

# Emergency Cesarean Section in a COVID-19 Patient with Antepartum Hemorrhage: A Case Report

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## Abstract

**Introduction:** Perioperative management of patients with corona virus disease 2019 (COVID-19) could be extremely challenging in order to keep the balance between providing optimal medical care and protecting health-care providers from the risk of infection. Also the respiratory effect of COVID 19 could also alter the course and outcome of surgery. **Aim:** We aim to report a 30-year-old COVID-19 patient who had emergency cesarean section on account of placenta praevia. **Methodology:** The cesarean section was done under subarachnoid block while there was no significant event perioperatively while preventive measures were taken to avoid cross infection with the managing team. **Results:** The patient had a safe anesthesia and surgery. Polymerase Chain Reaction (PCR) test was done fourth day after surgery was negative for the mother and child.

## Keywords

Anesthesia, Cesarean Section, COVID-19

## 1. Introduction

Since the beginning of 2020, the rapid spread of the COVID-19 has stressed many healthcare systems worldwide, forcing cancellation of most programmed operations [1] [2] [3] [4] [5]. However, non-delayable procedures have continued to be performed, sometimes in patients infected by COVID-19 [6] [7]. Patients undergoing emergency surgery are at higher risk of postoperative complications and death than those having elective interventions [8] [9]. In addition, patients testing positive for COVID-19 could be susceptible to poor postoperative outcomes owing to synergistic immunological deregulation, a hyperinflam-

matory response to surgery, and the need for mechanical ventilation [10].

No study has been done in these sub regions from my search to determine the outcome of surgeries on COVID 19 patients hence the need for this study.

## 2. Case Presentation

We present the case of a 30 year old patient who was admitted on account of COVID 19 at 36 weeks gestation. She was referred from the antenatal clinic of a teaching hospital with complaints of fever, cough while COVID 19 test done on her came out positive.

She was subsequently admitted into the isolation ward of the state COVID 19 center where the confirmatory test was done and was positive. She was stable with saturation of 96% to 99% on room air.

She was commenced anti COVID regimen essentially. Obstetrics and gynecology team reviewed and found stable woman at 36 weeks of gestation. The plan was to continue Covid management and allow pregnancy to mature to term while a repeat COVI test was planned for next 10 days.

However third day into admission the woman was found to have suddenly started bleeding per vaginal. She was commenced on intranasal oxy gen with saturation at 94% to 98%. The obstetrician reviewed and an obstetric ultrasound was done confirming antepartum hemorrhage. Obstetrician plan was to do emergency caesarian section to deliver the baby.

The patient was reviewed by the anaesthesia unit and planned to benefit from subarachnoid block. Basic urgent investigation were done which included Packed Cell Volume (PCV) which came out as 32%, Bed side clotting time which was normal. Two units of blood was urgently cross matched, baseline chest x-ray was also requested for but could not be done for logistic reason.

Patient was moved from the isolation theatre to the Infectious disease dedicated theatre within the COVID 19 center with oxygen by a rebreathing face mask. All transfer team were fully gowned and gloved with only minimal contact with the patient. Third-level measures of medical protection were implemented in the operating theatre immediately after informing the Department of Anesthesiology, including hand washing clothes, medical standard mask (N95) and disposable surgical cap, medical goggles (or positive-pressure headgear), disposable protective clothing, disposable gloves, and disposable shoe covers.

The N95 masks were fit tested to effectively prevent aerosol or fluid secretions.

Perioperative monitoring consisted of five-lead electrocardiography, pulse oximetry, noninvasive BP, and peripheral venous catheterization. Preoperative examination revealed a body temperature of 36.8°C, HR of 138 beats min<sup>-1</sup>, BP of 141/91 mm Hg, oxygen saturation of 96% on 100% oxygen. She was adjusted to a sitting position and received oxygen at a flow rate of 5 L min<sup>-1</sup> *via* a mask. Based on the symptoms of COVID-19 and her general situation, we chose single-dose spinal anaesthesia. She was positioned in the sitting position and was advised to avoid coughing as much as possible. Subarachnoid puncture was per-

