CASE REPORT

Coronary stent implantation in Behçet’s disease

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ABSTRACT
Behçet’s disease (BD) is a systemic vasculitis that rarely involves the coronary arteries. Coronary arteritis may lead to myocardial infarction and death, and the management of coronary lesions due to BD has been described only in a small number of patients. The outcome of a young patient with BD is reported who was admitted with acute coronary syndrome and underwent balloon angioplasty and coronary stent implantation. Coronary stent implantation is an alternative treatment for coronary artery lesions of BD but careful monitoring is mandatory due to the progressive vasculitis.

Introduction
Behçet’s disease is a systemic vasculitis of unknown cause involving the veins, arteries and capillaries (1-3). Although vascular involvement is common, coronary artery disease due to BD has rarely been described. In addition there are only a few reports regarding the management of coronary artery lesions in BD. Coronary artery bypass graft surgery (CABG) and percutaneous transluminal coronary angioplasty (PTCA) have been performed only in a small number of patients (4-6) and coronary stent implantation has never been reported. Here we present the outcome of a patient who developed acute coronary syndrome with severe left anterior descending artery (LAD) stenosis and was managed with PTCA and stent implantation.

Case report
A 32-year-old male patient who was known to have had BD for 10 years was admitted to the coronary care unit with angina at rest. He was diagnosed with oral ulcer, thrombophlebitis, pulmonary arterial aneurysm, paterygia and HLA-B51 positivity. He developed pseudo-tumor cerebri 5 years ago, and a lumboperitoneal shunt had to be inserted. He has been on maintenance oral immunosuppressive therapy (azathioprine 50 mg/day, prednisolone 5 mg/day), but stopped using his medications for the last two months. The patient is non-smoker and has mildly elevated cholesterol levels (total cholesterol: 245 mg/dl, LDL: 155 mg/dl). On admission his physical examination was normal except for an audible fourth heart sound. ECG showed horizontal ST segment depression on leads D1, aVL, V1 to V6, which resolved completely after chest pain subsided. Serum analysis revealed CRP: ++, ESR: 30 mm/hr, WBC: 10,000/mm³. No elevation in cardiac enzymes (CK-MB, Troponin T) was detected. Echocardiography showed no cardiac anatomic or functional abnormality. He was stabilized with aspirin, I.V. nitroglycerin, calcium antagonist and heparin. Antilipidemic treatment was also added.

Cardiac catheterization was carried out on day four and showed severe stenosis (90%) of the proximal LAD; no significant lesions were seen in the other coronary arteries. Aortography showed no aortic disease. Elective intervention was planned for the LAD lesion. Pulmonary angiography, which was performed due to the history of hemoptysis, revealed normal pulmonary arteries and pressures. The week after the diagnostic study, angiography showed worsening of the LAD lesion with diminished distal flow (Fig. 1a). The stenotic segment was dilated with balloon angioplasty repeatedly. Because of the suboptimal result (residual stenosis >30%), a heparin-coated stent was deployed successfully (Fig. 1b). No residual stenosis was seen. The post-operative course was uneventful and the patient was discharged on low dose aspirin, calcium antagonist and a statin. Immunosuppressive therapy was also continued (azathioprine 100 mg/day, prednisolone 5 mg/day). The patient was asymptomatic during the follow-up. Control angiography at the sixth month showed mild restenosis at the stented segment and a markedly enlarged aneurysm (Fig. 1c). Due to the increased likelihood of rupture of the aneurysm, bypass surgery was planned. The aneurysmal segment waslicated and a left internal mammary artery was successfully grafted to the distal segment. No complication was seen in the post-operative period. The patient was followed for one year and
was totally asymptomatic in terms of coronary artery disease and perfusion scintigraphy showed no signs of ischemia.

**Discussion**

Arterial lesions are seen as a late complication of BD and frequently involve the large arteries (2). Histologic studies show arteritis, and the active vasculitis stage is characterized by intense infiltration with inflammatory cells, particularly involving the media and adventitia (2). The vascular injuries are superimposed on the hypercoagulability that is also characteristic of BD and that may be due in part to activated endothelial cells and activated platelets (7). Arterial involvement takes the form of occlusion or aneurysm formation. Occlusions may cause infarction and organ failure, whereas the rupture of aneurysms may be fatal (7).

Coronary artery involvement is rare in BD. Most of the reported cases of myocardial infarctions have been severe and due to proximal occlusions of the LAD artery or rupture of a coronary aneurysm. Schiff et al. reported a case of fatal anterior myocardial infarction due to LAD occlusion (8). Kaseda et al. presented a case with a false aneurysm due to rupture of the right coronary

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Fig. 1. (a) Coronary angiogram of a left coronary artery showing tight stenosis in the proximal LAD (arrow); (b) after successful coronary stent implantation; (c) six months later, in-stent restenosis and aneurysm formation (arrows).
Coronary stent implantation has been described in other types of vasculitides (12). The reduction of coronary problem at incidence PTCA during myocardial infarction in a patient with LAD stenosis and two aneurysms (4). Cardiac surgery was performed in that patient to avoid possible relapse or aneurysmal rupture.

Coronary stent implantation has been described in other types of vasculitides (13,14), but its use has not been demonstrated. Drobinski et al. reported successful emergency PTCA during myocardial infarction in a patient with LAD stenosis and two aneurysms (4). Cardiac surgery was performed in that patient to avoid possible relapse or aneurysmal rupture.

Coronary stent implantation has been described in other types of vasculitides (13,14), but its use has not been demonstrated in BD. In our patient after unsuccessful PTCA a heparin–coated stent was deployed with the expectation of a lower rate of restenosis. Angiography at six months showed proximal in-stent restenosis and a distal coronary aneurysm. These findings showed the inflammatory and progressive nature of the disease. Since such aneurysms might have a poor prognosis, left internal mammary artery grafting to the distal LAD was performed with plication of the aneurysm. Surgery revealed a thrombosed LAD aneurysm with macroscopically confirmed destructive arteritis. It is generally accepted that surgery is indicated if coronary aneurysms are of increasing size or symptomatic (2, 4). The outcome of coronary stent deployment needs to be determined by more cases with a considerable follow-up period. The addition of immunosuppressive treatment is also mandatory in the treatment of active vasculitis and to prevent relapses. Despite the increased likelihood of restenosis, PTCA and stent implantation may be performed for acute coronary occlusions due to BD. Stent implantation may help to defer surgery and can also offer an alternative treatment in those who are not surgical candidates. Patients who present with aneurysm formation should undergo surgical intervention immediately.

References