

Graft patency after surgical endarterectomy of a previously stented coronary artery

Stentli koroner arterin endarterektomiden sonra greft açıklığı

Nowadays, stents are used commonly in the treatment of coronary artery disease (1). Risk of stent restenosis is high in the coronary arteries with diffuse atherosclerosis and in the diabetic patients (2). If restenosis or total occlusion develops in the stent which is placed to the distal portion of the artery, it is not possible to find an appropriate vessel lumen for surgical myocardial revascularization, therefore endarterectomy becomes inevitable. Adjunctive coronary endarterectomy has been used in limited indications after the first report of Bailey (3). The patency rate of the graft used for the endarterectomized coronary artery is lower than for the non-endarterectomized coronary artery (4). Herein, we report a patient with occluded distal segment of multiple stented coronary artery that was treated with adjunctive endarterectomy and bypass grafting.

The patient was 66-year-old male, who has hypercholesterolemia and non-insulin dependent diabetes mellitus. The patient presented with chest pain of Canadian Cardiovascular Society Class II-III with a positive thallium scan showing a large reversible defect in his anterolateral region of the left ventricle. One year ago, two stents had been placed in the proximal portion of the left anterior descending (LAD) and left circumflex (LCx) coronary arteries. Nine months after the initial intervention, two new stents had been placed in the distal portion of the LAD (Ephesus stent, Ne-Med Co., Istanbul, Turkey). At this time, the proximal LAD and LCx stents were normal. Three months after the second intervention, a coronary angiogram showed a total occlusion in the mid-LAD, just distal to the first diagonal branch, with retrograde filling from the right coronary artery (RCA). Stent of LCx was patent. The posterior descending branch of the RCA and the first diagonal branch of LAD had 70% and 90% stenosis, respectively. Three stents were observed in the LAD (Fig. 1).

The patient underwent elective coronary bypass grafting (CABG). A vein graft was placed to the distal part of LAD, after an open and traction endarterectomy. The endarterectomy incision was extended from midportion to the distal end of the stents. The vein graft was sutured over the incision as a patch-plasty of approximately 70 mm in length. The posterior descending branch of RCA was also grafted with a saphenous vein graft. The first diagonal branch of LAD was revascularized with the left internal thoracic artery. The patient had an uneventful post-operative course. No changes were detected on ECG. After seven days, repeat angiogram showed that the distal portion of the LAD was occluded but the vein graft was filling the proximal part of the LAD retrogradely (Figure 2). Other grafts were patent. He was asymptomatic and subsequently discharged. The

endarterectomy material included two stents (Figure 3). Distortion and collapse of the stents was considered to be due to the iatrogenic trauma of surgical extraction. Histological examination of the specimen revealed diffuse, chronic occlusive luminal thrombosis with a background of atherosclerotic stenosis.

The restenosis rate of the stents applied to distal portion of coronary arteries or to diffuse atherosclerotic vessels is higher than the others (2). In this group of patients, if CABG is indicated, it can sometimes be difficult to achieve total revascularization, because it is difficult to find an appropriate vessel lumen for the bypass. In our patient we couldn't find the lumen of LAD after arteriotomy and had to perform surgical endarterectomy for revascularization by removing stents. Unfortunately, the control angiography showed the occlusion of the distal part of the LAD. Despite the success of coronary stenting in treating critical coronary occlusions, a significant number of patients still require CABG, because of unresolved restenosis problem.

