Case Report

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The Delivery Management of a First Case of COVID-19 Pregnant Woman in a Developing Country

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Abstract

The World experienced since December 2019 the emergence of SARS-CoV-2 in Wuhan, Hubei Province, China. The pandemic is currently spreading rapidly around the world causing numerous deaths and severe complications. There is a scarcity about the outcomes of this infection in pregnant women and fetus. The rate of infected pregnant women remains few and most of them with mild illness courses. We would like to highlight a case of the first pregnant woman diagnosed to have COVID-19 admitted to our hospital and to describe our policies in a developing country with limited resources.

Keywords: Outbreak; Delivery; COVID; SARS-CoV-2; RT-PCR; COVID cesarean delivery; SARS-COVID-19; Vertical transmission; Personal Protective Equipment (PPE)

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Introduction

The infection prevention and control considerations are for healthcare facilities providing obstetric care for pregnant patients with confirmed novel coronavirus disease (COVID-19) or pregnant Persons Under Investigation (PUI) in obstetric healthcare settings including obstetrical triage, labour and delivery, recovery and inpatient postpartum settings. These considerations are based upon the limited evidence available to date about transmission of the virus that causes COVID-19, and knowledge of other viruses that cause severe respiratory illness including influenza, severe acute respiratory syndrome coronavirus (SARS-CoV), and Middle East Respiratory Syndrome coronavirus (MERSCoV). The approaches outlined below are intentionally cautious until additional data become available to refine recommendations for prevention of person-to-person transmission in inpatient obstetric care settings.

Case Report

On July 31st 2020 a 44 year-old –pregnant woman (Gravida 3 Para 3) with two previous deliveries via vaginal route who was at 39 weeks of gestation was admitted to our department for SARS COVID infection. It is a well followed pregnancy without dysgravidy. She had experienced 10 days before her admission a rhinorrhea without fever or other symptoms. By virtue of the fact that she had a history of contact with COVID-19 infected family member, she underwent two throat swabs with a gap of two weeks. The two swabs were tested positive for SARS COVID according to World Health Organization guidelines for quantitative RT PCR. She was first kept isolated and as she remained asymptomatic and then transferred from a regional area of the country to our department for delivery. On admission the physical examination revealed a body temperature of 37.2. Pulse of 90 ppm respiratory rate of 17 breaths per minute and oxygen saturation of 99% ambient. The fetal heart rate was good, the tocograph did not show any contraction and the ultrasound examination was normal

Laboratory findings revealed Leukocyte count of 9.109/L Hemoglobin of 11 g/dl. Platelets of 150000/l C reactive protein of 25 mg/l. She was okay after being brought to the operating room via a COVID circuit established early at our hospital in the first wave of the pandemic. She underwent a cesarean section following World Health Organization Guidelines of the use of Personal Protective Equipment (PPE) dedicated to the health workers. She delivered a term live baby with an APGAR score of 9-10. Birth weight of 2 kg 800 without delayed cord clamping or skin-to-skin contact. The baby laboratory test of nasopharyngeal swab was found negative for COVID-19. The neonate was transferred to the pediatric ward and kept under observation.

The patient was isolated and kept under observation for 48 hours. No medication was given as she remained asymptomatic. All the healthcare workers having contact with that patient were tested negative for COVID-19.

Discussion

The outbreak of COVID-19 had spread rapidly throughout the world causing serious outcomes on a non-pregnant patient. We had insufficient data to understand the outcomes of this infection in pregnancy as the number of pregnant women tested positive for SARS-COV-2 is few and the clinical status is characterized by mild illness course in most cases. The immune status of pregnancy confers to this population a high risk for worse issues as any infectious disease accompanying pregnancy. In this case presentation our patient had undergone uneventful delivery through cesarean section giving birth to a live term baby. She remains asymptomatic and didn't experience worsened outcomes of COVID-19 infection like severe pneumonia. Recently a systematic review of 136 pregnant women tested positive for COVID-19 did not demonstrate significantly worsened outcomes compared to non-pregnant patient, however the rate of preterm birth and cesarean delivery are considerably higher than international averages [1,2].

