

Coronary Revascularization in a Patient with Immune Thrombocytopenic Purpura

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Immune thrombocytopenic purpura (ITP) is a bleeding disorder characterized by premature platelet destruction mediated by autoantibodies. We report a 71-year-old ITP patient with concomitant acute coronary syndrome. Cardiac catheterization was performed through the right radial artery and premedicated with immunoglobulin. Left anterior descending artery was stented, followed by clopidogrel treatment for 7 weeks without major bleeding complication. The patient has been observed for 2 years without clinical restenosis. We suggest that stent implantation is a safe treatment in this special condition. Treatment should be individualized, but it is still a challenge to balance bleeding and thrombosis complication. [*J Chin Med Assoc* 2006;69(9):436–438]

Key Words: angioplasty, antibodies, immune system, platelet aggregation inhibitors

Introduction

Immune thrombocytopenic purpura (ITP) is a bleeding disorder characterized by premature platelet destruction mediated by autoantibodies. The incidence is around 100 cases in 1 million persons per year.¹ Antiplatelet agents, which are widely used in coronary artery disease (CAD), are generally contraindicated in ITP patients. We report an ITP patient with acute coronary syndrome (ACS) who received percutaneous coronary intervention (PCI) and discuss the strategy of treatment.

Case Report

A 71-year-old woman who had chronic refractory ITP and hypertension was referred to our hospital for evaluation because of ACS. Electrocardiography showed ST segment depression in leads V3–6. Significant laboratory data included creatine kinase, 83 U/L; troponin-I, 0.59 ng/dL; platelets, 16,000/ μ L. Thallium-201 myocardial perfusion scan showed ischemia in the anterior and anterolateral area of the left ventricle. Because of

high risk of bleeding for invasive procedure, intravenous dexamethasone 10 mg and immunoglobulin 27 g were given daily for 5 days and the platelet count elevated to 119,000/ μ L. Aspirin 100 mg was administered before PCI. Cardiac catheterization was performed through the right radial artery using a 5 French, 16 cm long sheath (Terumo Medical Corp, Somerset, NJ, USA). Coronary angiography showed a 90% eccentric stenosis with plaque rupture in the midsegment of the left anterior descending artery (Figure 1). The lesion was predilated with a 3.5 \times 20 mm Crossail balloon catheter (Guidant Corp, St Paul, MN, USA) and then a 3.5 \times 18 mm Bx velocity stent (Cordis Corp, Miami Lakes, FL, USA) was implanted and resulted in TIMI grade 3 blood flow (Figure 2). The sheath was removed immediately after the procedure. Clopidogrel 300 mg was given immediately after stenting. Neither bleeding nor ischemic events were noted during hospitalization. The patient continued to take aspirin 100 mg for 2 days and clopidogrel 75 mg daily for 7 weeks. Although occasional chest tightness was still noted, multislice computed tomography of the heart showed stent patency at 2 years' follow-up.

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Figure 1. Left coronary angiogram shows a critical stenosis (arrow) in the midsegment of the left anterior descending artery.



Figure 2. Left anterior descending artery after stenting.

Discussion

ITP is an autoimmune disorder caused by autoantibodies binding to platelet surface antigen and subsequently accelerating platelet clearance by tissue macrophage. Patients with a history of bleeding, being elderly and refractory to treatment run the especially high risk of fatal bleeding. Therefore, medications to inhibit platelet function are generally not recommended. However, antiplatelet agents should be used in patients with CAD unless contraindication exists, especially after stent implantation. This dilemma leads to difficulty in managing concomitant ITP and CAD.

Since our patient was categorized as having high risk for major bleeding and had only a single coronary

lesion, PCI was a better choice than bypass surgery. There are several concerns in a candidate with thrombocytopenia undergoing PCI. First, we have to minimize the bleeding complication from the arterial puncture site. Fuchi et al² reported a 72-year-old woman with ITP who underwent PCI and suffered from hematoma around the femoral puncture site that resulted in significant hypotension. We performed PCI through radial access with a 5 French sheath trying to lower the complication rate of entry site.³ Second, immunoglobulin was used in our patient before cardiac catheterization. The dosage we used was about 70% of the recommended dosage in ITP patient undergoing immediate intervention.¹ A decision to choose a smaller dose was based on previous reports of thromboembolic complication in patients treated with immunoglobulin. Third, low dose aspirin was given just before the procedure and we monitored the patient with great caution to avoid bleeding complication. During the procedure, we did not administer glycoprotein IIb/IIIa inhibitor for fear of profound thrombocytopenia. Although previous reports showed that glycoprotein IIb/IIIa inhibitor could reduce the incidence of myocardial infarction, administration of glycoprotein IIb/IIIa inhibitors may also further deteriorate platelet function. Mendez et al⁴ recently reported a 70-year-old man with ITP who underwent PCI and experienced severe thrombocytopenia after abciximab administration. In our case, the stent was implanted, followed by aspirin 100 mg for 2 doses and clopidogrel 75 mg daily for 7 weeks to prevent the risk of thrombosis in the stented coronary artery. In the literature, we found 3 ITP cases who underwent stent implantation.^{2,5,6} Two patients tolerated the antiplatelet treatment well for several weeks without bleeding complication. One case developed diffuse petechiae and nasal bleeding, which recovered after clopidogrel was discontinued. In conclusion, patients with ITP and concomitant CAD are not common, and definite treatment guidelines for these patients have not been established. The case we reported suggests that PCI is an available and safe treatment for ITP patients with ACS. Hemostasis is the major concern in managing these patients. Decision of stent implantation (especially drug-eluting stent) is a challenge; the risk and benefit of long-term antiplatelet agent use should be considered in each patient and should be individualized.

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