Case report: decreased fetal movements in a COVID-19 infected pregnancy in Jeddah, Saudi Arabia

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ABSTRACT

Background: The current global pandemic is caused by the severe acute respiratory syndrome - coronavirus 2, otherwise known as COVID-19. Pregnancy has effects on a patient’s physiological functioning; however, the knowledge about the effects of COVID-19 on the pregnant patient and the unborn child is still lacking.

Case Presentation: A case of a 36-year-old pregnant woman was presented to a family medicine clinic with decreased fetal movements. This patient had the additional complication of being COVID-19 positive. She was prescribed symptomatic treatment only given the relative mildness of her infection. The patient had a typical flu-like symptoms of COVID-19. However, the complaint of decreased fetal movements on a background of coronavirus infection called for further investigations.

Conclusion: This case illustrates the importance of close monitoring and follow up of COVID-19 affected pregnancies. This presents the opportunity to conduct case series for literature enrichment, to compare the treatment plans, and to follow up the complications.

Keywords: COVID-19, coronavirus, pregnancy, maternal infection, neonatal outcome, case report.

Introduction

The current global pandemic is caused by the severe acute respiratory syndrome - coronavirus 2 (SARS-CoV-2) [1]. COVID 19 is the disease caused by this virus. Up until now, it has affected more than 192 million people across the world with a death toll of approximately 4 million people [2]. The virus appears to have originated in animals, with the first human cases being reported in Wuhan, China in December 2019 [1]. Thereafter, it has spread globally. It was declared by the WHO to be a pandemic in March 11, 2020 [1].

This disease had a profound effect on all aspects of human society since its first appearance almost 2 years ago. The increasing availability to COVID-19 testing, thereafter COVID-19 vaccination, has altered this picture of morbidity and mortality. As of the time of writing, there was no known cure for the illness and the treatment remains supportive [3].

Pregnancy has effects on multiple aspects of the patient’s physiological functioning including the respiratory, cardiovascular and immune systems. The effect of COVID-19 on the pregnant patient and that of the unborn child is therefore of great interest to the scientific community. However, considering the numbers of patients affected by COVID-19, the data on coronavirus infection in pregnancy is still lacking.

One systematic review of 230 pregnancies affected by COVID-19 revealed complications such as premature delivery (24.74%) as well as premature rupture of membranes (8.49%), mechanical ventilation (2.38%), fetal distress (5.45%), and fetal death (1.28%). A vertical transmission rate of 3.91% was also found [4].

Case Presentation

A 36-year-old pregnant healthcare worker presented in July 2021 to the employee health clinic with a chief complaint of decreased fetal movements for 1 day. Prior to the COVID-19 pandemic, this patient had a normal pregnancy with no medical complications. In the current pregnancy, though, she experienced increased fatigue, myalgia, fever, dry cough, and a sore throat. She was immediately evaluated for COVID-19 and tested positive. She was prescribed asymptomatic treatment only given the relative mildness of her infection. The patient had a typical flu-like symptoms of COVID-19. However, the complaint of decreased fetal movements on a background of coronavirus infection called for further investigations.

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COVID-19 infected pregnancy

A biophysical profile was carried out and proved reassuring, demonstrating a reactive non-stress test. An ultrasound scan showed a single active fetus, an anteriorly placed placenta, and adequate amniotic fluid.

Aside from the positive COVID-19 PCR test, the patients’ other laboratory investigations, comprising a full blood count, inflammatory markers, thyroid, liver and kidney function tests were all unremarkable. The final diagnosis was mild COVID-19 infection, with no evidence of coronavirus-related pneumonia.

Fetal movements were first noticed by the mother between 18 and 20 weeks of gestation and any reduction or alteration in such movements might herald significant pathology [5]. The etiology of reduced fetal movements (RFM) includes anterior position of the placenta, sedating drugs, fetal malformations, iatrogenic causes (such as corticosteroids administered to enhance fetal lung maturation), and the fetal sleep state [5].

This patient had the additional complication of being COVID-19 positive, but given the relative paucity of information the medical community have regarding its effect on pregnancy, it is uncertain how much this diagnosis would be contributing to RFM.

Infectious disease colleagues were consulted and they recommended symptomatic treatment only, as well as home isolation and follow up. The patient presented at 37 + 6 weeks with spontaneous rupture of membranes that revealed meconium liquor, a closed cervix, and fetal breech presentation. The patient was delivered by emergency lower segment caesarean delivery and gave birth to a healthy baby boy weighing 3.3 kg. There were no obstetric complications such as postpartum bleeding, infection, or retained placenta.

