

Anesthetic Management of a Patient with Gestational Thrombocytopenia for Elective Cesarean Section

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Abstract

Thrombocytopenia is a common manifestation in pregnancy. It is mostly dilutional when no pathological causation is evident. There are no clear-cut guidelines to determine the platelet count at which anesthesiologists can safely administer regional anesthesia in obstetric patients. A safe approach in an asymptomatic mother is outlined here.

Key words: Anaesthetic management, Elective Cesarean Section, Gestational Thrombocytopenia, Hematological abnormality in pregnancy

INTRODUCTION

Thrombocytopenia ranks second to anemia as the most common hematologic abnormality encountered during pregnancy. The prevalence of a platelet count $<150 \times 10^9/l$ in the third trimester of pregnancy is 6.6–11.6%. A platelet count of $<100 \times 10^9/l$, the definition for thrombocytopenia adopted by the International Working Group, is observed in only 1% of pregnant women.^[1] The most common causes for thrombocytopenia in the pregnant patient are gestational thrombocytopenia, immune thrombocytopenic purpura, and pre-eclampsia.^[2] Gestational thrombocytopenia, the most common cause of thrombocytopenia during pregnancy, occurs in 5–8% of all pregnant women.^[3] The anesthesiologist is faced with the dilemma of choosing the appropriate type of anesthesia to be given to such a patient.

CASE REPORT

A 31-year-old G₂P₁L₁ with a period of gestation of 38 weeks was admitted for an elective cesarean section. She had an uneventful pregnancy with regular antenatal visits. Her routine investigations were normal except for the platelet count which was $93 \times 10^9/l$. Her peripheral smear showed mild thrombocytopenia. Other coagulation tests such as Bleeding Time, Clotting Time, and Prothrombin Time-International Normalized Ratio (PT-INR) were within the normal range. On examination, no hematological features such as petechiae,

purpura, or ecchymoses were found. On reviewing the records of previous pregnancy, it was found that the patient had gestational thrombocytopenia in the previous pregnancy which was 3 years back. An elective cesarean section was done at 37 weeks in view of the same cause. Her platelet count was $74 \times 10^9/l$ at the time of surgery and general anesthesia was given.

The anesthesiologist planned to administer spinal anesthesia for the cesarean section in the present pregnancy. One unit each of single-donor platelets (SDP) and packed cells (PC) was advised to be reserved. The patient was counseled regarding the same and was advised overnight fasting for at least 6 h. On the day of the surgery, an 18 G cannula was secured in the upper limb. Vital signs were checked and recorded. Her blood pressure was 126/80 mm Hg, pulse rate 80 bpm, respiratory rate 14 breaths/min, and temperature was normal. The patient was preloaded with Ringer's lactate 10 ml/kg in the pre-operative room. She was shifted to the operation theater and standard monitors such as non-invasive blood pressure, ECG, and pulse oximeter were attached. Inj. Ondansetron 4 mg, Inj. Ranitidine 50 mg, and Inj. Metoclopramide 10 mg were given by intravenous route. The patient was put in the lateral decubitus position. Under strict aseptic precautions, 1.8 ml of 0.5% bupivacaine (H) was injected in the L₃–L₄ subarachnoid space with 23 G Quincke's needle after confirmation by free flow of clear CSF.

The patient was turned supine. Vital signs were continuously monitored using the standard aforementioned parameters. After checking and confirming the adequacy of the spinal block up to the T₈ level, the surgery was allowed to proceed. Blood pressure

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was maintained between systolic 100–110 mm Hg and diastolic 60–70 mm Hg throughout the surgery. Inj. Oxytocin 10 IU was administered by intramuscular route after the delivery of the fetus. Inj. Oxytocin 10 IU was started as an infusion in 500 ml of 0.9% Normal Saline for adequate contraction of the uterus. There were no incidences of intraoperative hemorrhage or hematuria. A successful hemostasis was achieved. Two units of 500 ml of Ringer's lactate were given intraoperatively. Urine output was 300 ml at the end of the surgery. The patient was shifted to the recovery. Vital signs and input/output were monitored regularly postoperatively. There were no signs of bleeding from the operative site and there was minimal bleeding per-vaginum. There were no symptoms or signs of neurological deficit or neuraxial hematoma. The patient was shifted to the ward after 6 h and discharged after 4 days. She was advised to repeat the platelet count 12 weeks post-partum.

DISCUSSION

Gestational thrombocytopenia accounts for 75% of pregnancy-associated thrombocytopenia.^[4] The decreased platelet count may be related to hemodilution and/or accelerated platelet turnover with increased platelet production in the bone marrow and increased trapping or destruction at the placenta.^[5] The features of gestational thrombocytopenia include a platelet count usually below $70 \times 10^9/l$ that returns to normal 12 weeks post-partum.^[6] The pregnant women are usually asymptomatic, having a normal count in early pregnancy with no history of thrombocytopenia or pre-eclampsia, but might have had thrombocytopenia in previous pregnancies. Gestational thrombocytopenia is a diagnosis of exclusion.

Thrombocytopenia constitutes a relative contraindication to regional anesthesia in obstetrics. The major concern is the risk of neuraxial hematoma secondary to bleeding in patients with decreased platelet levels. However, the chances of neuraxial hematomas with epidural are higher than with spinal anesthetic technique, which if taken in proportion to the number of cases is very low.^[7] Most hematologists suggest that a platelet count $>50 \times 10^9/l$ is safe for cesarean section and neuraxial

blockade, provided platelet function is normal, there is no clinical evidence of bleeding, idiopathic thrombocytopenic purpura and pre-eclampsia have been ruled out, and the platelet count is not declining.^[8]

CONCLUSION

In the absence of clear-cut guidelines to determine the low platelet count at which anesthesiologists can safely administer regional anesthesia in obstetric patients, it is necessary to rely on the cumulative experience of case and series reports to build a strong body of evidence as to guide the best clinical practice.

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