

Emergencies in Covid 19 Parturients: Anesthesia Concerns and Lessons Learnt

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ABSTRACT

Obstetric emergencies have always put the anaesthetist on nerves. More so in this era of novel coronavirus pandemic managing obstetric cases in emergency has been a diverse challenge. COVID 19 parturients presenting in emergencies have prompted us to redesign the strategies regarding their management.

Here we report a series of three obstetric cases presenting as emergency and emphasize on anaesthesia concerns in these COVID-19 positive parturients.

Peripartum management of COVID-19 positive mother is now indispensable as the signs and symptoms of corona infection are no different than the normal pregnancy symptoms [1]. To provide safe and good quality anaesthesia has now become the mainstay of management. To ensure healthy outcome of mother and baby, peripartum care in COVID-19 parturients cannot be deferred or postponed [2]. To provide a safe and good quality of anaesthesia, resources need to be redirected and optimally utilised.

There have been several recommendations and guidelines made based on the earlier MERS –CoV2 and influenza virus pandemics but the evidences on COVID 19 are new and the presentations are changing every day and so are the protocols changing with time.

Ours being a tertiary care hospital, all the cases reported here are patients referred from outside hospitals and managing them in emergency was a real test of time. By the time we had these patients, our hospital had made separate arrangements for managing COVID-19 suspected or positive parturients but few were yet to be implemented.

Case Report

All the three cases were received in emergency. Patients were shifted to operating room through green corridor. Details and significant points regarding each patient are mentioned in (Table 1).

Table 1- Description of presented cases.

	Case 1	Case 2	Case 3
COVID-19 status	Positive	Positive	Suspect
Gestational age	36 weeks	34 weeks	22 weeks
Diagnosis	Placenta percreta	Abruptio placenta	Preterm labour IUD

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Complaints	Cough,fever	Cough,convulsions, PIH	Cough,fever, Convulsions
Significant Laboratory investigations	–	Thrombocytopenia (platelet count 67000/dl)	Hemoglobin: 7gm%
Anaesthesia	Spinal Anaesthesia	General Anaesthesia	General Anaesthesia
Intra operative complications	Blood loss	Convulsions,Blood loss,delayed Recovery (?MgSO4), Metabolic acidosis	Convulsions
Previous treatment	–	?MgSO4 (details of treatment could not be elicited)	–
Blood transfusion	2 pints whole blood, 4 FFP	1 PCV,2 FFP	–
Postoperative course	Isolated Healthy, good Discharged	Isolation from baby Healthy, good Discharged	RTPCR +ve (Day 2) chest xray – ARDS picture, ventilated in COVID, ICU Isolation from baby Succumbed (POD-6)

Discussion

We report this series of cases in order to emphasize on the need to change the protocols to deal with obstetric emergencies and the challenges faced during anesthesia.

Our institute is a referral care centre for obstetric cases more so in the era of pandemic when the other centres are not prepared completely to manage the emergency crisis in COVID 19 parturients.

Our hospital has made separate facility available for the surgical management of COVID 19 patients. This facility consists of an isolated labour room, operation theatre, a postoperative room and an intensive care unit for the critically ill patients. These areas are attached with suitable donning and doffing chambers and also the provision of unidirectional flow is maintained to avoid contamination. Our operation theatre has installed air handling unit. The central air conditioner has to be turned off whenever the cases are conducted in OT. There is no provision of negative pressure venting in our theatre. All these patients are shifted in operation theatre through the GREEN CORRIDOR. The green corridor is defined as the passage which is used for the shifting of only COVID 19 positive patients.

While handling these patients the entire anesthesia team used level 3 PPE. There are reports which convincingly suggest that use of level 3 PPE prevents transmission of COVID 19 infection better than level 1 PPE that is 2.7% VERSUS 57.1 % [3].