The neonate’s APGAR score was 9/10 (acrocyanotic). The baby was admitted to the nursery as he was not in respiratory distress and did not require any intensive care monitoring. However, the baby had mild physiological jaundice, attributable to his late preterm delivery. Both the mother and baby were stable when discharged within 2 days postpartum. The newborn was assessed and discharged from the jaundice clinic at the age of 1 week.

Discussion

The patient had the common but non-specific symptoms of COVID-19 such as loss of smell, dry cough, and fever. However, the patient’s experience of RFM in the light of coronavirus symptoms called for further investigations.

The literature review found a similar case of a 27-year-old woman infected with COVID-19 who presented at 31 + 4 weeks complaining of headache, malaise, cough, shortness of breath, fever, and RFM [6]. Her investigations showed an infected placenta with SARS-CoV-2 suggesting possible perinatal transmission of COVID-19 [6]. Although the placenta did not undergo examination by a pathologist, it is within the realms of possibility that the current patient may have had a similar etiology of RFM.

While coronavirus is initially suspected through the clinical symptoms, definitive diagnosis is achieved by a diagnostic nucleic acid amplification testing which is most frequently done with a reverse-transcription polymerase chain reaction (RT-PCR) assay [1]. In spite of RT-PCR’s sufficient analytical sensitivity in detecting the viral load in infected patients, the issue of false negative RT-PCR tests has been raised. Some authors have reported that the two most common reasons for this are contamination and determining viral load cut-off [7]. Cut off is defined by whether a specimen is positive with a low viral load versus being indeterminate or equivocal [7]. They concluded that 84% of the tests are true positives [7]. Given this high percentage, it suggests that the current patient is highly likely a true positive case of COVID-19 and hence it might be a possible etiology of the RFM.

The Centre for Disease Control and Prevention recommended that the general principles of managing COVID-19 during pregnancy are the same as those of non-pregnant patients [3]. These include avoidance of medications that are normally contraindicated in pregnancy. Therefore, paracetamol is to be utilized for symptom control in COVID-19 affected pregnancy providing there are no other contraindications to its use; non-steroidal anti-inflammatory agents are to be avoided [3]. Given the condition of the current patient at the time of presentation, her treatment only warranted symptom control. However, literature search revealed a case of a 31-year-old pregnant female infected by COVID-19 where the illness was complicated by acute respiratory distress syndrome [8]. In that case, the management focused on early mechanical ventilation and extracorporeal membrane oxygenation given her disease severity [8].

The current case resulted in a physiological neonatal jaundice that was attributed to his late preterm delivery. Literature search revealed a case of a pregnancy affected by coronavirus at 34 + 1 weeks with the delivery being...
carried out at 37 + 5 weeks through caesarean section [9]. The neonate was found to have physiological jaundice that was not attributed to the maternal infection given the medical history and laboratory investigations. However, literature search also found a study that examined the clinical outcomes of 162 COVID-19 infected mothers and 165 neonates [10]. The authors reported various clinical outcomes of the newborn such as meconium-stained amniotic fluid (23.63%), premature birth (16.9%), respiratory distress (10.5%), moderate to severe hypoxic ischemic encephalopathy (3.6%), sepsis (7%), and hyperbilirubinemia (8.7%) [10]. Hence it is possible that COVID-19 infection might have been a contributory factor to neonatal jaundice in the current patient.

**Conclusion**

A case of a pregnant woman diagnosed with mild COVID-19 in the third trimester who presented with RFM. She had a late preterm emergency delivery due to meconium-stained liquor. The neonate had physiological jaundice that was resolved within 1 week. This case is among the first reported cases of maternal coronavirus infection and its outcome in Saudi Arabia. It illustrates the importance of reporting such cases given the novelty of the diseases and its unknown effects on pregnancy. This presents the opportunity to conduct case series for literature enrichment, to compare the treatment plans, and to follow up the complications.

**List of Abbreviations**

- PCR: Polymerase chain reaction
- RFM: Reduced fetal movements
- RT-PCR: Reverse-transcription 135 polymerase chain reaction
- SARS-CoV-2: Severe acute respiratory syndrome coronavirus 2

**Conflict of interest**

The authors declared that there is no conflict of interest regarding the publication of this case report.

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**Consent for publication**

Informed consent was obtained from the participant.

**Ethical approval**

Ethical approval was granted by Institutional Review Board with reference number IRBC/2345/21 dated November 9, 2021.

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