Percutaneous Intervention of Sequential Coronary Venous Graft

Zeki Dogan, MD Ahmet Karabulut, MD¹ Bulent Uzunlar, MD¹

¹Department of Cardiology, Istanbul Medicine Hospital, Istanbul, Turkey

Address for correspondence Ahmet Karabulut, MD, Department of Cardiology Istanbul Medicine Hospital, Hoca Ahmet Yesevi Cad. No: 149, 34203, Istanbul, Turkey (e-mail: drkarabulut@yahoo.com).

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Abstract

Keywords

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We present a case with coronary bypass grafts in which venous graft was anastomosed to obtuse marginal (OM) 1 and OM2 branches sequentially. We performed percutaneous intervention to the proximal circumflex (CX), OM1, and bridging segment of the venous graft. Finally, bridging segment of the venous graft began to function as a CX body extending between the OM1 and OM2.

Sequential and composite coronary bypass grafting is less commonly preferred. Although, its long-term patency was reported better than the single grafts, the technical aspect of sequential anastomosis is more complex, which explains the inconsiderable appliance.^{1,2} Herein, we present a case with coronary bypass grafts in which the venous graft was anastomosed to obtuse marginal (OM) 1 and OM2 branches sequentially. Coronary angiography revealed complete obstruction of proximal graft, whereas the segment between OM1 and OM2 was patent with critical stenosis. There was also total occlusion of the circumflex (CX) artery after branching of OM1. We performed percutaneous intervention to proximal CX, OM1, and bridging segment of the venous graft. Finally, bridging segment of the venous graft began to function as a CX body extending between the OM1 and OM2.

A 56-year-old male patient presented with Canadian Cardiovascular Society class 3 angina pectoris. He was diabetic and had undergone a coronary bypass operation 7 years ago. Coronary angiography showed total left anterior descending artery occlusion with patent left internal mammary artery graft, total right coronary artery occlusion with occluded venous graft, proximal critical stenosis in CX and total occlusion after the OM1 branch. There was sequential venous graft anastomosed to OM1 and OM2 that occluded from the

ostium (►Fig. 1). However, the segment of venous graft bridging OM1 and OM2 was functional with critical stenosis. Therefore, percutaneous coronary intervention (PCI) was performed to CX. After balloon dilation, subsequent three stent implantation was deployed to proximal CX, OM1 and bridging segment of venous graft extending to OM2. The final view demonstrated the functional and visual conversion of the venous graft to the CX body (►Fig. 1). The patient was discharged without complications and the first month control examination, including a stress test was normal.

PCI regarding venous graft is still a challenging procedure because of the higher incidence of complications. Thus, PCI of venous graft older than 3 years is indicated if the native vessel could not be opened.³ In our case, we tried to open native CX initially. After an unsuccessful native vessel intervention, venous graft intervention was performed without any complication. A subsequent stent deployment led to the rearrangement of CX artery and the bridging part of the venous graft looked like a native CX body. According to our case, we can conclude two important outcomes. First of all, sequential graft anastomosis may have a longer patency rate, which supports the previous literature.^{1,2,4} Even in the complete obstruction of the proximal graft, the bridging segment may remain patent in the case of weak distal runoff from the native vessel. Second, PCI could be performed for bridging a

Fig. 1 Right anterior oblique caudal projection was showing CX. There was critical stenosis in the proximal CX, OM1 and bridging segment of venous graft (left side of the image, arrows indicating native CX body). After successful intervention, venous graft looked like a native CX body (right side of the image). CX, circumflex; OM, obtuse marginal.

segment of the venous grafts easily, similar to the native vessel procedure complication rate.

Note

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