

Successful Anesthesia Management of Complicated Case of Placenta Previa Accreta with Massive Intraoperative Bleeding and Incidentally Detected COVID-19

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Abstract

Placenta previa accreta is a serious obstetric condition with high risk of postoperative complications requiring the use of multiple health resource. The risk is higher in patients with previous history of caesarean section. Moreover, presence of COVID-19 infection can deteriorate the disease process. In this case report it was reported that the case of successful anesthetic management of a complicated placenta previa accreta with massive intraoperative bleeding with incidental COVID-19 diagnosis.

Keywords: Placenta; Previa accreta; Obstetric condition; Postoperative complications; Treatment; Caesarean section.

Introduction

The COVID-19 pandemic has made difficult to respond to the maternal health globally. There has been decline in the occupancy and growing concern in morbidity and mortality associated with late presentation [1]. The placenta previa accreta is a serious obstetric condition with high risk of postoperative complications requiring the use of multiple health resources [1,2]. Women with prior history of caesarean section with low lying

placenta previa represent more than 90% of cases of placenta accreta spectrum [1]. There is a correlation between increased levels of circulating coagulation factors including plasmin and COVID-19, with increased risk of thrombosis [3]. The authors present a case report of successful anesthetic management of a complicated placenta previa accreta with massive intraoperative bleeding with incidental COVID-19 diagnosis.

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Case report

A 33-year-old, 30+ weeks pregnant (gravida 6, para 2 with 2 living children) patient presented to the emergency department at the center with complaints of early pregnancy

bleeding. Patient had previous history of two cesarean sections.

The ultrasound and MRI imaging performed elsewhere, were suggestive of placenta previa accreta (Figure 1).

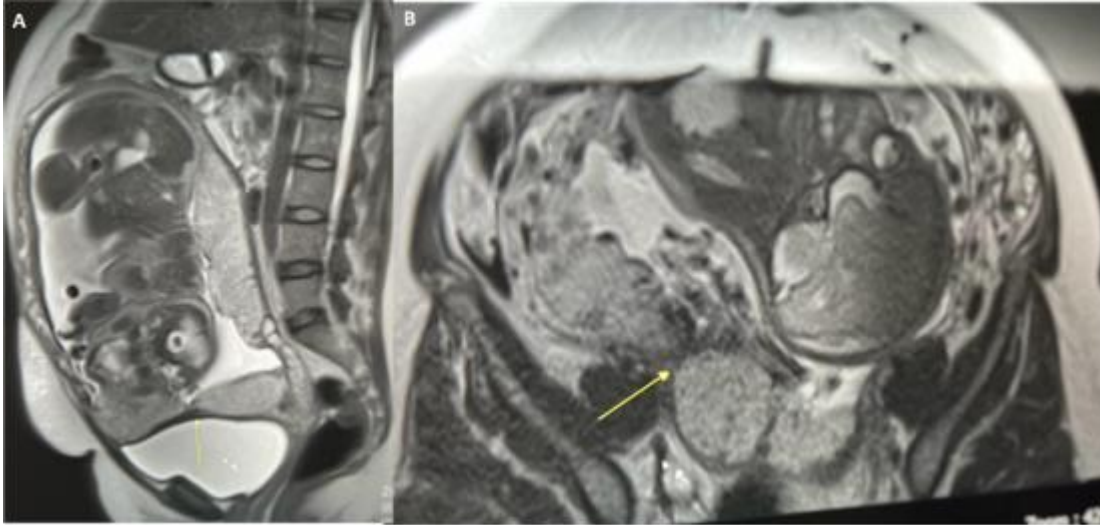


Figure 1: MRI showing placenta previa accrete.

On examination, the patient was hemodynamically stable with blood pressure of 124/82mmHg, Heart rate of 74 beats/min and 100% saturated oxygen (SPO₂). Following Dexamethasone injection, patient was shifted for emergency cesarean section. Patient was induced with general Anesthesia using Propofol 150mg, Fentanyl 50mic, Glycopyrolate 0.1mg, and Rocuranium 40mg. Patient was intubated and maintained with Sevoflurane 1.5% with nitrous oxide. Through lower segment cesarean section, a boy weighing 2.5kg was delivered. Following this, Oxytocin 20units infusion followed by Methergine 0.2mg IV was given. It was noticed placenta previa covering internal OS and accreta adhering to large surface of the uterine wall. Massive bleeding developed after manual removal of placenta with

