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A Case Report

Normal Vaginal Delivery in a Woman with COVID-19

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Abstract

Background: The results of studies on the outcomes and course of coronavirus disease-2019 (COVID-19) in pregnant women are inconsistent. Proper characterization of the disease process can help healthcare providers in the accurate management and control of the disease in vulnerable individuals, particularly pregnant women. We herein report a case of a multiparous pregnant woman with COVID-19.

Case description: A 30-year-old pregnant woman (gravida 3 para 2) with gestational age of 39 weeks and six days and a history of occasional fever and chills in the past week was admitted to the midwifery triage with complaints of myalgia as well as severe pubic symphysis and back pain. The patient had the following vital signs at admission: fetal heart rate: 140 beats/min, oxygen saturation: 96%, temperature: 37 oC, respiratory rate: 17 breaths/min, pulse rate: 126 beats/min and blood pressure: 100/70 mmHg. The mother was positive for COVID-19 in both PCR and chest CT-scan findings, which demonstrated presence of multiple opacities in both lungs in favor of viral pneumonia.

Vaginal delivery was performed and an apparently healthy, term and cephalic baby girl was born with an Apgar score of 9 at one minute and 10 at five minutes after birth. The baby was negative for COVID-19 based on the molecular testing.

Conclusion: With proper management and timely separation of the mother from the baby and preparing breast milk by a non-infected person, no maternal or neonatal complications were observed in our case. More studies are required to gain a better understating about the possible morbidities and mortalities associated with COVID-19 during pregnancy.

Keywords: Pregnancy; COVID-19; Vaginal delivery

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INTRODUCTION

The coronavirus disease-2019 (COVID-19) outbreak spread rapidly in China and beyond. Evidence suggests that the disease can be spread from person to person through respiratory droplets expelled from the mouth and nose. However, the possibility of fecal-oral transmission has been raised (1, 2).

According to the World Health Organization (WHO), there were 25,842,652 confirmed COVID-19 cases and 858,629 deaths from December 2019 until now (September 3, 2020). The number of confirmed cases in Iran has been reported to be 378,752, while 21,797 COVID-related deaths have been reported (3).

With the continuous rise in the number of confirmed cases and the mortality rates worldwide, identification of vulnerable individuals is of great importance (4). Pregnant women are among those who are vulnerable to COVID-19 infection. Research shows that the coronavirus infection has been associated with maternal and fetal complications (5-8). To date, none of the studies confirmed placental transmission of the infection during pregnancy (9-11). Low weight, preterm delivery, fetal respiratory distress and neonatal death have been reported as some complication of COVID-19 in pregnant women (12, 13).

Due to the physiological changes in the immune and cardiopulmonary systems during pregnancy, pregnant women may develop a more severe illness after viral respiratory infections. Based on evidence, most women suspected of having COVID-19 have undergone cesarean section, but newborns of women who had normal delivery were also negative for COVID-19. There has been no report of vertical mother-to-fetus transmission of COVID-19 (14-17). In a study by Dashraath et al. on 55 pregnant women with COVID-19 and 49 infants, there was no evidence of mother-to-fetal vertical transmission, and cesarean section was performed to terminate the pregnancy because of emergencies (6). However, in a study by Buonsenso et al., two COVID-19-positive infants were identified after a two-week follow up (despite the fact that the infants were asymptomatic) (3). There was also a case of 15-day-old infant with COVID-19. The infant was born by cesarean section to a mother with fever and lethargy (18). Proper identification of the disease in pregnant women can help healthcare providers in the management and accurate control of the disease in this sensitive group. Since COVID-19 is an emerging disease and there is still a lot to learn about the infection process, we aimed to report of a case of a pregnant woman with COVID-19 who had normal delivery.

CASE PRESENTATION

A 30-year-old pregnant woman (gravida 3 para 2) with gestational age of 39 weeks and six days and a history of occasional fever and chills in the past week was admitted to the midwifery triage with complaints of myalgia as well as severe pubic symphysis and back pain. Fetal cardiotocograph was normal. Vaginal examination showed that her cervix was 4 cm dilated, 30% effaced and -3 station. The fetus had cephalic presentation. Vital signs at admission were as follows: fetal heart rate: 140 beats/min, oxygen saturation (SPO2): 96%, temperature: 37 oC, respiratory rate (RR): 17 breaths/min, pulse rate (PR): 126 beats/min, blood pressure (BP): 100/70 mmHG. Since the mother had a history of fever and chills, complete blood count, blood grouping and Rh typing, C-reactive protein (CRP), erythrocyte sedimentation rate (ESR), urine analysis tests were requested (Table 1).

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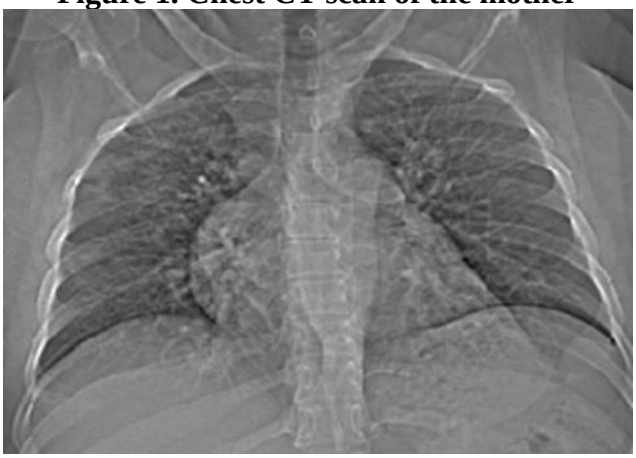
Table 1. Laboratory findings at time of admission and after delivery