Complications:

There are few reports of SARS-COV 2 related spontaneous meningoencephalitis [4-7] but the evidence to support viral transmission during lumbar puncture does not exist. The society of obstetric anesthesiology

and perinatology suggests avoidance of all emergency deliveries in COVID 19 parturients [8]. This recommendation cannot be followed in our scenario as the females from low socioeconomic strata tend to visit hospital only in case of emergency with no time in hand, neither surgeon nor anesthetist.

From all the evidences that exist we infer that central neuraxial blocks are safe and should be preferred in COVID 19 parturients [3,9]. But the exaggerated hypotension after neuraxial blocks in these patients requires prompt attention and treatment.

Thrombocytopenia is another complication encountered in COVID 19 parturients [10-11]. Blood loss caused due to thrombocytopenia poses a major challenge while managing these cases. In our study, we encountered intraoperative blood loss in two (cases 1 and 2) of our patients. While in one patient (case 2) the cause of blood loss was thrombocytopenia, the other patient (case 1) had placental pathology with normal platelet count. In both the patient blood loss was actively replaced with blood products. None of our patient was on prophylactic anticoagulant therapy.

Two patients (cases 2 and 3) also presented with convulsions we attribute to pregnancy induced hypertension. But the relationship with covid 19 infection needs more of studies.

Intra operative management:

All the cases being emergencies no fixed plan of anesthesia could be followed and it was individualized based on the patient's parameters. In one patient (case 1) we could do the case under neuraxial block so as to limit the transmission of virus while other two cases had to be done under general anesthesia. While inducing general anesthesia minimum required personnel were in the OT

with level 3 PPE kit donned and barrier intubation device such as face shield was used. Rapid sequence induction was performed with low flow anesthesia. Other complications we encountered were increased oxygen requirement. Two out of three (case 2 and 3) patients were not maintaining the oxygen saturation on room air. Even after supplementing oxygen via face mask the spo₂ value could raise up to 87-93%. It was only after general anesthesia with ETT inserted the saturation came up to 100%. Patient was tried to extubate in the operating room itself, although one patient exhibited delayed recovery due to intraoperative metabolic acidosis and prior administration of magnesium sulphate while the other patient (case 3) required postoperatively ventilator support due to repeated episodes of convulsions and later developed COVID 19 pneumonia to which she succumbed on POD 6.

Postoperative management:

Postoperatively all the three patients were isolated in covid positive ICU or suspect ICU as two of the patients had history and symptoms suggestive of upper respiratory tract infection and had high infection risk and were PUI (patients under investigation) and need isolation till tested negative [12] to prevent transmission of virus.

As per our institutional protocol the baby was isolated from mother if mother is tested positive for COVID 19 and the RT PCR of baby is sent subsequently.

Psychological counselling and mental support is very much essential [1] in such patients as the level of stress and anxiety with the knowledge of being COVID 19 positive raises several folds. This might improve the maternal outcome and recovery. In our hospital we have a separate team of people who help out such patients to cope up with stress and overcome the fear of being COVID positive.

Modification of protocols:

- There should be an early and clear communication guideline between obstetrician and anesthetist [1] regarding patient's COVID status, urgency of surgery and requirements and preparedness of the operating room. This would prevent the time loss during donning and keeping other preparations ready. All suspected cases should be treated as positive until tested negative for COVID 19 [12].

- Separate operation theaters with proper donning and doffing areas should be prepared [13].
- Choice of anesthesia should depend on the urgency of surgery as well as maternal and fetal health
- Central neuraxial blocks should be considered wherever possible.
- Minimum required people should be present in the theatre.
- Only green corridor should be used for transfer of such patients.

- All patients should always be wearing surgical masks.

Limitations:

Since all these cases were done in emergency all protocols which need to be adhered while handling covid positive patients might not have been followed and some were not implemented as these cases were done in early era of COVID pandemic. Secondly the number of cases is very less to draw a correlation between constitutional symptoms of pregnancy and COVID 19.

Conclusion

To conclude emergencies in covid 19 parturients can be effectively managed with proper communication with surgeons, OT preparedness, proper utilization of resources and manpower and dedicated management.

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