



## Mechanism of Heart Valve Disease and its Treatment Methods

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### Description

Heart valve disease is a condition that affects the valves of the heart, impairing their ability to regulate the flow of blood between the different chambers of the heart and the rest of the body. This disease can cause a wide range of symptoms, including shortness of breath, chest pain, and fatigue; it can result in severe complications such as heart failure.

### Causes of heart valve disease

Heart valve disease can have a variety of causes, including congenital defects, infections, and damage from other health conditions. Some of the most common causes of heart valve disease include:

**Congenital defects:** Congenital heart valve disease is a condition that occurs when the valves of the heart do not develop properly before birth. This can cause the valves to be too narrow, thick, or have abnormal openings, which can impair their function.

**Infections:** Infections such as endocarditis can damage heart valves and impair their function. Endocarditis is an infection of the lining of the heart chambers and valves that can occur when bacteria or other micro-organisms enter the bloodstream and infect the heart.

**Degenerative changes:** Overtime, the heart valves can become strong and narrow due to a buildup of calcium deposits or other degenerative changes, impairing their ability to regulate blood flow.

**Rheumatic fever:** It is an inflammatory condition that can occur after a streptococcal infection. This condition can cause scarring and damage to the heart valves, impairing their function.

### Symptoms of heart valve disease

Heart valve disease can cause a wide range of symptoms, including:

**Shortness of breath:** This is a common symptom of heart valve disease and occurs because the heart is unable to pump enough blood for the requirements of the body.

**Chest pain:** It can occur when the heart is not receiving sufficient oxygen-rich blood, resulting in a tightness or pressure in the chest.

**Fatigue:** Fatigue is a common symptom of heart valve disease and occurs because the heart is working harder than normal to pump blood through the body.

**Dizziness or fainting:** These symptoms can occur when the heart is not able to pump sufficient blood to the brain, causing a temporary loss of consciousness.

### Diagnosis of heart valve disease

Heart valve disease is typically diagnosed through a combination of physical exams, medical history, and imaging tests. During a physical exam, the doctor will listen to the heart with a stethoscope to check for abnormal heart sounds, such as a heartbeat. They may also check for other symptoms such as shortness of breath, chest pain, or swelling in the legs. Imaging tests such as echocardiography, Magnetic Resonance Imaging (MRI), or Computed Tomography (CT) scans may be used to provide the structure and function of the heart valves. These tests can help to identify any abnormalities in the valves, such as narrowing or regurgitation.

### Treatment of heart valve disease

Treatment for heart valve disease depends on the severity of the condition and the underlying cause. In some cases, medication may be prescribed to help manage symptoms, such as blood pressure medications or diuretics to reduce swelling. In other cases, surgery may be required for maintenance or replace the damaged heart valve.

Surgical options for heart valve disease include:

**Valvuloplasty:** It is a minimally invasive procedure that involves inserting a catheter containing an inflation device into the heart valve to expand the valve area.

**Valve repair:** Valve repair surgery involves repairing the damaged valve by removing excess tissue, repairing or replacing the valve leaflets, or repairing any holes or splits in the valve.

**Valve replacement:** Valve replacement surgery involves replacing the damaged valve with a new valve.

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