approximately 3-liter blood loss resulting in fall in blood pressure to 60/40 mmHg and increased Heart rate to 150beats/min. Immediately, the suture of B lynch and modified B lynch were applied. Central line was inserted in Right internal jugular vein, 20G arterial line inserted to left radial artery and additional 18G IV line was secured in the left hand and 5 units of packed red blood cells (PRBC), 5 units fresh frozen plasma (FFP), 2 units of Cryoprecipitate, Prothrombin × 500 IU (Human Prothrombin complex) and 4 mg of Inj Factor VIIa were given. Further, Noradrenaline infusion (0.01mcg/kg/min), warm normal saline (1000ml) and warm ringer solution (1000ml) were infused and Bear Hugger was used for further warming. Uterus was massaged manually with warm saline gauze to control bleeding; Arista

powder was used to control small oozes of disseminated intravascular coagulation. With all the above measures, patient became hemodynamically stable. The Uterus and abdomen were closed in layers with a drain. Following return of patient's vitals to baseline values, the patient was extubated after reversal with neostigmine and glycopyrrolate. Patient was shifted to ICU, pneumatic leg compression was applied and warmed with

the Bear Hugger. On postoperative day (POD) 1, patient tested positive for COVID-19.

The patient gave history of persistent mild cough and sore throat for 5 days. Computed tomography of chest showed mild bilateral dependent pleural effusion and bilateral dependent ground glass infiltrates and atelectatic bands suggestive of passive atelectatic changes (Figure 2).



Figure 2: CT chest showing COVID-19 related changes.

Patient was treated symptomatically with saline nebulization, dexamethasone 8mg and analgesics. Patient was hemodynamically stable with normal coagulation profile (Fibrinogen, 332mg/dl; prothrombin time, 11.7sec; INR, 0.86 and APTT, 32.7 sec) without requiring further oxygen support. Noradrenaline infusion was tapered and stopped. There was no further bleeding. The Drain was removed on 2nd POD, shifted to ward on 3rd POD. On 4th POD as the patient's Haemoglobin dropped to 9.8 gm/dl, 1 unit of PRBC and 1 unit FFP was transfused. On 5th POD patient COVID-19 related symptoms

resolved and patient was discharged on 6th POD in a stable condition.

Discussion

The placenta accreta spectrum (PAS) is a pathological condition associated with high risk of obstetric hemorrhage.

In 1907 Baisch coined the term placenta accreta [2] and in 1937, Irving and Hertig first published a case series with literature review of placenta accreta and described as the abnormal adherence of placenta to the myometrium and was redefined by Luke, et

al., in 1966 as spectrum of abnormally adherent and invasive placentation disorder [2,4,5]. In 1967 Sadovsky, et al., prenatally identified placenta accreta using placentography and radioactive isotopes. Recently it is graded according to the depth of villous penetration into the uterine wall starting with abnormally adherent placenta or creta [2]. According to previous studies, caesarean delivery is one of the common risk factors for placenta previa and risk increases accordingly 3%, 11%, 40%, 61% and 67% for first, second, third, fourth and fifth caesarean delivery, respectively [2,6,7]. The National case control study using UK obstetric surveillance system revealed incidence increased from 1.7 per 10000 births to 577 per 10000 births with caesarean delivery and placenta previa [2,7].

The prenatal diagnosis has shown to increase mortality and morbidity with recent systemic metanalysis study showing diagnostic accuracy of 90.9% with ultrasound [7,8]. In the case, patient had previous history of caesarean delivery making patient more susceptible to placenta previa and accreta.

Previously manual removal of placenta, uterine curettage or endometritis are the etiology however, recently uterine scar secondary to caesarean delivery is the cause for PAS [6,7]. The disappearance of the normal uteroplacental interface (clear zone), extreme thinning of the underlying myometrium, and vascular changes within the placenta (lacunae) and placental bed (hypervascularity) denote the ultrasound findings [6-8]. The pathological basis for these signs is permanent damage of the uterine wall up to serosa [7].

Though PAS is life threatening condition, presence of SARS-CoV-2 further can deteriorate the disease process as syncytiotrophoblast is an effective carrier for virus infection [1,8]. Here the associated latent SARS-CoV-2 infection detected in the postoperative period might have caused cytokine storm triggering consumable coagulopathy resulting in the severe form of the disease [8]. The management requires multidisciplinary approach with experts from various field with improved training skills and availability of blood products to provide better outcomes as seen similar in the case.

In addition to supportive oxygen therapy, dexamethasone is safe with proven efficacy in pregnant COVID-19 patients. In addition to the placental complication placenta previa and accreta, detection of COVID-19 makes the case more unique. The authors successful described the multidisciplinary management of perioperative complications of surgery with more focus on anesthetic management. Further, since the patient's oxygen saturation was normal and CT showed relatively mild changes, COVID-19 was managed symptomatically with saline nebulization and standard therapy such as dexamethasone and analgesics.

Conclusion

This case report underlines the importance of multidisciplinary approach in managing placenta previa accreta cases which are complicated with COVID-19 disease with more focus on anesthetic management. A thorough history and preoperative investigations are of utmost importance for successful management of such cases.

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