



# Brazilian Journal of ANESTHESIOLOGY



## LETTER TO THE EDITOR

### Reorganization of obstetric anesthesia services during the nationwide COVID-19 lockdown – experience from an Indian tertiary hospital

Dear Editor,

The world is currently facing an unprecedented crisis caused by the severe acute respiratory syndrome coronavirus-2. The World Health Organization declared the novel coronavirus infection (COVID-19) a pandemic on March 11, 2020. The Government of India declared a national-wide lockdown on the 22<sup>nd</sup> March, 2020 that lasted for 2 months till 22<sup>nd</sup> May 2020. As a tertiary care hospital, we faced significant challenges during this 2-month lockdown period which we wish to share with regard to the reorganization of obstetric anesthesia services in our hospital.

The clinical characteristics of COVID-19 infection in parturients is consistent with those reported in non-pregnant adults.<sup>1</sup> However, many of the symptoms like fatigue, myalgia, tachycardia, and fever may be seen in laboring women as well, making screening difficult in parturients. Due to these considerations and the fact that COVID-19 infections can be asymptomatic,<sup>2</sup> we decided to mandatorily test all pregnant patients admitted in the delivery suite with real-time reverse transcriptase – polymerase chain reaction test. The test has a turnaround time of 6-8 hours, as a result of which there were a significant number of patients requiring urgent/emergency cesarean section who did not have a preoperative negative test report.

To circumvent this problem, the logistics of operating two operating theaters (OT) was discussed, following which it was decided that parturients with a negative COVID-19 report would be operated in the existing obstetric operating theater (OOT). Patients who did not have a test report available (treated as suspects) would be operated in a COVID-19 suspect OT in a different part of the hospital. COVID-19 positive parturients were transferred to a separate COVID-19 block for their management. Specific areas for donning and doffing were identified for the COVID-19 suspect OT and all healthcare personnel (HCP) were familiarized with the operating theater floor plan and standard operating procedures.

Arranging adequate manpower to run both operating theaters was another problem we faced, particularly when more and more HCP were being deployed in high dependency units and intensive care units treating COVID-19 patients in our hospital. From the existing pool of anesthesia residents and consultants, 2 separate teams were formed – one for the OOT and one for the COVID-19 suspect OT – each comprising of an anesthesia senior resident and a junior resident. The OOT had 2 teams working 12-h shifts which was the usual roster schedule in the department. The COVID-19 suspect OT had a single team which was 24-h on-call for a work week of 7 days. Following a consultant-led anesthesia care approach, separate anesthesia consultants were designated to lead the teams working in the OOT and the COVID-19 suspect OT.

The COVID-19 crisis has resulted in an unprecedented increase in the demand for personal protective equipment. Studies have shown that a significant number of HCP have been infected, with a disproportionately large number of them classified as severe or critical.<sup>3</sup> Strategies to minimize potential COVID-19 exposure of anesthesiologists have been recommended to limit the consumption of personal protective equipment, including use of video consultations for preanesthesia evaluation and the use of electronic devices like iPads for remote monitoring and consenting.<sup>4</sup> These measures, while suitable in developed countries, are expensive and impractical in low-middle income countries, where even maintaining effective social distancing in the wards is a challenge. As a uniform policy, all HCP working in the OOT were instructed to wear N-95 mask with goggles while those working in the COVID-19 suspect OT used full personal protective equipment (bodysuit with hood, shoe-covers, goggles, faceshield, and double-layered gloves in addition to the surgical gown). In order to conserve the number of personal protective equipment used, we limited the number of HCP in the COVID-19 suspect OT to the minimum required to safely run the theater.

The distribution of cases performed during the 2-month lockdown period in our hospital is described in [Table 1](#). The total number of cesarean sections performed is lower than the case load that we usually handle. The reason for this could be a combination of redistribution of elective cesarean sections and a reduction in referrals from neighboring states due to the strict COVID-19 mandated national lockdown in India, that affected interstate transport. Of the 218 cesarean deliveries performed, 190 and

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**Table 1** Distribution of obstetric surgeries performed in COVID suspect and obstetric operating theatre during the 2-month lockdown period.

COVID-19 suspect operating theatre	Neuraxial block	General anesthesia
Cesarean delivery		
Elective	-	-
Emergency	22	6
Laparotomy	-	2
Obstetric operating theatre		
Cesarean delivery		
Elective	19	2
Emergency	132	37
Laparotomy	-	11
Suction and evacuation	-	2
Cervical encirclage	1	-
Examination under anesthesia	1	3

28 were performed in the OOT and COVID-19 suspect OT respectively. One hundred seventy three cesarean deliveries were performed under neuraxial block, while 45 were emergency cesarean deliveries performed under general anesthesia with endotracheal intubation. Following surgery, the patients operated in the OOT were transferred to the standard postanesthesia care unit and subsequently to the post-delivery ward, while those operated in the COVID-19 suspect OT completed their postanesthesia recovery in the theatre whilst awaiting the confirmatory COVID-19 test results. None of our parturients in the 2-month period operated in the COVID-19 suspect OT turned out positive in the immediate postoperative period. They were all transferred to the post-delivery ward and had an uneventful postoperative course. The newborns were nursed in a separate nursery and tested at 24 hours after birth. If the test was negative, the babies were reunited with the mothers in the postnatal wards. None of our HCP working in the COVID-19 suspect OT during the 2-month period developed features of COVID-19 infection that required further evaluation and testing.

We now have the rapid point-of-care Xpert Xpress SARS-CoV-2 test that can be processed on the GeneXpert platform in our hospital. With a processing time of 45 minutes, we have now increased our testing capacity to provide results faster. This has significantly reduced the number of parturients without a conclusive negative test report requiring urgent/emergency caesarean section, thereby reducing the

utilization of personal protective equipment. With the test being expensive, geneXpert is currently being used only in situations where patients require immediate or time-bound surgical interventions, which most of our obstetric patients qualify for.

The undisrupted provision of obstetric anesthesia services during the COVID-19 pandemic is challenging, even for developed countries.<sup>5</sup> Working in a high-volume center in a low-middle income country further poses significantly challenges. The importance of clear communication between healthcare policy officials, administrators and clinicians is crucial and cannot be over-emphasized.

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## Conflicts of interest

The authors declare no conflicts of interest.

## References

1. Qiao J. What are the risks of COVID-19 infection in pregnant women? *Lancet*. 2020;395:760–2.
2. Rothe C, Schunk M, Sothmann P, et al. Transmission of 2019-NCoV infection from an asymptomatic contact in Germany. *N Engl J Med*. 2020;382:970–1.
3. Wu Z, McGoogan JM. Characteristics of and important lessons from the coronavirus disease 2019 (COVID-19) outbreak in China: a summary of a report of 72314 cases from the Chinese Center for Disease Control and Prevention. *JAMA*. 2020;323:1239–42.
4. Melissa B, Kyra B, Emily D, et al. Obstetric anaesthesia during the COVID-19 pandemic. *Anesth Analg*. 2020;131:7–15.
5. Morau E, Bouvet L, Keita H, et al. Anaesthesia and intensive care in obstetrics during the COVID-19 pandemic. *Anaesth Crit Care Pain Med*. 2020;39:345–9.

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