

Perioperative Anaesthetic Management of Placenta Percreta: A Rare Case

Renita Marina Pinto* and Sajana Mukundan

Department of Anaesthesia, Columbia Asia Referral Hospital, Bangalore, Karnataka, India;
rensmarina@gmail.com, sajana_anil@yahoo.com

Sir,

Invasive placentation is one of the major causes of postpartum hemorrhage. Traditionally this was an intra-op surprise with unplanned complex surgery and hemorrhage. Advances in imaging technology have made prenatal diagnosis and careful multidisciplinary planning possible, improving patient care. Cesarean hysterectomy is considered to be gold standard life saving surgery with a mortality rate of 7%¹. Anaesthetic challenges include providing optimal surgical conditions, management of massive hemorrhage, coagulopathy and post-operative pain management. Balancing these challenges requires meticulous planning and preparation.

This is a case report of placenta percreta diagnosed prenatally and managed successfully with elective cesarean hysterectomy.

A 36 years old gravida4para1 Abortion 1 living 1 with 37 weeks 3 days period of gestation with hypothyroidism, gestational diabetes mellitus, post-polio residual paralysis, Natural Killer (NK) cell deficiency and placenta percreta was scheduled for elective cesarean delivery with cesarean hysterectomy. Her past obstetric history included a cesarean section, a Dilatation and Curettage (D&C) and an ectopic pregnancy. Pre-anaesthesia evaluation was done three weeks prior and reviewed on day before surgery. In view of possibility of major hemorrhage and adjacent organ involvement a multidisciplinary meeting was held. Her pre-operative blood investigations were unremarkable. Adequate blood and blood products were arranged. In operation theatre left radial artery was cannulated under Local Anaesthesia (LA) and airway secured with modified rapid sequence

induction and intubation. Two wide bore Intra-Venous (IV) cannula were secured and right external jugular vein was cannulated with 16 gauge IV cannula. Upper segment cesarean section was performed. No attempt was made to separate placenta and uterine incision was closed in a single layer. Oxytocics were avoided to prevent placental separation. Cystoscopy revealed placental invasion of supratrigonal area of bladder. Hence total abdominal hysterectomy with partial cystectomy, bladder repair with bilateral (B/L) ureteralstenting and suprapubic cystotomy was done. Blood loss was 2500ml. Hemodynamics were maintained with the help of fluids, blood transfusion and vasopressor. Surgery lasted for 390min. Patient was reversed, extubated and shifted to intensive care unit (ICU) for further management. Postoperative analgesia was provided via continuous infusion of local anaesthetic s through B/L Transverse Abdominus Plane block (TAP) catheters inserted at the end of procedure under ultrasound guidance and IV paracetamol.

Normal placenta attaches to the decidua basalis layer of the endometrium at the fundus of the uterus, allowing spontaneous placental separation, following delivery of the fetus. In some individuals with predisposing factors like previous cesarean sections, endometrial damage due to D&C², myomectomy², Asherman's syndrome², the placenta may invade beyond the decidua basalis impeding the complete separation resulting in severe hemorrhage and uterine atony following delivery. Our patient had undergone a previous cesarean section and a D&C which could have been the reasons for developing placenta percreta.

*Author for correspondence

A multidisciplinary approach involving, obstetricians, urologist, anesthetists, interventional radiologist, hematologist, neonatologist and sometimes gynaecology surgeon is needed. An attempt to deliver adherent placenta can result in hemorrhage. Hence planned cesarean hysterectomy is considered to be the gold standard. Imaging procedure like ultrasonography or magnetic resonance imaging in cases of uncertainty can aid in diagnosis³ transfusion of >10 units (44 cases, 40%). Early preterm delivery at 34 - 36 weeks usually done to minimize additional risks associated with emergent surgery⁴ transfusion of >10 units (44 cases, 40%). Conservative measures like leaving placenta in situ and waiting for spontaneous reabsorption, staged hysterectomy, transcatheter arterial embolization have also been described. Successful surgical repair of the uterus after placenta percreta extrication has also been reported. Our patient was not kept on uterus conserving surgery.

Timely anaesthesia referral is crucial for preoperative optimization and planning. Plan of anaesthesia can be general or regional. In view of longer operating time, hypervascular pelvic viscera requiring careful surgical dissection, hemorrhage requiring massive transfusion, possible coagulopathy and hemodynamic instability general anaesthesia is preferred by many anesthetists.

Normal placenta is supplied by spiral arteries of uterus. In contrast, placenta percreta is supplied by extrauterine arteries, with formation of neoblood vessels resulting in massive uncontrollable intra-operative hemorrhage. Wide bore cannulas, rapid infusers, invasive arterial pressure monitoring and immediate availability of blood and blood products in the operation theater while performing surgery is essential. Central venous cannulation may be considered. Activation of massive transfusion protocol may be needed. Intra-op cell salvaging and antifibrinolytic agents like tranexamic acid may be useful. Also there are reports on using recombinant activated factor VIIa (rFVIIa) to manage obstetric hemorrhage⁵. Preoperative selective catheterization of B/L internal iliac arteries with balloon tipped catheters, inflated post fetal extraction to control hemorrhage⁶ has also been used. However their role to control hemorrhage in placenta percreta is debatable in view of neoangiogenesis. Resuscitative Endovascular Balloon Occlusion of the Aorta (REBOA) may be useful⁷.

Post op analgesia following general anaesthesia can be multimodal. We opted for combination of intravenous analgesics with continuous infusion of local anaesthetics through B/L TAP catheter placed under ultrasound guidance.

Patients with placenta percreta are at high risk of life threatening obstetric hemorrhage. Early antenatal diagnosis and multidisciplinary team approach with careful planning is essential to improve patient outcome.

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