



A SAFE SUBARACHNOID BLOCK IN IDIOPATHIC THROMBOCYTOPENIC PURPURA: CASE REPORT

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ABSTRACT

Idiopathic thrombocytopenic purpura (ITP) still presents particular challenges for anesthetists, especially when the patient needs emergency surgery. Anesthetists should be able to manage ITP patients by both general or regional anesthesia. A thorough understanding of risks and benefits of both techniques may lead anesthetists to better judgment and, eventually, a safer and better outcome for the patient. We describe the anesthetic management of 27 year old primigravida with term pregnancy and breech presentation for an emergency cesarean section under subarachnoid block in IMCH, Government medical college, Kozhikode. Challenges encountered and modifications in patient management also discussed.

KEYWORDS : Idiopathic thrombocytopenic purpura, Sub arachnoid block, obstetrical, anesthesia**INTRODUCTION**

Thrombocytopenia is defined as a platelet count less than 150,000/mm³. It may be the result of decreased production, increased destruction, or sequestration. Causes include malignant diseases, primary immune thrombocytopenia (ITP), drug induced thrombocytopenia (eg : quinine, sulfonamides, ampicillin), rheumatological autoimmune disorders (eg: SLE, rheumatoid arthritis), pregnancy (ie, gestational thrombocytopenia, preeclampsia), chronic liver disease (ie hypersplenism), alcohol, nutritional deficiencies, infection (Hep C, sepsis), hereditary diseases and disseminated intravascular coagulation¹.

Thrombocytopenia commonly occurs during pregnancy. Gestational thrombocytopenia is the most common cause followed by pregnancy related vascular disorders (preeclampsia, microangiopathy including HELLP, and acute fatty liver) and pregnancy associated ITP.

ITP is a chronic autoimmune disorder characterized by autoantibodies that cause platelet destruction. Incidence is 5 per 100,000 population². Because of increased platelet turnover with a resulting predominance of young platelets ITP patients having less bleeding. Usual treatment includes corticosteroids, splenectomy, and intravenous immunoglobulin. Neuraxial anesthesia is generally considered safe once platelet count exceeds 50,000 to 80,000 /mm³. Surgery can be safely performed in patients with platelet count higher than 50,000/mm³. Risk of bleeding increases progressively as the count falls further, to less than 50,000/mm³. Platelet count generally rises by 10,000/mm³ for every unit transfused.

CASE REPORT

A 27-year-old primigravida, 36 weeks gestation, known case of ITP, on oral prednisolone for the past 6 years was posted for emergency caesarean section due to low platelet count (39,000/mm³) with leaking PV and breech presentation.

She weighed 65 kg. Her pulse rate was 78/min and blood pressure was 140/90 mm hg. Her systemic examination and other investigations were normal. She was continued oral methylprednisolone and transfused 2 units of platelet rich plasma (PRP). Pre-operative ultrasonography did not show foetal intracerebral bleed.

Anti-aspiration prophylaxis included ranitidine 150 mg and metoclopramide 10 mg. After attaching standard monitoring, two wide bore IV cannulae were inserted. While lying on her left side, we administered 9mg of intrathecal 0.5% heavy bupivacaine and 20 ug Fentanyl using 27 G Quincke needle.

During surgery, we administered a total of 1200 mL crystalloid and 2 units PRP. Tranexamic acid 1000 mg was injected slowly. A 2.7 kg baby was delivered within 10 min with APGAR score 9 and 10 at 1 and 5 min, respectively. Oxytocin 20 U in 500 ml of 0.9% saline was started after a bolus iv dose of 2 U and IV methylergometrine 0.2 mg was given. Intraoperative haemodynamics was stable. Total blood loss was

700ml. After the surgery, she was transferred to ICU. Post-operative steroids were continued and her platelet count improved. There was no neonatal thrombocytopenia or haemorrhagic complications. Post-operative pain was managed with paracetamol 1 g iv infusion. Hematology advice taken and continued oral prednisolone. Both mother and baby were discharged on day 6.

DISCUSSION

Perioperative hemorrhage in patients with low platelet counts presents a specific surgical challenge. The bleeding time of ITP patients is generally shorter compared to the severity of the thrombocytopenia, and the severity of bleeding in ITP is less than that encountered with equivalent degrees of thrombocytopenia in bone marrow failure. Several methods have been proposed to elevate the pre-operative platelet count to the "safe" level.

Severely low platelet count requires platelet transfusion before surgery. In advanced medical centers, IV immunoglobulins (IVIg) may be available. IVIg is an essential agent in the pre-operative period of an elective procedure, although this approach is not always practical^{3,4}. IVIg that is given in a dose of 1 g/kg reduces platelet destruction⁴. A significant increase in the platelet count is usually not achieved until 2–3 days following initiation of therapy. IVIg is also useful in the post-operative period. Besides, its relatively high price, the possibility of its side effects (allergic response, liver dysfunction, etc.,) must also be considered.

Several authors reported various anesthesia management in thrombocytopenic patients, by both general^{5,6,7,8,9} and regional¹⁰ anesthesia. We approached this case by regional anesthesia for two reasons. First, the patient received a platelet transfusion before the procedure. Her platelet level was increasing from 39,000 to 53,000. That means she was responding well to platelet transfusion. Second, her coagulation profile was normal (PT 13.0sec, PTT 28 sec, and INR 1.00).

We prepared this case with a 2 unit of platelet transfusions. We used a G27 spinal needle to reduce the chance of encountering blood vessels during the subarachnoid block procedure that may create certain complications for the patient.

General anesthesia may be a common option for such a case, but it is not without any potential complications. Given the fact that the patient was bruising easily in her daily life, there is always a chance that we will cause direct trauma to her airway during laryngoscopy. We all agreed that general anesthesia is not a bad choice for this case, but given her current coagulation status, we were assured that regional anesthesia is a safer option. Despite some recommendations stated that platelet count of >50,000 is safe for spinal anesthesia, there is currently no consistent evidence of a safe platelet count for spinal anesthesia¹¹.

Conclusion

Platelet transfusions are necessary for pre-operative management of

emergency surgical treatment for patients with thrombocytopenia. Both PRP and platelet transfusions are essential to be prepared before surgery. Anesthetists should be able to manage ITP patients by both general or regional anesthesia. A thorough understanding of risks and benefits of both techniques may lead anesthetists to better judgment and, eventually, a safer and better outcome for the patient. To conclude, adequate perioperative treatment with platelet transfusion and special care by the multidisciplinary team of health professionals; hematologist, anesthesiologist and surgeon minimises perioperative bleeding and ensures favourable outcome after surgery, in patients with severe ITP.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient has given her consent for her images and other clinical information to be reported in the journal. The patient understand that her name and initials will not be published and due efforts will be made to conceal her identity, but anonymity cannot be guaranteed.

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Conflicts of interest

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