

## Redefining the use of subarachnoid block for caesarean section in severe COVID-19 pneumonia

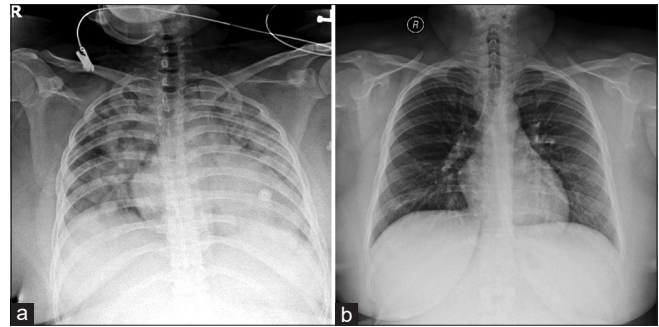
Sir,

The choice of anaesthesia for caesarean section in pregnant patients with severe coronavirus disease (COVID)-19 pneumonia is not straightforward.<sup>[1,2]</sup> The incidence of acute respiratory distress syndrome (ARDS) in the patient population ranges from 6.9%–25%<sup>[3,4]</sup>, and maternal outcome is significantly worsened following caesarean section, with clinical deterioration in 21.6%.<sup>[5]</sup> We present a case wherein multiple risk factors were present.

A 26-year-old lady, Gravida(G2) Para(P1) Living(L1) at 34 + 3 weeks of gestation tested positive for COVID-19 after 4 days of fever and 1 day of breathlessness. She was morbidly obese, with a height of 165 cm, weight of 109 kg and a body mass index (BMI) of 40 kg/cm<sup>2</sup>. She had a respiratory rate (RR) of 50/min and peripheral oxygen saturation (SpO<sub>2</sub>) of 85% on room air requiring 15 L/min O<sub>2</sub> via non-rebreathing mask (NRBM) and diagnosed as having severe COVID-19 pneumonia based on the clinical signs, RR >30/min and room air SpO<sub>2</sub> <94%. She was shifted to COVID ICU for further management. She also had elevated d-Dimer (1.65 µg/ml) and serum ferritin (79.9 ng/ml). She was started on Inj. enoxaparin 80 mg S.C OD, Inj. dexamethasone 6 mg OD and Inj. azithromycin 500 mg OD. She was a known case of gestational hypertension and gestational diabetes mellitus diagnosed one month back and was receiving T. metformin 500 mg BD and T. labetalol 100 mg BD.

Arterial blood gas (ABG) analysis showed a partial pressure of oxygen (pO<sub>2</sub>) of 83 mmHg with fraction of inspired oxygen (Fio<sub>2</sub>) 0.8. Chest radiogram (CXR) showed bilateral patchy opacities with hilar infiltrates in both lung fields [Figure 1a]. The obstetric team decided to terminate the pregnancy in view of unstable maternal condition. Surgery was planned under subarachnoid block with adequate fasting and 12 hours of stopping enoxaparin. The patient was counselled and informed consent was obtained.

The patient was shifted inside the operating theatre with 30° head-end elevation and 15 L O<sub>2</sub> via



**Figure 1:** Preoperative Chest X-ray (a) and Chest X-Ray after recovery (b)

NRBM. Standard monitors included non-invasive blood pressure (NIBP), pulse oximeter, and electrocardiography (ECG). Baseline NIBP was 130/70 mmHg, heart rate (HR) was 116/min, RR was 40/min and SpO<sub>2</sub> was 98%.

She was placed in the sitting position for a subarachnoid block. Aseptic precautions included hand hygiene over the outer glove followed by donning a sterile gown and additional gloves. After local anaesthetic infiltration, 25 G Quincke needle was inserted in the L3–L4 space and 1.8 mL of 0.5% hyperbaric bupivacaine was given after ensuring backflow of cerebrospinal fluid (CSF). She was then placed in 30-degree head elevated position with a wedge kept under the right hip for left uterine displacement.

The level of spinal anaesthesia was tested to be T6 with pin pricks. Caesarean section was performed and oxytocin 10 U was added to 500 ml of Ringer's Lactate solution after delivery. Her SpO<sub>2</sub> was 96% with 15 L/min NRBM throughout. The operation lasted 1 hour and 30 minutes after which the baby was shifted to the neonatal intensive care unit (NICU).

On the first post-operative day, oxygen requirement reduced to 10 L O<sub>2</sub> by Hudson mask. The next day, she maintained SpO<sub>2</sub> of 92%–94% on room air with RR of 28/min. She was shifted to the COVID-19 ward on O<sub>2</sub> by nasal prongs with SpO<sub>2</sub> of 98%. Her CXR showed significant improvement thereafter [Figure 1b].

The current recommendation for anaesthesia in caesarean section is to provide general anaesthesia (GA) for patients with severe pneumonia.<sup>[6]</sup> The concerns with GA in our patient were difficult intubation due to morbid obesity and worsening of ARDS. Our patient was unable to lie supine because of severe dyspnoea warranting GA. However, to avoid the problems associated with GA as mentioned above, we proceeded

with subarachnoid block. This patient might have had pulmonary congestion as a part of pathophysiology of pre-eclampsia, possibly contributing to a speedy relief of pulmonary symptoms after delivery. In conclusion, in a subset of patients who are yet to be categorised, early delivery may facilitate rapid recovery from COVID-19 pneumonia.

#### Declaration of patient consent

Informed written consent and permission were obtained from the patient for the use of the clinical data and radiological image for the purpose of study and publication.

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Nil.

#### Conflicts of interest

There are no conflicts of interest.

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