



## Research article

**A short review on mitral valve prolapse****Akshay Rajgaria\*, Prajna Tripathy**

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Severe mitral regurgitation requiring surgery is the most common life-threatening complication of mitral valve prolapse (MVP) and is due to progressive myxomatous change in the valve. The overall prognosis of patients with mitral valve prolapse is excellent, but a small subset will develop serious complications, including infective endocarditis, sudden cardiac death, and severe mitral regurgitation. Mitral Valve Prolapse (MVP) is the most frequently diagnosed cardiac valvular abnormality. It is a primary disorder with familial occurrence. MVP is a disease of the young with a significantly higher incidence in women compared to men. The most characteristic clinical finding is a midsystolic click and late systolic murmur detected on cardiac auscultation.

**Keywords:** Gaur gum, Chitosan, Nanoparticle, Scanning electron microscopy (SEM), FT-IR, AFM.**INTRODUCTION**

Mitral valve prolapse (or floppy mitral valve syndrome, systolic click murmur syndrome or billowing mitral leaflet) is a valvular heart disease characterized by the displacement of an abnormally thickened mitral valve leaflet into the left atrium during systole. It is the primary form of myxomatous degeneration of the valve. There are various types of MVP, broadly classified as classic and neoclassic. In its nonclassic form, MVP carries a low risk of complications and often can be kept minimal by dietary attention. In severe cases of classic MVP, complications include mitral regurgitation, infective endocarditis, congestive heart failure, and, in rare circumstances, cardiac arrest.

The diagnosis of MVP depends upon echocardiography, which uses ultrasound to visualize the mitral valve. The prevalence of MVP is estimated at 2-3% of the population.

The condition was first described by John Brereton Barlow in 1966. In consequence, it may also be referred to as Barlow's Syndrome, and was subsequently termed mitral valve prolapse by J. Michael Criley. Mitral valve prolapse is associated with many other symptoms and conditions. But experts aren't sure that mitral valve prolapse is what causes them <sup>[1]</sup>.

**CAUSES**

When your heart is working properly, the mitral valve closes completely during contraction of the left ventricle and prevents blood from flowing back into your heart's upper left chamber (left atrium). But in some people with mitral valve prolapse, one or both of the mitral valve's flaps (leaflets) have extra tissue bulging (prolapsing) like a parachute into the left atrium each time the heart contracts. The bulging may keep the valve from closing tightly. When blood leaks backward through the valve, it's called mitral valve regurgitation. This may not cause problems if only a small amount of blood leaks back into the atrium. More severe mitral valve regurgitation can cause symptoms such as shortness of breath, fatigue or lightheadedness <sup>[2]</sup>.

**SIGN AND SYMPTOMS**

Most people with mitral valve prolapse have no symptoms, however, those who do commonly complain of symptoms such as fatigue, palpitations, chest pain, anxiety, and migraine headaches. Stroke is a very rare complication of mitral valve prolapse. Fatigue is the most common complaint, although the reason for fatigue is not understood. Patients with mitral valve prolapse may have imbalances in their autonomic nervous system, which regulates heart rate and breathing.

Such imbalances may cause inadequate blood oxygen delivery to the working muscles during exercise, thereby causing fatigue. Sharp chest pains are reported in some patients with mitral valve prolapse, which can be prolonged. Unlike angina, chest pain with mitral valve prolapse rarely occurs during or after exercise, and may not respond to nitroglycerin. Anxiety, panic attacks, and depression may be associated with mitral valve prolapse. Like fatigue, these symptoms are believed to be related to imbalances of the autonomic nervous system. Migraine headaches have been occasionally linked to mitral valve prolapse. They are probably related to abnormal nervous system control of the tension in the blood vessels in the brain. Mitral valve prolapse may be rarely associated with strokes occurring in young patients. These patients appear to have increased blood clotting tendencies due to abnormally sticky blood clotting elements, called platelets. Often the severity of symptoms in patients with mitral prolapse is inversely correlated to the degree of anatomic abnormality [3].

## TREATMENT

Individuals with mitral valve prolapse, particularly those without symptoms, often require no treatment. Those with mitral valve prolapse and symptoms of dysautonomia (palpitations, chest pain) may benefit from beta-blockers (e.g., propranolol). Patients with prior stroke and/or atrial fibrillation may require blood thinners, such as aspirin or warfarin. In rare instances when mitral valve prolapse is associated with severe mitral regurgitation, mitral valve repair or surgical replacement may be necessary. Mitral valve repair is generally considered preferable to replacement. Current ACC/AHA guidelines promote repair of mitral valve in patients before symptoms of heart failure develop. Symptomatic patients, those with evidence of diminished left ventricular function, or those with left ventricular dilatation need urgent attention [4].

## Surgery

Though most people with mitral valve prolapse don't need surgery, your doctor may suggest surgical treatment if you have severe mitral valve regurgitation with or without symptoms.

Severe mitral valve regurgitation can eventually cause heart failure, preventing your heart from effectively pumping blood. If regurgitation goes on too long, your heart may be too weak for surgery.

If your doctor suggests surgery, your doctor may suggest repairing or replacing the mitral valve. Valve repair and replacement may be performed using open-heart surgery or minimally invasive surgery. Minimally invasive surgery involves smaller incisions and may have less blood loss and a quicker recovery time than open surgery [5].

Valve repair. Mitral valve repair is a surgery that preserves your own valve. For most people with mitral valve prolapse, this is the preferred surgical treatment to correct the condition. Your mitral valve consists of two triangular-shaped flaps of tissue called leaflets. The leaflets of the mitral valve

connect to the heart muscle through a ring called the annulus. The surgeon can modify the original valve (valvuloplasty) to eliminate backward blood flow. Surgeons can also repair the valve by reconnecting valve leaflets or by removing excess valve tissue so that the leaflets can close tightly. Sometimes repairing the valve includes tightening or replacing the annulus. This is called an annuloplasty. It is important to ensure that your surgeon is experienced in performing mitral valve repair. Valve replacement. Your surgeon may perform a valve replacement if valve repair isn't possible. In valve replacement surgery, the damaged mitral valve is replaced by an artificial (prosthetic) valve. Artificial valves are mechanical or tissue valves [6].

Mechanical valves may last a long time. However, if you have a mechanical valve, you must use an anticoagulant medication, such as warfarin (Coumadin), for the rest of your life to prevent blood clots from forming on the valve. If a blood clot forms on the valve and breaks free, it could travel to your brain and cause a stroke.

Tissue valves are made from animal tissue such as a pig or cow valve. These kinds of valves are called bioprostheses. They may wear out over time and need replacement. However, an advantage of the tissue valve is that you don't have to use long-term anticoagulant medication [7, 8].

## CONCLUSION

Mitral-valve prolapse is considerably less common than previously reported among young patients with stroke or transient ischemic attack, including unexplained stroke, and no more common than among controls.

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