

Introduction

- COVID-19 infection in the obstetrical population is linked to severe disease status, increased maternal and fetal mortality, increased preterm delivery, and high rates of cesarean delivery [1].
- Expert panel consensus recommends delivering the fetus at ≥ 32 -34 weeks gestational age (GA) among those with severe disease, to improve maternal oxygenation and provide high likelihood of neonatal survival [2].
- To our knowledge, this is the first case report to address the anesthetic considerations, management, and challenges of a cesarean section in a critically ill COVID-19 parturient.
- Informed consent was provided by the patient.

Case Description

- **28-year-old G1** presented at **28+4 weeks GA** with COVID-19 pneumonia and quickly deteriorated requiring invasive ventilation.
- She was transferred to the intensive care unit (ICU) at a tertiary care hospital and was diagnosed with severe Acute Respiratory Distress Syndrome (**PaO₂/FiO₂ ratio 81**).

References

1. Chen, D. et al. (2020). IJGO. 149:130-6
2. Rose, CH. et al. (2021). AJOG MFM.1-6

Anesthetic Management



- A multidisciplinary team consisting of Obstetrics, OB Anesthesia, NICU, ICU, Respiratory Therapy, Surgical and OB Nursing was utilized.
- Despite regular proning, recurrent desaturations (**Target SpO₂ $\geq 95\%$**) and hemodynamic instability (**SBP ~ 70 -80 mmHg**) led to a multidisciplinary team discussion and decision to perform an emergency cesarean section at **30+4 weeks GA** in the ICU.
- Due to desaturation in supine position, the procedure was performed in the semi-recumbent position.
- The patient received a total intravenous anesthetic (TIVA) that comprised pre-existing ICU sedative infusions.
- No vasoactive medications were required intraoperatively.
- Total surgical time was **28 mins**.
- The baby was delivered without maternal complications; however, prolonged neonatal resuscitation was required. The mother fully recovered and was discharged home 7 weeks later.

TIVA Protocol

	Infusion Rate	Bolus
Hydromorphone	30 mg/hr	
Midazolam	20 mg/hr	
Propofol		0.5 mg/kg
Rocuronium		50 mg

Ventilation Settings

	Pre C/S	Post C/S*
Vent Mode	PCMV	
RR	34	28
PIP/PEEP	35/12	25/10
Tvol (mL)	350	331
FiO ₂	1.0	0.45
PaO ₂ /FiO ₂ Ratio	149	213
SpO ₂ (%)	96	97

*Values at 4 hours Post Cesarean Section (C/S).

Discussion

- This is the first case report to describe the anesthetic management, resources and logistical challenges of an emergent cesarean section in a critically ill COVID-19 obstetrical patient.
- High doses of sedation and paralytics, high ventilation requirements, hemodynamic instability, limited space and restricted help were some of the challenges faced by the anesthesia team.
- This case highlights the need for additional anesthesia personnel, equipment, and effective communication to provide TIVA in an out-of-OR setting in a critically ill obstetrical patient with high sedation requirements.