A systematic review of 324 pregnant women examining the effects of coronavirus disease on maternal perinatal and neonatal outcomes shows that the rate of severe pneumonia with COVID-19 was 0-14%. The majority of pregnancies were delivered by Cesarean Section. There was one case each of neonatal asphyxia and death; 155 neonates had nucleic-acid testing in throat swabs and all, except three cases, were negative for SARS-CoV-2. There were seven maternal deaths, four intrauterine fetal deaths and two neonatal deaths reported in a non-consecutive case series of nine cases with severe COVID-19. Amongst the case reports, two maternal deaths, one neonatal death and two cases of neonatal SARS-CoV-2 infection were reported [1].

The few number of neonatal diagnosed infection suggest that there is no evidence for vertical transmission via intrauterine infection as in our case the baby had an APGAR Score of 09 at 1 min and 10 at 5 min and the baby laboratory test of nasopharyngeal swab was found negative for COVID-19. He stilled asymptomatic and under observation. Breastfeeding was encouraged under protection (the wearing of mask).

The analysis of 38 pregnant women with COVID-19, their newborn infants and maternal fetal transmission of SARS. Schwartz [3] showed that all neonatal specimens tested including placenta in some cases were negative by RT-PCR for SARS–CoV 2 suggesting that there is no evidence that SARS–CoV 2 undergoes intrauterine or trans placental transmission. A retrospective review of nine pregnant women who developed COVID-19 pneumonia in late pregnancy [4] found that there is no infected neonate and emphasizing the hypothesis of no evidence for intrauterine infection. The mild illness outcome in our case as the patient presented just rhinorrhea may explain the low risk of vertical transmission as the baby laboratory test of nasopharyngeal swab was found negative for COVID-19. However a severe presentation of COVID-19 during pregnancy associated with positive PCR in the neonate was reported [5]. It is admitted to be the earliest reported neonate case raising the concern for vertical transmission.

The choice of cesarean delivery in our case was conducted to minimize the time of delivery and to protect the health workers as a pre-emptive procedure as the vaginal route requires a long time observation. This finding suffers a lack of convincing evidence that the cesarean section is better and more protective than the vaginal route. Moreover, the majority of pregnant women delivered by cesarean section (reported in a systematic review of 324 of pregnant woman with COVID-19 [1]. In other cases [6,7] vaginal delivery was conducted uneventfully and none of neonates were infected with COVID-19. A major finding in this case was the tight organization to receive COVID case in a developing country and the rational use of personal protective equipment following World Health Organization guidelines [8,9]. To get an adequate response for the COVID-19 pandemic in our hospital, several procedures and policies were implemented early for healthcare workers. A triage and identification of high risk patient with suspected COVID-19 at the emergency department to prevent transmission of SARS-CoV-2 and to ensure safe entrances at the facility. A special circuit was established early as an entrance for patient with signs or with confirmed infection. In our case the patient was transferred to an operating room dedicated to COVID-19 cases via a COVID circuit entrance.

We conducted Interactive simulations to specify the rational use of personal protective equipment and management of COVID-19 case from the emergency department to the operating room then after surgery. The wearing and discarding of PPE was a fundamental point of simulation. A specific point to rise in our experience that all non-urgent operation were post-poned. As a response for the anxiety of health care workers who are under tremendous pressure, hotel accommodation was available for those who prefer not to go home to prevent their family members' from contagion.

Limitations

This observation is limited by the simple case. We report a well evolution of a COVID case without severe outcomes our policy's capacity to manage the outbreak can be exceeded if the number of cases and worsened outcomes rise. We did not evaluate the presence of virus in amniotic fluid, cord blood, or placental tissue that could further clarify pathogenesis.

Conclusion

The rate of infected pregnant women with COVID-19 remains few and little is known about vertical transmission. There is a lack of convincing evidence that the cesarean delivery is more protective than the vaginal delivery. Otherwise perinatal transmission could not be ruled out. Our strategies and policies in a developing country including the PPE and the management of COVID case should be reviewed and updated as the number of cases is increasing on a daily basis.

Conflict of Interest

None declared.

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