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Correspondence

Management of maternal resuscitation and category 1 cesarean delivery in a Covid-19 suspect parturient



As Covid-19 is declared a pandemic, there is an urgent need to introduce measures to protect medical frontline workers whilst maintaining patient safety and response time during medical emergencies. SARS-Cov-2 is a highly contagious virus that spreads by droplet or direct contact. Strict infection control protocols must be in place to prevent its transmission [1].

We would like to share our management of a critical medical emergency in a parturient suspected to have Covid-19 in the labor suite that subsequently required a category 1 emergency cesarean section [2]. These time sensitive codes require prompt responses [3].

A previously healthy 31 year old nulliparous Chinese lady presented with preterm labor at 32 weeks gestation. She had new onset hypertension and developed left lower lobe pneumonia, manifesting with wet cough, dyspnea and pyrexia. Although she did not have travel history or Covid-19 contact history, hospital guidelines dictate that the development of pneumonia requires isolation and performance of SARS-CoV-2 swabs on 2 consecutive days. After the first SARS-CoV-2 swab was performed and prior to availability of result, the patient developed a witnessed generalized tonic-clonic seizure. A critical medical emergency code was activated. Our code team, comprising of anesthesiologists, intensive care nurses and obstetricians responded immediately. Full personal protective equipment (PPE) (N95 mask, goggles, protective gown, gloves) was done before attending to the patient. On arrival, the patient was having postictal confusion. Intravenous magnesium sulphate was given from a dedicated isolation obstetric emergency set to treat the suspected eclamptic fit. Fetal bradycardia was then noted on the cardiotocogram. The anesthetic team im-

mediately communicated via phone with the operating theatre staff to prepare the designated negative pressure operating theatre. The operating theatre staff also proceeded to wear PAPR (powered air-purifying respirator) and full PPE, in anticipation. Twelve minutes after the activation of the critical medical emergency code, the code for category 1 cesarean section was activated over the public announcement system in view of persistent severe fetal bradycardia. The patient was brought swiftly to the designated isolation operating theatre in adherence to strict isolation transport protocol. Rapid sequence induction with intravenous thiopentone and succinylcholine was followed by intubation by the most senior anesthesiologist using McGrath videolaryngoscope to reduce direct airway aerosol exposure. Emergent cesarean section was performed uneventfully and baby was delivered 9 min after the activation of the category 1 cesarean section code. The patient was brought to intensive care unit postoperatively, following strict isolation transport protocol. The postoperative MRI brain showed posterior reversible encephalopathy, which was the likely etiology of the seizure. Her SARS-coV-2 swabs subsequently were found to be negative and she was de-isolated.

The expeditious and safe management of the emergency codes was enabled by the presence of established isolation practices and protocols. The public announcement system used for code activations allows all involved staff to be informed simultaneously about the patient's location and isolation status. Full PPE equipment is readily available at every isolation unit. A dedicated emergency maternal resuscitation kit was used to prevent contamination of other equipment. Strict isolation transport protocols were established. (Table 1) Only essential staff were

Table 1
Covid-19 suspect transport workflow.

From labor suite to isolation operating theatre	
1	Labor ward staff to inform operating theatre nurse manager on call
2	Operating theatre staff to prepare designated negative pressure operating theatre
3	Operating theatre nurse manager on call to inform labor ward staff when above three points fulfilled.
4	Patient transported to designated negative pressure operating theatre
Anesthetic team to don full PAPR and await patient's arrival at designated door to negative pressure operating theatre	
Security staff activated to cordon off corridor from labor suite isolation room to designated door to negative pressure operating theatre	
From isolation operating theatre to intensive care unit isolation ward	
1	Anesthetic runner nurse to call intensive care unit nurse-in-charge to fetch the patient
2	Security staff activated to cordon off corridor from designated operating theatre door closest to isolation operating theatre to intensive care unit
3	Intensive care nurse in full PPE to fetch patient at designated operating theatre door closest to isolation operating theatre
4	Patient transported to intensive care unit by intensive care nurse and anesthetic doctor

allowed to be present in the isolation operating theatre to prevent unnecessary staff exposure. PAPR could be worn quickly as the components were all fixed in place beforehand.

In conclusion, emergency healthcare delivery for suspected Covid-19 parturients must include protocols to ensure safety for healthcare workers and urgent response to medical emergencies. Comprehensive infection control and clinical management guidelines can be adapted to suit local practices.

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Declaration of competing interest

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We confirm that written informed consent for publication has been obtained from the patient described

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