

Anaesthesia management and perioperative infection control measures for COVID-19 pregnant patients undergoing caesarean section: A case series

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ABSTRACT

Objective

The objective of this case series is to describe the perioperative management of COVID positive pregnant patients undergoing Caesarean section

Place and duration of study

Security Forces Hospital, Riyadh, Kingdom of Saudi Arabia between 1st March 2020 to 30th October 2020

Methodology

This was a case series of 8 cases of covid positive pregnant patients who underwent caesarean section. We collected all information of the patients via our online patient database

Results

Strict infection control measures were taken in order to minimise the risk to healthcare providers. Spinal anaesthesia was used in all cases without any problem.

Conclusion

Spinal anaesthesia can be safely used in covid positive pregnant patients undergoing caesarean section.

Keywords Covid-19 positive patients; obstetrics; caesarean section; infection control; spinal block; personal protective equipment

INTRODUCTION

In the month of December 2019, many cases of pneumonia were observed in Wuhan (China) with an unknown etiology. Later, WHO named the causative agent for this particular disease as severe acute respiratory syndrome corona virus 2 (SARS-CoV-2)¹. It was then declared as pandemic on 11th March, 2020. The disease presentation ranges from mild symptoms including dry cough to severe pneumonia leading to respiratory failure, sepsis and death. Increasing age and comorbidities were found to be associated with worsened outcome².

The information about the disease has been increasing and changing over the course of time since it was first diagnosed. There is still little knowledge about this disease among certain group of population like pregnant patients³. These patients are usually considered a high risk group for development of viral infection because of their unique physiology⁴. They present a significant challenge to

healthcare providers especially operation room (OR) staffs. We present a case series of COVID-19 positive pregnant patients coming to OR for caesarean section.

Case series

We did a total of 8 cases of confirmed COVID-19 positive patients who underwent caesarean section in our hospital since start of pandemic. Two of these patients were done as elective cases while the rest were emergencies. All patients were prepared as per hospital COVID-19 policy regarding surgery and anaesthesia. The primary surgical team informed the OR team one day before for elective cases and atleast 1-2 hour before for urgent or emergency surgeries. Preoperative assessment was primarily done on phone from primary team and nurse and then reassessment was done while patient arrived to OR.



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We assigned a separate negative pressure OR for all our COVID-19 positive cases coming for surgery. We minimised the staffing for OR by assigning two anaesthesiologists (one as standby if help was required), one anaesthesia technician, two surgeons (one consultant and one assistant) and two nurses (one scrub nurse and one circulator). A second circulator nurse was a clean runner and stayed outside the OR for providing supplies from clean room. All unnecessary equipments were moved out of OR. Anaesthesia machine and monitors were covered with see through plastic sheets. All necessary equipment, drugs and IV fluids needed for anaesthesia and surgery were prepared and made available inside OR in ample quantity.

Before calling the patient to OR, we had a briefing among OR team including surgeon, anaesthesiologist and nursing staffs. All OR staffs wore full PPE (personal protective equipment) including N-95 mask/PAPR (Powered Air Purifying Respirator), eye protection (eye shield/goggle), hazmat suite, surgical gown, surgical head cover, double gloves and surgical boot covers. Once OR setup was announced ready, patient's receiving nurse called the ward to get endorsement and patient was transferred to OR compound. We used a separate passage for transfer of COVID-19 positive patients in and out of OR compound. All the surfaces from the entrance of OR compound to the room was covered with plastic sheets. Once patient entered the room, the passage was closed for any entry or exit.

After routine ID checks, ASA guided monitoring was applied. Spinal anaesthesia was used in all our cases although full preparation was also made for GA in case if spinal fails. Eighteen (18) gauge IV canula was already inserted in the ward so preload with crystalloids was started while spinal block was being performed. Spinal block was performed using 26 gauge pencil point needle at either L3-4 or L4-5 level in sitting position. All aseptic measures were taken during spinal block. Heavy bupivacaine 0.5 % (10-12 mg) combined with 20-25 micrograms fentanyl was used. Once adequate level of block was achieved, surgery was allowed to be started. The management of hypotension was done by IV fluids and vasopressors like ephedrine or phenylephrine. The initial resuscitation of newborn was done inside OR. None of our patient had any anaesthesia or surgery related complication intraoperatively. All patients were recovered inside the OR by a PACU nurse who wore full PPE. All unused drugs or IV fluids were discarded after the end of surgery. Once patient met discharge criteria, PACU nurse contacted the primary ward nurse and gave endorsement on the phone. Patient was then transferred back to the ward by primary nurse.

DISCUSSION

SARS Covid 19 is a highly contagious disease and hence healthcare providers are at very high risk to get infected. It is therefore extremely important to plan perioperative care of these patients very carefully by considering both patient and health care providers' safety³. Multidisciplinary team approach including anaesthesiologist, obstetrician, midwife,

neonatologist and support services staff including OR staff should be used⁵.

Neuraxial block techniques are usually advised during delivery of COVID-19 patients, whether by vaginal route or Caesarean section as these techniques will reduce cardiopulmonary compromise induced by stress of labour. Use of spinal anaesthesia will also avoid all the risks associated with General anaesthesia in pregnant patients. Spinal anaesthesia is not considered an aerosolizing procedure, and hence the need for PPE will be reduced⁶.

Although, the risk to anaesthesiologist of performing spinal anaesthesia in a COVID-19 positive patient is unclear⁷.

It is advisable that patients undergoing caesarean section under spinal anaesthesia should wear a mask during the procedure. Sedative drugs should better be avoided because of their respiratory depressant effects. Patients may need lowest possible oxygen flows if required⁶. As our knowledge about this virus is still limited, our management strategies are based on general guide from currently available scientific literature.

CONCLUSION

This case series represent the effective methodology to deal with caesarean section in this pandemic challenge.

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