic-assisted surgery. Robotic-assisted coronary bypass is performed without the need for a heart-lung machine. Robotic-assisted MVR is a much less invasive procedure than the traditional approach. Both use a minimally invasive approach with only small incisions between the ribs. This procedure uses a state-of-the-art surgical system designed to help your surgeon see vital anatomical structures more clearly and to perform a more precise surgical procedure. Robotic-assisted surgery avoids the need for a sternotomy (open chest incision), its associated risks and complications. It can also offer numerous potential benefits over open surgery, including:

- Shorter hospital stay and faster recovery
- Less pain, scarring and risk of infection
- Significantly less blood loss and need for blood transfusions
- Quicker return to normal activities
- Significantly less risk of heart attack and stroke following surgery
- Superior results with less need for repeat surgery
- Significantly higher patient satisfaction

As with any surgery, these benefits cannot be guaranteed, as surgery is patient- and procedure-specific.
THE ENABLING TECHNOLOGY: da Vinci® Surgical System

The da Vinci Surgical System is designed to provide surgeons with enhanced capabilities, including high-definition 3D vision and a magnified view. Your doctor controls the robotic surgery system, which translates his or her hand movements into smaller, more precise movements of tiny instruments inside your body. Though it is often called a “robot,” da Vinci cannot act on its own. Instead, the surgery is performed entirely by your doctor.

Together, robotic technology allows your doctor to perform complex procedures through just a few tiny openings. As a result, you may be able to get back to life faster without the usual recovery following major surgery.

The da Vinci System has been used successfully worldwide in hundreds of thousands of procedures to date.

Our cardiothoracic surgeon is one of a growing number worldwide who has been successfully trained in providing leading-edge treatments such as Robotic Assisted Heart Bypass and Mitral Valve Repair. These procedures are setting new standards for the surgical treatment of heart disease.

For more information on robotic-assisted heart surgery, please visit:

www.peacehealth.org/roboticsurgery

Call 877-291-2362 to speak with our Surgery Coordinator.
The Oregon Heart & Vascular Institute uses the latest innovations in heart surgery to maintain its position as one of the busiest and most successful cardiovascular surgery centers in the Northwest. Surgeons here have performed more than 18,000 cardiovascular operations since OHVI's inception.

ROBOTIC-ASSISTED HEART SURGERY:
Experience makes the difference

David Duke, MD, is a board-certified cardiothoracic surgeon who brings more than 20 years of experience to the robotic surgery program. With an expert team of surgical assistants and a fully-dedicated digital heart and vascular surgery suite, you’ll receive exceptional care from one of the most comprehensive robotic heart surgery programs in the state.

Questions about the robotic-assisted surgery program at Sacred Heart? Need more information? Would you like to make an appointment with the surgeon? Please contact our Surgery Coordinator to take the next step.

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