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Case Report

Anaesthetic management of a case of non-cirrhotic portal hypertension with severe thrombocytopenia for elective cesarean section

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ABSTRACT

Pregnancy with non-cirrhotic portal hypertension usually presents with portal hypertension due to Physiological hemodynamic changes associated with pregnancy, thereby putting the mother at risk of potentially dangerous complications like variceal bleeding and splenic aneurysmal rupture. Management of such cases requires a multidisciplinary approach involving obstetricians, gastroenterologist and, anesthesiologist Here through the case report of a 36-year-old primigravida with Non Cirrhotic portal hypertension with at 37 weeks gestational age in labor. We intend to focus upon different aspects of anesthetic management of pregnancy with portal hypertension and its complications.

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1. Introduction

Idiopathic non cirrhotic portal hypertension(INCPH), presents with portal hypertension without any cirrhotic modification of the liver parenchyma. Portal vein thrombosis and gastrointestinal bleeding are the common complications.[1] About 15% of INCPH occurs in women of childbearing age which may lead to prothrombotic states and pregnancy in turn exacerbate portal hypertension.[2,3] Physiological changes in pregnancy increase the risk of variceal bleeding in patients with portal hypertension. Severe thrombocytopenia due to hypersplenism further complicates the management. Adverse perinatal outcomes like spontaneous abortion (23.8%), preterm delivery(10 to 37.5%), small size for gestational age, stillbirth, and perinatal mortality (16%).[4] Here we are presenting anaesthetic management a of case of INCPH with a platelet count of 34400 per cu. mm for elective cesarean section.

2. Case Presentation

A 36-year-old female, a known case of non-cirrhotic portal hypertension and Gestational diabetes with 37 weeks of gestation came for safe confinement. The patient gave a history of hematemesis during the 4th and 9th month of pregnancy and was diagnosed with non-cirrhotic portal fibrosis, portal hypertension, and oesophageal varices. Endoscopic variceal ligation was done at 16 and 36 weeks of pregnancy. The patient was also hospitalized at 9 and 16 weeks of gestation for anemia correction, and at 33 weeks for glycemic profile monitoring. The patient was admitted at 37 weeks of gestation for elective cesarean section. Basic investigations like Complete blood count, renal and liver function tests, serum electrolytes, and coagulation profile were done. The patient had a deranged liver function test and thrombocytopenia with a platelet count of 34400 per cu.mm. A repeat upper gastroenteroscopy was done and the patient was found to have grade 3 varices. Ultrasonography showed liver parenchymal disease, splenomegaly, periportal and peri pancreatic collaterals On the day of surgery patient was transfused with one unit of single donor platelet and the

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count came up to 41400 per cu. mm. The patient was taken up under ASA III. The patient was given general anesthesia with rapid sequence induction with Inj. Thiopentone 5 mg/kg after premedication with Inj. Glycopyrolate and Inj. Ondansetron after cannulation of the right internal jugular vein under ultrasound guidance. The wedge was placed under the right hip. The patient was maintained with O2:N2O, sevoflurane and muscle relaxant cis-atracurium 0.15 mg/kg. after delivery inj.Fentanyl 1 mcg/kg and inj midazolam 0.05mg/kg was given. Inj. Oxytocin 40 IU IV infusion in 1 litre Ringer lactate was given. Bleeding and intraoperative ooze were managed with Inj. Tranexamic acid 1g IV infusion. Blood loss was around 850 ml so patient was given 2 units of PRBC intraoperatively. The patient was extubated and given 2 units of fresh frozen plasma and 1 unit of cryoprecipitate in the recovery room under close monitoring. The patient was then shifted to the post-anesthesia care unit. Abdominal girth, wound soakage, and occurrence of hematuria were monitored. The patient was given 2 units of random donor platelet and platelet count was found to be 41400 per cu. mm. Postoperative recovery was uneventful and the patient was shifted to the obstetric ICU after the first postoperative day. Platelet count was monitored daily and after the 3rd postoperative day patient was shifted out of the ICU.

