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Respitory failure from COVID-19: use of CPAP with spinal anaesthesia for caesarian deliveries

AM Tiah, A Sharma, A Mathews
University Hospital of North Tees, Stockton on Tees

Introduction

The COVID-19 pandemic has raised new considerations for managing labour and delivery in symptomatic patients. Routine antenatal and postnatal care in a socially distant manner is encouraged to continue as it did prior to COVID-19.[1] Although two thirds of pregnant women are asymptomatic, symptomatic pregnant women are more likely to be admitted to critical care.[1] Managing the care of the symptomatic patient requires consideration for both the pathology of COIVD-19 and the anaesthetic technique to ensure the most beneficial outcome for the patient and the baby. We describe two cases of hypoxic respiratory failure secondary to severe COVID-19 presenting in late pregnancy, which were successfully managed by emergency caesarean delivery under spinal anaesthesia assisted with continuous positive airway pressure (CPAP).

Case report

Patient-1, a 36 year old female with mild asthma, presented to A&E at 36 weeks of gestation with two-days history of worsening dyspnoea and a ten-days history of myalgia, fatigue, and dry cough, with a positive test for COVID-19 in the community. On admission, she was hypoxic and tachypnoeic; chest X-ray showed extensive bilateral ground-glass opacification in-keeping with severe COVID-19 (Figure 1). She developed escalating oxygen requirements, and subsequently was commenced on CPAP.

Patient-2, a 31 year old gravida-5 para-4 female, presented at 35 weeks of gestation with a three-days history of exertional dyspnoea, chest tightness and productive cough with brown sputum. Although laboratory tests for COVID-19 were negative, due to the radiological features and her clinical course, it was decided by the multi-disciplinary team (MDT) to treat her 'as COVID-19' (Figure 2).

An MDT decision was made for emergency caesarean delivery for both patients; patient-1 due to respiratory distress and patient-2 due to respiratory distress and spontaneous labour. Surgery was conducted under spinal anaesthesia as per the standard local practice, with additional respiratory support provided with CPAP throughout the operation.

Post-operatively, both patients were managed in the high dependency unit (HDU) using COVID-19 treatment protocols and broad-spectrum antibiotics. Both patients were successfully weaned off their respiratory support and discharged from HDU after a few days.

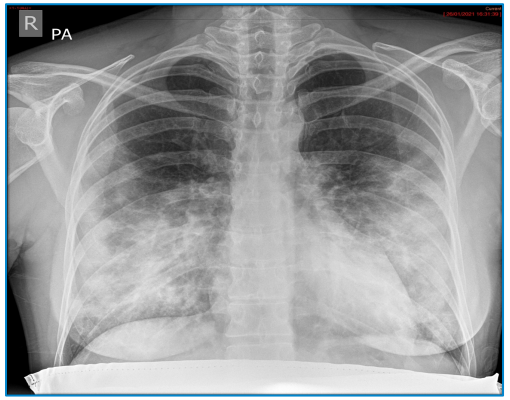


Figure 1: Chest X-ray for patient-1

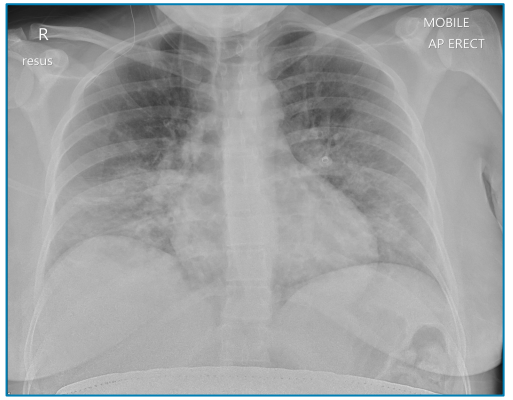


Figure 2: Chest X-ray for patient-2

Discussion

The prevalence of COVID-19 in pregnant women appears similar to that of the general population, often presenting with similar symptoms, of which fever and cough are most common.[1] COVID-19 is considered to have a negative impact on pregnancy, resulting in three times greater risk of preterm birth and increased risk of Caesarean delivery, with severe illness appearing to be more common in the third trimester.[1]Women symptomatic of COVID -19 are advised to labour in an obstetric unit, with MDT input, continuous foetal monitoring, and to maintain SPO2>94%.[1] Neuraxial technique for caesarean section has been recommended where possible.[2] Of all the patients admitted to critical care from September 1st 2020, 71.6% of those requiring basic respiratory support were discharged compared to 24.9% of those requiring advanced respiratory support.[3] This case series indicates that pregnant women with COVID-19 presenting for emergency caesarean delivery can be successfully managed with neuraxial anaesthesia supported by intra-operative CPAP, and are likely to have a more favourable outcome.

References

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