Left ventricular postinfarction pseudoaneurysm

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Abstract

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Abstract

Despite early coronary revascularisation, postinfarction pseudoaneurysm remains a serious complication of coronary artery disease. Urgent diagnostics and surgery are mandatory for good clinical outcome. Here were report a case of left ventricular pseudoaneurysm undergoing urgent cardiac surgery.

Clinical Summary

A 52-year-old woman presented in out-patient clinic for the follow-up of a left ventricular thrombus after an anterior myocardial infarction due to chronic occlusion of distal left anterior descending artery three months earlier. She was treated conservatively and myocardial viability diagnostics were planned. Transthoracic echocardiography revealed a moderate left ventricular function and a free wall rupture contained by an apical pseudoaneurysm (Figure 1A, asterisk). Computed tomography of the heart confirmed the presence of a partially thrombosed left ventricular pseudoaneurysm (Figure 1B, asterisk). The patient underwent cardiac surgery. After the resection of the aneurysm (Figure 1C), endoventricular patch plasty (Dor) technique was applied for exclusion of the rupture with a double patch (Figure 1D). The patient recovered fully and remained asymptomatic. Follow-up echocardiography (Figure 1E) and magnetic resonance imaging (Figure 1F) showed a good left ventricular function without intracardiac thrombus and excluded apical pseudoaneurysm (Figure 1E and 1F, arroheads).

Discussion

Postinfarction pseudoaneurysm is defined as an ischemic myocardial rupture contained by the pericardium. Although the incidence of postinfarction pseudoaneurysms is decreasing due to early coronary revascularization, it remains a serious complication of myocardial infarction. Most patients with pseudoaneurysms are asymptomatic. However, pseudoaneurysm-associated complications including heart failure, arrhythmia, systemic embolism and rupture are catastrophic with high mortality. Prompt diagnosis and urgent repair are mandatory to prevent further complications (1-3).

The goal of repair is to restore left ventricular geometry and improve function. Surgical repair has been the cornerstone therapy option for the treatment of postinfarction pseudoaneurysm. The endoventricular circular patch plasty, also known as the 'Dor technique', is the preferred surgical strategy in exclusion of left ventricular pseudoaneurysms, especially for pseudoaneurysms with large neck (4-5). In patients with previous cardiac surgery, transaortic or transmitral access can be an alternative approach. The latter strategy offers several advantages, including hemostatic repair without resection of the pseudoaneurysm and no risk of myocardial damage in cases with adhesions or coronary artery bypass grafts (6).

In high-risk patients for surgery, transcatheter pseudoaneurysm closure is an alternative strategy in selected cases. Cliff et al described the first successful transcatheter pseudoaneurysm closure in 2004 using a septal occluder (7). A small retrospective study including patients demonstrated the feasibility and safety of this approach. Preoperative imaging and patient tailored approach are the cornerstones of best outcome (8).

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Legend

Figure: Preoperative transthoracic echocardiography (A) and computed tomography (B) of the left ventricular apical pseudoaneurysm. Operative finding after the resection of the pseudoaneurysm (C) and endoventricular circular patch plasty (D). Postoperative echocardiographic (E) and magnetic resonance imaging (F) of the repaired pseudoaneurysm.