3. Discussion

The prognosis of patients with noncirrhotic portal hypertension is good when compared to those with cirrhotic liver disease. Peripartum anesthetic management includes detailed counseling, and antenatal and perinatal monitoring. Patients with bleeding varices before or during pregnancy should be treated appropriately by banding, sclerotherapy, shunt procedures, or splenectomy. Beta-blockers are effective in such cases. Pregnancy has to be terminated if the liver disease becomes decompensated like the development of liver failure, hepatic encephalopathy, hepatorenal syndrome, and ascites. The other serious complications are splenic artery aneurysm and pulmonary artery hypertension.

Maternal and fetal monitoring has to be done frequently like once in two weeks. Liver function and complete blood count for pancytopenia have to be done periodically. These patients must be watched for liver failure and varices. If the patient progresses to liver failure or hepatic coma pregnancy has to be terminated under steroid cover. The mode of delivery can either be by cesarean section or normal vaginal delivery.

The management of each patient has to be individualized. Adequate blood and blood products must be reserved before delivery and measures to control variceal bleeding during labor must also be readily available. The choice of anaesthesia between neuroaxial and general anaesthesia was based on the platelet count.[5] If the platelet count is ≥70,000 × 106/L, there is likely to be a low risk of spinal epidural hematoma and it is reasonable to proceed with a neuraxial procedure if clinically indicated (class IIa and level C-LD). If the platelet count is between 50,000 and 70,000 × 106/L, then there may be scenarios when competing risks/benefits justify proceeding with a neuraxial procedure (class IIb and level C-LD).[6] General anesthesia is best maintained using medications with limited hepatic metabolism. Anesthetic drugs are to be chosen based on the liver function derangements, free protein fraction, and effect on uterine muscle. Volatile anesthetics have a dose-dependent relaxation effect on uterine muscle. Thiopentone and Propofol barely alter uterine tonicity. Cisatracurium or atracurium should be considered for maintaining neuromuscular blockade because their metabolism is not reliant on the liver. Their metabolite laudanosine is cleared at the same rate in healthy and cirrhotic patients. Aminosteroid neuromuscular blockers may be used, with close neuromuscular monitoring Measures to manage postpartum hemorrhage must also be ready.[7,8]

4. Conclusion

Management of patients with portal hypertension in pregnancy requires proper understanding and knowledge of the disease, the anticipation of the outcome, and a teamwork of the obstetrician, gastroenterologist and anaesthesiologist.

5. Source of Funding

None.

6. Conflict of Interest

None.

References

1. Dhingra M, Ahmad SN. Pregnancy with portal hypertension: a case report. *Int J Reprod Contracep Obstet Gynecol*. 2018;7(9):3896–8.
2. Andrade F, Shukla A, Bureau C, Senzolo M, D'Alteroche L, Heurgué A, et al. Pregnancy in idiopathic non-cirrhotic portal hypertension: a multicentric study on maternal and fetal management and outcome. *J Hepatol*. 2018;69(6):1242–9.
3. Cazals-Hatem D, Hillaire S, Rudler M, Plessier A, Paradis V, Condat B, et al. Obliterative portal venopathy: portal hypertension is not always present at diagnosis. *J Hepatol*. 2011;54(3):455–61.
4. Sandya MR, Manjula SK, Ancy S. Pregnancy outcome in Non-cirrhotic portal hypertension. *Int J Reprod Contracep Obstet Gynecol*. 2017;6(10):4534–8.
5. Manjuladevi M, Upadhyaya KSV. Perioperative blood management. *Indian J Anaesth*. 2014;58(5):573–80.
6. Bauer ME, Arendt K, Beilin Y, Gernsheimer T, Botero JP, James AH, et al. The Society for Obstetric Anesthesia and Perinatology Interdisciplinary Consensus Statement on Neuraxial Procedures in Obstetric Patients With Thrombocytopenia. *Anesth Analg*. 2021;132(6):1531–44.
7. Hansen JD, Perri RE, Riess ML. Liver and Biliary Disease of Pregnancy and Anesthetic Implications: A Review. *Anesth Analg*. 2021;133(1):80–92.
8. Guntupalli SR, Steingrub J. Hepatic disease and pregnancy: an overview of diagnosis and management. *Crit Care Med*. 2005;33(10

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