Acquired valvular heart diseases may manifest as insufficiencies (i.e., the incomplete closure of the valve), as a stenosis (i.e., a narrowing of the valve), or as a combined valvular defect. In principle, all valves can be affected. The aortic valve stenosis and the mitral regurgitation are particularly frequent.

Mitral Valve Prolapse

During late systole the mitral valve leaflets cove back into the left atrium. The diagram shows the leaflets lying behind an imaginary line drawn between the posterior aortic root and the atrioventricular groove.

Mitral valve prolapse syndrome refers to the occurrence of symptoms in the event of a mitral valve prolapse. This is a common abnormality of adulthood and does not generally require treatment, as long as it remains asymptomatic.

Definition of Mitral Valve Prolapse

The mitral valve prolapse refers to the bulging of parts of the mitral valve cusp.
during systole in the left atrium. If symptoms occur, the disease is called mitral valve prolapse syndrome. The mitral valve prolapse can result in mitral regurgitation, and considered the most common cause of isolated mitral regurgitation.

Epidemiology of Mitral Valve Prolapse

Prevalence of mitral valve prolapse

Mitral valve prolapse is common in industrialized countries. It’s the most common cardiac valve anomaly in adulthood. 3-4% of adults have this anomaly, for which an \textit{autosomal dominant inheritance} is suspected. Women are affected more often than men.

Etiology of Mitral Valve Prolapse

Causes of mitral valve prolapse

The reason for the mitral valve prolapse may be a \textit{disproportion in the size of the valves, the left ventricle, and the valve retaining apparatus}. \textit{Connective tissue weaknesses}, such as Marfan syndrome or myxomatous degeneration, can also be a cause.

Classification of Mitral Valve Prolapse

Types of mitral valve prolapse

A distinction is made between a \textit{primary idiopathic mitral valve prolapse}, which involves, inter alia, the disproportionate sizes and myxomatous changes, and a \textit{secondary mitral valve prolapse}. The secondary form includes systemic diseases such as Marfan syndrome, but also CHD or an atrial septal defect, for example.

Symptoms and Clinical Presentation of Mitral Valve Prolapse

Only about 10% of affected individuals show symptoms. These include \textit{arrhythmias} and \textit{palpitations, syncope, dyspnea, and diminished performance}, as well as \textit{anxiety} and \textit{atypical chest pain}.

Diagnosis of Mitral Valve Prolapse

Exam and radiological examination of mitral valve prolapse

The exam often shows an \textit{asthenic body type} with a \textit{decreased body weight} and \textit{hypotension}. During auscultation, a \textit{mid-systolic clicking sound} can be heard over cardiac apex, followed by a \textit{short systolic murmur of the mitral regurgitation}, as well as a late systolic murmur can be heard. These sounds can be shifted toward the early systole when standing or during the Valsalva maneuver, and toward the late systole when squatting. The \textit{ECG} is often unremarkable, possibly characterized by a flattened T.
Echocardiography can securely identify the mitral valve prolapse. The so-called hammock phenomenon can be observed here, when the mitral valves are curved into the left atrium.

Image: “Transesophageal Echocardiogram of Mitral Valve Prolapse” by JHeuser. Licence: CC BY 3.0

Treatment of Mitral Valve Prolapse

Treatment options of mitral valve prolapse

If patients are asymptomatic and have no arrhythmias or mitral regurgitation, no treatment is necessary. Re-checks should be performed in five-year intervals. Patients with higher-grade mitral regurgitation should, however, observe some specific behaviors. This includes maintaining a normal weight, abstaining from nicotine, alcohol and caffeine, as well as avoiding strenuous exercise and sports. Re-checks should be performed in 1-to-3-year intervals in these cases.

Complications of Mitral Valve Prolapse

A mitral valve prolapse can lead to mitral regurgitation. Endocarditis and arrhythmias are also among the list of complications, which results in the risk of arterial embolisms. Sudden cardiac death occurs at an incidence rate of approximately 1%. For prophylaxis of complications, oral anticoagulants may be used, as well as an endocarditis prophylaxis. The administration of antiarrhythmic or an ICD implantation may be indicated as well.

References

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