Anesthetic Experience of Cesarean Section in a Pregnant Woman with Immune Thrombocytopenic Purpura Having no Response to Treatment: A Case Report

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INTRODUCTION

Thrombocytopenia, defined as a platelet count of less than 150 \times 10^9/L, is the second most common hematologic abnormality encountered during pregnancy after anemia and its prevalence is between 6% and 12%.(1-3) Mild thrombocytopenia, a platelet count of more than 100 \times 10^9/L occurs relatively frequently during pregnancy and causes no problems for the mother or fetus. Thrombocytopenia with platelet counts of less than 100 \times 10^9/L is observed in only 1% of pregnant women, and it can be associated with serious maternal as well as fetal morbidity and mortality.(3) Severe thrombocytopenia may result from a range of pathologic conditions, necessitating close monitoring and therapy according to medical guidelines. The incidence of immune thrombocytopenic purpura (ITP) during pregnancy varies widely, affecting 1 in 1000-10000 pregnancies.(4) In ITP pregnant woman, maternal immunoglobulin G antiplatelet antibodies can cross the placenta. Thus, the fetus also has a risk of thrombocytopenia. In previous studies, 8% – 15% of neonates born from ITP mothers have exhibited thrombocytopenia.(5,6) The anesthetic management of pregnant women with ITP focuses on minimizing the risk of bleeding complications associated with anesthesia and delivery. Anesthesiologists must also consider the possibility of fetal thrombocytopenia. Here, we report a case of successful cesarean section in a woman with ITP and severe thrombocytopenia who was unresponsive to treatment, yet demonstrated no particular complications. A review of relevant literature follows.

CASE REPORT

A 36-year-old pregnant woman (height of 163 cm and body weight of 87 kg) exhibited a platelet count of 45 \times 10^9/L on routine screening at 35 weeks of gestation. At 12 weeks of gestation, her platelet count was 300 \times 10^9/L and other laboratory findings were normal. Her first child was delivered at term by cesarean section without complication 6 years ago. She was evaluated for the diagnosis and treated for
thrombocytopenia. A peripheral blood (PB) smear revealed marked thrombocytopenia, and laboratory results demonstrated no other findings; thus, the patient was diagnosed with ITP. The patient began taking 85 mg prednisolone every day since the gestational age of 35 weeks and 5 days for 2 weeks. However, at the gestational age of 37 weeks and 5 days, the platelet count dropped to 7 x 10^9/L and the patient exhibited symptoms of leg bruising and gum bleeding. The patient did not respond to steroids, so she was admitted to the hospital for treatment at 37 weeks and 5 days of gestation. Intravenous immunoglobulin (60 g/day) was administered for 2 days along with a transfusion of platelet apheresis (2 units). The transfusion of platelet apheresis (1 unit) continued every day, but the platelet count was 30 x 10^9/L at 38 weeks and 2 days and symptoms persisted. At gestational week 38 day 3, the patient was referred to anesthesiology for emergency cesarean section due to amniotic membrane rupture, and the anesthesiologist planned to proceed with cesarean section under general anesthesia.

Before arriving at the operating room, the patient was transfused with 16 units of platelet concentrate to minimize bleeding and the platelet count was 63 x 10^9/L immediately before surgery with a hemoglobin level of 11.0 g/dL. We began patient monitoring at the operating room. Venous lines were placed on both arms with 18G venous catheters. Intubation was performed after inducing anesthesia with 150 mg propofol and 50 mg rocuronium. Anesthesia was maintained with sevoflurane, and a radial arterial line was taken. Surgery began immediately after anesthesia, and platelet apheresis (2 units) was transfused concurrently. A blood test performed immediately after the platelet transfusion confirmed a platelet count of 10^9 x 10^9/L and hemoglobin level of 9.9 g/dL. Immediately after delivery, the patient was administered with 2 mg midazolam and remifentanil was intravenously administered. The surgery took 70 minutes, during which no notable events occurred. After surgery, the muscle block was reversed using pyridostigmin and glycopyrrolate. After confirming consciousness and the reversal of the muscle blockade, extubation was performed and the patient was transferred to the intensive care unit. Blood loss during surgery was 800 mL, and red blood cell transfusion was not performed.

The fetus’ 1-minute and 5-minute Apgar scores were 6 and 8, respectively. The platelet count taken from the umbilical cord immediately after birth was 317 x 10^9/L, and no bleeding manifested. Platelet counts taken at 4 and 7 days after birth were also in the normal range, and brain sonography revealed no findings of hemorrhage.

The mother’s platelet count was 93 x 10^9/L at 3 hours after surgery and the hemoglobin level was 10.4 g/dl. The platelet count began to drop again the following day, dropping to 15 x 10^9/L on postoperative day (POD) 3. After a transfusion of platelet apheresis (1 unit), the platelet count dropped to 8 x 10^9/L on POD 4 and the patient exhibited leg bruising. We again performed tests to identify the cause of the drop. However, as in the previous tests, a PB smear showed no particular findings other than marked thrombocytopenia. Thus, we diagnosed the patient with ITP, and no bone marrow biopsy was performed. The patient was again scheduled for steroid therapy, and dexamethasone (40 mg) was administered for 4 days. After completing dexamethasone treatment on POD 8, the platelet count rose to 13 x 10^9/L. The patient subsequently maintained a stable platelet count above 150 x 10^9/L, undergoing a 4-day 40 mg dexamethasone treatment every month for 3 months.

DISCUSSION

Thrombocytopenia is a common hematologic abnor-