In the presence of current practice, our interventional car-

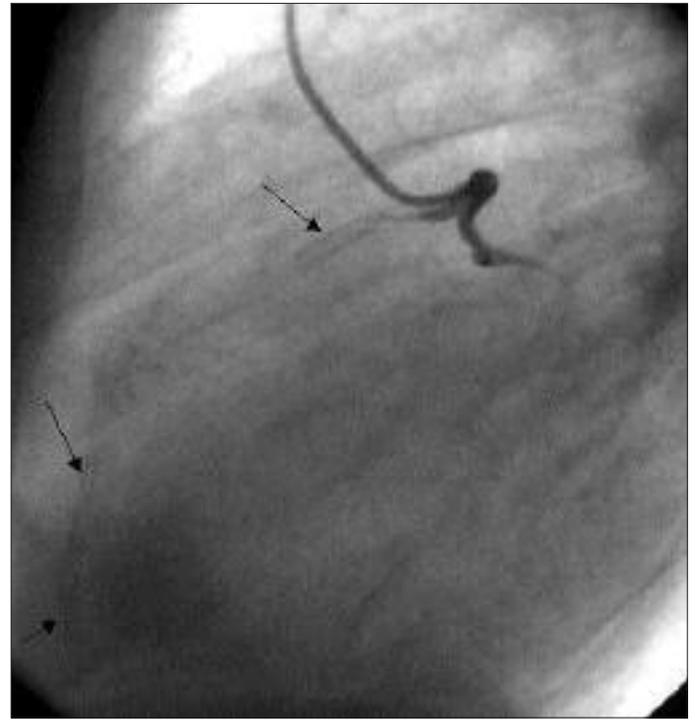


Figure 1. Three stents are seen in the left descending coronary artery (arrows)

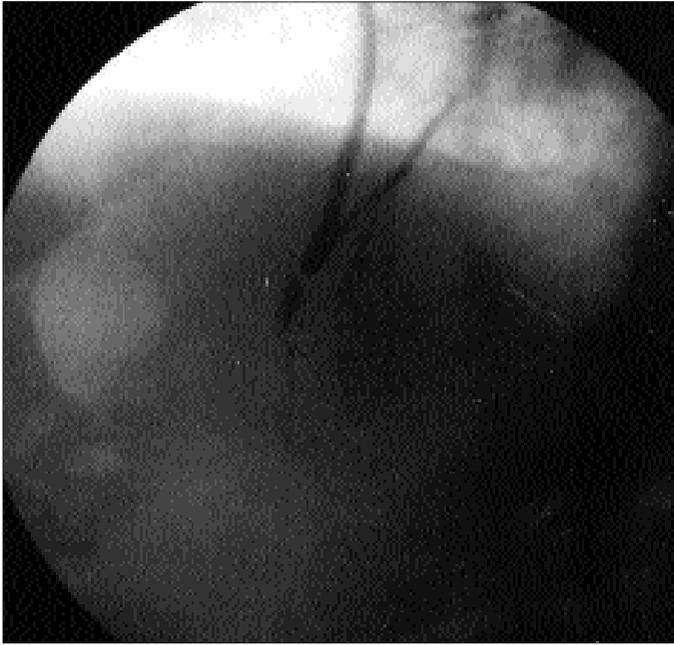


Figure 2. Angiographic assessment for graft patency. Distal portion of the left descending coronary artery is occluded but vein graft is seen to be filled from the proximal portion of the left descending coronary artery retrogradely

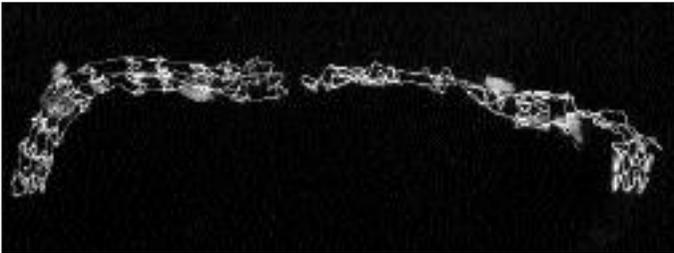


Figure 3. This radiograph shows the piece of endarterectomy including two stents

diology department used to apply multiple stents, even for the distal lesions. However, they keep in their minds surgical option always for the treatment of failed stented coronary artery lesions. Walley et al. reported a successful surgical endarterectomy of a stented right coronary artery without a postoperative angiography to assess the graft patency (5).

The main implications of this study are multiple stenting of the distal coronary lesions, not appropriate and successful surgical treatment with the removal of the stents and adjunctive coronary endarterectomy may not be beneficial for the long-term in patients whose disease had progressed to require surgery. Therefore, those patients should be directly referred to surgery, rather than for inappropriate interventions, which jeopardize a possible surgical treatment.

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