Case Report

Perioperative Anesthetic Management of Placenta Percreta for Emergency Cesarean Surgery

Suresh Govindswamy, Ashok Madulla Shamanna, Asha Harave Liganna

Department of Anaesthesiology, M.S. Ramaiah Medical College, Bengaluru, Karnataka, India

Abstract

Placenta percreta is one of the most dangerous conditions that eventually result in maternal mortality. A young female with placenta percreta presented for fetal distress. Investigations revealed placenta invading entire abdominal wall, extending up to the urinary bladder and surrounding intestine. Surgery planned was extraction of fetus, leaving placenta *in situ* and hysterectomy at a later date, once placental vascularity is decreased. The patient was given spinal anesthesia which was later converted to general anesthesia. The patient was monitored for saturation, noninvasive blood pressure (BP), continuous electrocardiography, invasive BP, central venous pressure, urinary output, and temperature. Vitals were maintained within + 20% of the baseline. Healthy fetus was extracted, later followed by placental bed bleeding with massive bleeding of around 3500–4000 mL blood. It was managed with fluids, blood, pressure mops kept in the uterus, and placenta kept in the uterus. The patient was shifted to intensive care unit with elective ventilation. Postoperative day 3, the patient was taken for cesarean hysterectomy. The patient underwent hysterectomy after bilateral internal iliac artery ligation, repair of the bladder wall, and bilateral stenting of ureters. Bleeding of around 1500–2000 mL of blood was managed with fluids and blood. Postoperatively, the patient was managed in the intensive care unit for three days and was discharged from the hospital with a healthy baby without any complications. Antenatal recognition of placenta percreta and multidisciplinary approach by a team of experienced obstetricians, anesthesiologists, nurses, interventional radiologists, neonatologists, and urologists, as well as a blood bank, would decrease blood loss, reduce serious complications, and ensure favorable outcomes. We do here present a case of perioperative management of placenta excreta managed successfully.

Key words: Anesthetic management, massive hemorrhage, placenta percreta

Introduction

Placenta percreta is a subtype of placenta accretes in which the placenta invades the entire uterine wall and affects the adjacent organs. The incidence of placenta accreta ranges from one in 530 to one in 2500 deliveries, and its incidence has been increasing due to an increase in cesarean sections. Placenta percreta is a rare type of adherent placenta that, if not diagnosed early, can lead to severe maternal morbidity. Patients presenting with abnormal placental attachment usually have a complicated surgical course and a high mortality rate. Anesthetists should be prepared to manage massive blood loss using effective teamwork, leadership, and communication strategies. Such nontechnical skills are paramount to reaching the goal of a positive outcome for mother and baby. The obstetrician and the obstetric anesthesiologist must know, on the spot, how to tackle this problem.[1,2] Here, we present a case of placenta percreta with massive hemorrhage managed successfully.

A young female with gravida 3 para 2 living 2 with 35 weeks of gestation with previous two cesarean sections presenting with breech presentation came for safe confinement. The patient is a known case of hypothyroidism diagnosed since 3 years and was on tablet thyronorm 50 mcg once daily. Ultrasonography at the third trimester showed placenta percreta confirmed by

Access this article online

Quick Response Code:

Website: www.karnatakaanaesthj.org

DOI: 10.4103/2394-6954.194828

Address for correspondence: Dr. Suresh Govindswamy, #130, 4th Cross Road, Milk Colony, Bengaluru - 560 055, Karnataka, India.
E-mail: gsureshbmc@gmail.com

How to cite this article: Govindswamy S, Shamanna AM, Liganna AH. Perioperative anesthetic management of placenta percreta for emergency cesarean surgery. Karnataka Anaesth J 2016;2:66-8.

magnetic resonance imaging (MRI) scan showing placenta percreta invading all layers of the uterus and involving urinary bladder and intestine. Increased vascularity was seen in the placental bed. Nonassuring fetal distress was noted.

On examination, the patient weighed about 78 kg, hemodynamically stable, systemic examination, spine and airway normal. Blood investigations were within normal limits. The patient was planned for emergency cesarean section. After a detailed preanesthetic evaluation, written informed consent for surgery, adequate blood arranged, consent for blood transfusion, invasive monitoring, and Intensive Care Unit (ICU) care, the patient was accepted under American Society of Anesthesiologists III E. Emergency cesarean section with retainment of the placenta was planned for the patient.

The patient was premedicated with pantoprazole 40 mg and metoclopramide 10 mg. The patient was shifted to the operative room; monitors such as pulse oximetry, five-lead electrocardiography, noninvasive blood pressure (BP), temperature probe applied, and baseline parameters were recorded.[2] Wide bore IV access was secured on the right wrist and the left forearm. Under aseptic precaution, under local anesthesia, the right radial artery was cannulated and transducer was connected for invasive BP. The right subclavian central line was secured and used for fluid, blood transfusion and to measure CVP for fluid, for blood transfusion, and to measure central venous pressure (CVP). Bladder was catheterised and urine output was monitored. Surface temperature probe was placed.

Under aseptic precaution with patient in lateral position, lumbar puncture was done with 27-gauge Whitacre needle, and 0.5% H bupivacaine 10 mg with fentanyl 25 µg was injected after free and clear flow of cerebrospinal fluid. Table was adjusted to obtain levels of T4. Oxygen was provided through face mask of 5 L/min. The patient was coloaded with crystalloids 15 mL/kg.

