References


eComment: Islets technique to reduce endarterectomized area included into graft during left anterior descending coronary artery endarterectomy

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The rapidly growing use of percutaneous coronary intervention for myocardial revascularization has led to a fundamental change in the patient subset referred to coronary artery bypass grafting surgery. Therefore, surgeons are facing an increasing number of patients with advanced and diffuse coronary artery disease, as well as an increasing number of patients (whose coronary artery lesions have been stented) with intact restenosis. Thus, we read with great interest the report by Uchimuro and colleagues [1] presenting acute thrombosis following endarterectomy of stented left anterior descending (LAD) coronary artery. We would like to congratulate the authors for the successful treatment of this life-threatening complication. However, it would be of interest to mention the patient’s predischarge left ventricular ejection fraction, as preoperative value was 67%.

We have recently presented a patient in whom the endarterectomy of the LAD coronary artery ended up as a technically unsatisfactory procedure [2]. Finally, along 9 cm of endarterectomized LAD area, we were left with only three segments (‘islets’) of properly endarterectomized coronary bed areas, the third one extending as a very distal part of LAD. These ‘islets’ were separated with totally disintegrated coronary bed portions. These three segments were incorporated into a venous graft, with the inflow obtained from the left internal thoracic artery (LITA). On the 8th postoperative day a 64-slice CT confirmed that the grafted segments of the LAD were patent. Postoperative transthoracic echocardiography confirmed no change in the ejection fraction.

The major concern following coronary artery endarterectomy (CAE) is that the endarterectomized arterial wall acts as a trigger for the new thrombus formation, as an increase of platelet-activating factor was observed in damaged LADs in a canine model, as well as in endarterectomy samples that were taken from the severely diseased coronary arteries of patients with diffuse coronary artery disease [3]. Another major concern regarding CAE is the development of myofibrointimal proliferation [4], which impairs early and long-term clinical and angiographic results.

In our patient [2] all successfully endarterectomized LAD segments were incorporated into the venous graft, with the inflow obtained from the LITA. In such a manner, the endarterectomized area is reduced (due to the exclusion of totally disintegrated LAD areas) and endothelial covering might be achieved rapidly, decreasing the risk of thrombus formation in the early stage and myofibrointimal proliferation later on. Having been encouraged with the outcome in this patient, in the next two patients we have reduced the surface of the endarterectomized LAD coronary bed included into the LITA graft. The in situ LITA conduit connected distal (end-to-end) and proximal (side-to-end) parts of the endarterectomized LAD. Only the parts containing the origin of large septal and diagonal branches were included in the conduit. Although postoperative transthoracic echocardiography confirmed no changes in the patients’ ejection fractions, we do believe that with a reduction of the endarterectomized coronary bed area included in the arterial (venous) conduit, we can decrease the risk of thrombus formation in the early stage and myofibrointimal proliferation later on.

References