formed at L2-L3 injected with a total of 3.0 ml volume of hyperbaric bupivacaine coloaded with 500 ml to 1 l of Normal saline, Block level was ascertained with spirit swab. With level of block at T6 the patient was adjusted to supine position with left lateral tilt to avoid aortic compression. The maternal vitals were strictly monitored through the multiparameter machine and patient was oxygenated through the rebreathing facemask all through the surgery. HR and BP were well controlled, with oxygen saturation of 95% - 99% with oxygen (3 L min<sup>-1</sup>) *via* a face mask. Surgery was uneventful except for transient hypotension which was managed with 5 mg ephedrine. Eight minutes after skin incision, a male infant weighing 3.4 kg was delivered with 1 and 5 min Apgar scores of 9 - 10. She had two units of blood transfused intraoperative. The newborn was immediately transferred to a neonatal isolation ward for specialist neonatal treatment to minimize the potential risk of infection. At end of surgery the mother was transferred to intensive care unit within the isolation center for postoperative oxygenation, analgesia and close monitoring. The mother was oxygenated for 24 hour postoperatively while the Covid regimen was also commenced later in the evening of surgery. There was no adverse effect both from the baby and the mother. Worth of note is that the PCR COVID test conducted on the baby came out negative twice while the mother also came out negative 4 days after surgery and was subsequently discharged to the post natal ward while consent was taken from the patient for case report.

### 3. Discussion

In the case presented we found out that the outcome of the emergency caesarian section was not adversely affected significantly by COVID 19 as against what was documented by previous studies.

Osorio *et al.* [11] in the analysis of COVID 19 patients that underwent emergency and elective general surgeries found out that the outcome was poor when compared to non COVID 19 patients. The reasons for the difference might be due to the difference in race of the patients involved and the immunologic response of the two to the disease. The nature of surgery caesarian section as against general surgeries in their cases might be responsible.

Knitely [12] *et al.* and Jonker [13] *et al.* in separate studies comparing outcomes of contemporaneous surgical patients with and without COVID infection reached a consensus conclusion that COVID 19 is associated with poorer prognosis while: in two studies [12] [13] COVID-19 infection was associated with poorer postoperative outcomes, whereas Zhao *et al* in their study found out that COVID 19 was not associated with worse prognosis [14].

It is of note in this study that PCR done on the neonate on the fourth postoperative date was negative suggesting that the risk of vertical transmission in parturient with COVID 19 is low, this is in agreement with findings of Dong L [15] and Zeng L [16] *et al.* in two different studies.

Pregnancy itself is an abnormal physiology that places some maternal de-

mands, pregnancy coexisting with COVID 19 poses a threat. However with vigilance and early decision making as in this case presented increases the chance of having a normal surgery devoid of complication both from the fetus and maternal end. Parturient with COVID-19 have a unique disease profile added to the physiologic changes of pregnancy, presenting a diagnostic dilemma; they can be asymptomatic during their labor course and in the postpartum period or give disease symptoms that overlap with labor symptoms like myalgia and diarrhea.

RT-PCR testing improves detection of cases, which will help to prevent virus transmission to the neonate and guide for planning isolation, bed assignment, and proper use of PPE. [17] [18]

Close team communication about COVID-19 status of all parturient and anticipating potential obstetric emergencies and predicting the need for airway instrumentation is crucial. It helps minimizing emergent intubations reducing the health providers' exposure to infection. Subarachnoid block is advisable if the mother has not been allowed to deteriorate before decision. An early epidural was also recommended to avoid general anesthesia if cesarean delivery is decided provided the patient has an acceptable platelet count. [19]

During institution of subarachnoid block all health-care providers in the theatre should have contact and droplet precautions (gown, gloves, surgical mask, and eye protection). The patient should wear a surgical mask (if not on oxygen by face mask) all the time to limit droplet spread and the number of personnel present should be minimized.

Effective management of COVID-19 obstetric patients requires a multidisciplinary team approach consisting of anesthesiologists, obstetricians, neonatologists, critical care, infectious disease, nursing, employee health, environmental health, and telemedicine. [19]

## 4. Summary

In summary, we report the successful management of a pregnant patient with COVID-19, who underwent an emergency cesarean section.

## Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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