A vertical midline incision extending from the lower segment to xiphisternum was done, and by classical cesarean section, the baby was extracted. The baby cried immediately after birth and was healthy. Partial placenta separation and massive bleeding were noted. The patient started to bleed, and it took 4 h to control bleeding. After 2 h procedure, spinal was converted to general anesthesia with rapid sequence intubation with ketamine and scholine. Anaesthesia was maintained with oxygen, air and sevoflurane. It started to bleed profusely, with roughly around 45 medium-sized laparotomy mops being soiled with total bleeding roughly accounting to 3500–4000 mL of blood loss. Hemodynamics were maintained within +20% of the baseline with the help of fluid and blood transfuser. Total of 3000 mL crystalloids, 4 units of packed red blood cells, 4 unit fresh frozen plasma, 4 unit platelets were transfused in the ratio 1:1:1. CVP and systolic pressure variations were maintained. Hemostasis was achieved with pressure, Foley balloon catheter, and suturing the uterus with placenta and pressure mops *in situ*. Urine output was maintained at least 50 mL/h. Hysterectomy was planned on later date when placental bed was less vascular if vascularity is acceptable.

Intraoperative arterial blood gas and blood investigation were within acceptable levels. In view of prolonged surgery, massive bleeding, and massive blood transfusion, the patient was shifted to the ICU with intubation for postoperative mechanical ventilation.

On postoperative day 3, placental bed was less vascular and patient was taken for laparotomy and hence the patient has been posted for laparotomy and proceeded. The patient was shifted from the ICU to the operation theater with acceptable vitals, blood arrangement, and urosurgeons. The patient was connected to the monitor and vitals were recorded. Anaesthesia is maintained with oxygen, air, sevoflurane, propofol, fentanyl and vecuronium. The internal iliac artery was ligated bilaterally; Bilaterally internal iliac artery was ligated. Hysterectomy was done and placenta invading into urinary bladder was removed. Bilateral stenting to ureter was done and bladder was repaired was provided. Bleeding of roughly 2000 mL was noted and replenished with blood and fluids. The patient was shifted to the ICU. The patient was slowly weaned off from the ventilator and extubated.

On postoperative day 5, the patient had one episode of convulsions that was noted for a brief period of 30 s. The patient was put on magnesium sulfate and phenytoin. MRI showed posterior reversible encephalopathy syndrome.

On postoperative day 7, the patient was shifted to the ward. On postoperative day 10, the patient was discharged from the hospital with a healthy baby.

Discussion

Placenta accreta is defined as an abnormal adherence of the placenta to the uterine wall owing to an absent or faulty decidua basalis. Separation of the placenta accreta from the uterine wall can result in fatal hemorrhage. Placenta percreta can lead to bowel injury, bladder injury, life-threatening hemorrhage, coagulopathy, amniotic fluid embolism, and peripartum hysterectomy. The incidence of this devastating condition is increasing due to increased incidence of caesarean section to the increased incidence of cesarean section. The development of new imaging techniques, such as MRI and transvaginal color Doppler sonography, has allowed antenatal diagnosis of this condition and elective preoperative planning of the obstetric and anesthetic management of these patients.

Preoperative preparation of the patients suspected of having placenta accreta is important given the potential for rapid and massive blood loss. Failure of the placenta to separate easily resulted in massive and sometimes uncontrolled hemorrhage. Optimum management of placenta percreta requires early detection and a planned cesarean hysterectomy, ideally at about 34–36 weeks.

Anesthetic management requires meticulous preoperative planning. Important management factors include the following: optimization of hemoglobin, adequate intravenous access, availability of rapid infusers, hemodynamic monitoring (including central venous and peripheral arterial access), use of a cell saver, rapid availability of blood products, compression stockings, padding and positioning to prevent nerve compression, and avoidance and treatment of hypothermia. Regional or general anesthesia can be used depending on anticipated blood loss and extent of the percreta and duration of the procedure. Regional anesthesia can provide better postoperative pain control, reduce the risk of aspiration, reduce bleeding, allow for better mother–baby bonding, and decrease fetal exposure to drugs.[3-5]

The ideal option would be a hybrid operation theater with interventional imaging facilities to carry out such procedures without hassles, at the same time providing optimal conditions for surgery and radiological interventions.[6]

Conclusion

Antenatal recognition of placenta percreta and careful planning by an obstetrician and anesthesiologist can decrease blood loss and reduce serious complications. A multidisciplinary approach by a team of experienced obstetricians, anesthesiologists, nurses, interventional radiologists, neonatologists, and urologists, as well as a blood bank, ensures the best outcome.

Financial support and sponsorship

Nil.

Conflicts of interest

There are no conflicts of interest.

References

1. Frasca D. A cesarean hysterectomy for invading placenta percreta: Anesthetic safety considerations – A case report. AANA J 2012;80:373-8.
2. Kume K, M Tsutsumi Y, Soga T, Sakai Y, Kambe N, Kawanishi R, *et al.* A case of placenta percreta with massive hemorrhage during cesarean section. J Med Invest 2014;61:208-12.
3. Smita R, Patel C, Patel M, Shah BJ. Anesthetic management for emergency caesarean hysterectomy in a patient with placenta accrete. Gujarat Med J 2013;68:104-5.
4. Sivasankar C. Perioperative management of undiagnosed placenta percreta: Case report and management strategies. Int J Womens Health 2012;4:451-4.
5. Snegovskikh D, Clebone A, Norwitz E. Anesthetic management of patients with placenta accreta and resuscitation strategies for associated massive hemorrhage. Curr Opin Anaesthesiol 2011;24:274-81.
6. Dhansura T, Kapadia D, Bhorkar N, Shaikh T. Anaesthesiologist's role in the multidisciplinary approach to placenta percreta. Indian J Anaesth 2015;59:513-5.