Variable / Time	White blood cell count	Platelet count	Lymphocyte	ESR	CRP	Urine analysis
At admission	12,300	385,000	21.30 (2619.9)	57	+	Bood +++ RBC= Many Keton+ Other: Normal
An hour after delivery	17,600	331,000	11.50 (2024)	81	+++	

Thirty minutes after hospitalization, vaginal and anatomical examinations were carried out, which indicated 6 cm dilation, 80% effacement, 0 station, artificially opened amniotic sac and thick meconium. Immediately after amniotomy, monitoring was performed and simple Ringer's solution was infused. Twenty minutes later, vaginal delivery was performed and an apparently healthy, term and cephalic baby girl was born with an Apgar score of 9 at one minute and 10 at five minutes after birth. The baby had 2.7 kg weight, 48 cm height a head circumference of 32.5 cm. Based on the ESR and CRP findings, the mother was transferred to the isolation room. The infectious diseases specialist recommended high-resolution CT-scan and polymerase chain reaction (PCR) test due to COVID-19 suspicion. At day two of admission, CT-scan findings demonstrated presence of multiple opacities in both lungs in favor of viral pneumonia (Figure 1). Therefore, the mother received hydroxychloroquine (400 mg) bds, diphenhydramine syrup q8h, ceftriaxone injection q6h and vitamin C supplement q1d. Due to the lung involvement in CT-scan, the baby was separated from the mother and fed through breast milk according to pediatrician recommendations. On the third day, PCR was performed for both the mother and the newborn.

Figure 1. Chest CT-scan of the mother



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The patient was discharged from the hospital and was recommended to self-isolate at home for two weeks. The patient was advised to contact an infectious disease specialist in case of shortness of breath and cough and to check the results of the requested laboratory tests three days after the discharge. At time of discharge, the mother had BP of 100/65 mmHg, PR of 82, RR of 17 breaths/min, temperature of 37 oC and SPO2 of 96%. The patient was also advised to take hydroxychloroquine tablets (400 mg) bds, fresolin tablets (60mg) q1d and amoxicillin (500mg) q8h. Based on the PCR test, both the mother and the baby were negative for COVID-19. The baby had no sign of respiratory infection or pneumonia.

DISCUSSION

We herein reported a 30-year-old multiparous pregnant woman with COVID-19 who had natural delivery at gestational age of 40 weeks and three days. In a study on three pregnant women with COVID-19, two subjects were multiparous and aged 30-34 years with no history of underlying disease. One mother had normal delivery, while the remaining two underwent cesarean section. The newborns had no symptoms of respiratory distress (19). In a study by Chen et al. on nine pregnant women with COVID-19 who were admitted to a hospital in Wuhan, China, five were full term and all subjects underwent cesarean section(20). In other studies, normally delivered infants had no sign of infection (2, 14, 21, 22). In a study on 116 pregnant women with COVID-19, 85.9% of subjects underwent cesarean section, of which 33% were terminated due to the disease, symptoms of pneumonia and other indications including multiple repeat caesarean sections, preeclampsia, placenta previa and fetal growth retardation. The mentioned study also found no significant association between route of delivery and risk of fetal infection (22).

At time of admission, our case had fever, chills and myalgia. Ambrosino et al. reported fever (54%), cough (35%) and myalgia (17%) as the most common symptoms of COVID-19 in pregnant women(23). Irani et al. also reported fever (89.1%), cough (72.2%) and fatigue (42.5%) as the most common symptom in pregnant(24). The most common symptoms of COVID-19 have been reported to be fever, shortness of breath and dry cough. However, some patients may experience other symptoms such as dizziness, nasal congestion, rhinorrhea, sore throat, abdominal pain, nausea or diarrhea (25, 26). According to previous reports, COVID-19 causes multiple maternal and neonatal complications including abortion, preterm delivery, premature rupture of membranes, respiratory distress, low birth weight, hospitalization in neonatal intensive care unit and stillbirth(10, 23, 27, 28). In our case, the infant had no complication and was born with Apgar score of 9 at one minute. Similarly, some studies reported no severe neonatal and maternal complication (15).

Since our case was COVID-19- positive and symptomatic, she was separated from the baby and the baby was fed with breast milk. After the discharge, no sign of pneumonia was observed in the baby. Augusto et al. confirmed the safety of breastfeeding in mothers with COVID-19 (29). In a study by Wu et al., of three breast milk samples, one sample was positive for COVID-19 in PCR on the first day after delivery but negative in the follow-up on the third day. The other two samples were negative (30). Due to the presence of anti-viral antibodies in breast milk, breastfeeding could have potential protective effect on the baby (31).

CONCLUSION

With proper management of pregnant woman and timely separation of the mother from the baby and preparing breast milk by a non-infected person, no maternal or neonatal complications were observed in our case. Raising public awareness about the

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disease, especially in high-risk individuals, such as pregnant women is of upmost importance. More studies are required to gain a better understating about the possible morbidities and mortalities associated with COVID-19 during pregnancy.

DECLARATIONS

Funding

Not applicable.

Ethics approvals and consent to participate

Written informed consent was obtained from patient prior to participation in the study.

Conflict of interest

The author declares that there is no conflict of interest regarding publication of this article.

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