We report a case of idiopathic thrombocytopenic purpura (ITP) accompanied by steroid-induced avascular necrosis of the femoral head in a 68-year-old woman. Extremely low platelet counts of ITP patients prohibit any surgical interventions. Her platelet count was 25,000/μL. We performed a total hip arthroplasty with high-dose immunoglobulin therapy and transfusion of platelet concentrates. Her platelet count increased to 94,000/μL just before the operation. No hemostatic complications were encountered perioperatively, and the postoperative course was uneventful. She left the hospital 20 days after the operation with a T-cane. Her platelet count decreased to 34,000/μL on the day she left the hospital. Three years after the operation, she had no groin pain and could walk without ambulatory assistive devices. We did not observe implant loosening.

Key words: idiopathic thrombocytopenic purpura (ITP), arthroplasty, osteonecrosis, hip

Introduction

Avascular necrosis of the femoral head arises as a consequence of ITP treated with steroid therapy. Extremely low platelet counts of ITP patients prohibit any surgical interventions; therefore, these patients experience an inhibition in ambulatory ability due to collapse of the hip joint. In patients with severe ITP, adequate perioperative management, such as a high-dose immunoglobulin and platelet transfusion, allows for surgical treatments to be performed safely and successfully.
Discussion

Steroid-induced avascular necrosis can occur in patients with ITP\(^1\). While preoperatively planning a total hip arthroplasty in these patients, support with intravenous immune globulin and platelet transfusion must be provided. Immune globulins inhibit the destruction of platelets and the phagocytosis of platelet autoimmune antibody complexes\(^2-4\).

Patients with platelet counts less than 10,000–20,000/μL are considered to be critically at risk for major bleeding dur-
ing surgery. Counts more than 50,000/μL are recommended for performance of surgery without the risk of major bleeding. It is important to increase the platelet count before surgery with the support of intravenous immune globulin and platelet transfusions.

Imbach et al. recommend an intravenous immune globulin transfusion for five days prior to elective surgery. Three or four days after the intravenous immune globulin transfusion, the platelet count continues to increase to a maximum point seven days after the transfusion.

Intravenous high-dose immune globulin therapy is an excellent measure to increase platelet counts in elective surgery. If the increase is insufficient, the use of platelet concentrate should be considered. In general, 10–20 units of platelets are needed. In the present case, although high-dose immune globulin therapy was used, the platelet counts were less than 50,000/μL. Because of this, we transfused platelet concentrates just before the operation. The platelet count decreased to 34,000/μL three weeks after the operation. Management by a combination method enabled her to undergo surgery.

Katoh M et al. reported that platelet transfusion alone without IgG infusion failed to maintain an increase in the platelet count. These results suggest that high-dose IgG may affect transfused-platelet removal in ITP. Management by the combination method enabled their patient to undergo surgery twice. The operations in that case were hemiarthroplasty and vascularized bone graft. In the present case, pelvic preparation was necessary, so the risk of bleeding from the pelvis was encountered during the operation.

Nezu M et al. reported that combination therapy with vinca-alkaloid slow infusion and colchicine was effective for refractory idiopathic thrombocytopenic purpura. The patient could receive femoral head replacement safely if high-dose intravenous gamma-globulin was ineffective.

Three years after the operation, the present patient had no pain and walked without aids. We did not observe avascular necrosis in other sites or radiographical looseing of the implant.

Conflict of interest statement: None.

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