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Case Report

Coronavirus Disease-2019 During Postpartum Period: A Case Report

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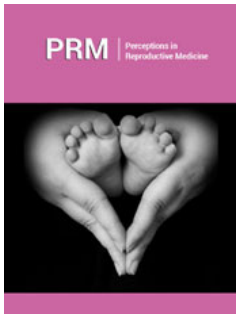

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Abstract

Introduction: The coronavirus disease 2019 (COVID-19) is a global emergency affecting a majority of countries all over the world. Burkina Faso recorded its first confirmed case during the postpartum period. This study aimed at reporting experiences related to COVID-19 case management in a postpartum period.

The case: The patient was a 26-years old woman in her 5th pregnancy, 4th childbirth with no medical history. She was referred by the Regional Hospital Center of Dori (located 300 kilometers from the Capital Ouagadougou) for a kidney failure that appeared 21 days after a cesarean section. The clinical examination and preliminary laboratory results after admission to the Yalgado Ouedraogo Teaching Hospital (YOTH) highlighted a poor general condition, an Acute Respiratory Distress Syndrome (ARDS), an infectious syndrome and a kidney failure. During the patient interview, there was no travel history or known contact with a suspected COVID-19 case. However, based on the symptoms presented in the patient, one of the core diagnostic hypotheses included the novel coronavirus disease (COVID-19) associated with an acute pulmonary edema and a kidney failure. While waiting for the patient transfer to the nephrology department for starting the dialysis, the following treatment was administered: Oxygen therapy, antipyretics, antibiotics and injectable diuretics. Moreover, additional lab tests were ordered for COVID-19 investigation. Unfortunately, after the first hospital admission day, the patient condition deteriorated, leading rapidly to the patient death. Forty-eight hours later the death, the tests' results came back positive to COVID-19, confirming therefore the first national known case of COVID-19 in a postpartum period.

Conclusion: Delay in receiving the COVID-19 testing results, a lack of medical training to early detect COVID-19 cases and an absence of COVID-19 case management guidelines were found as major diagnostic issues in the early phase of the epidemic in Burkina Faso. Additional factors such as comorbidities seemed to have played an essential role in worsening the clinical condition of the patient. However, further studies using in-depth statistical methodologies are needed to analyze the association between maternal postpartum period and COVID-19 disease.

Keywords: Case report; COVID-19; Diagnostic issues; Postpartum period; Burkina Faso

Abbreviations: WHO: World Health Organization; YOTH: Yalgado Ouedraogo Teaching Hospital; PCR: Polymerase Chain Reaction

Introduction

The novel coronavirus disease (COVID-19), discovered in December 2019 in China, spread rapidly around the world and was declared a pandemic by the World Health Organization (WHO) on March 11, 2020 [1,2]. Public health experts and institutions mentioned COVID-19 as a serious threat and a global health emergency that needed to be urgently addressed [3]. On March 3rd, 2020, WHO reported more than 180,000 COVID-19 confirmed cases worldwide, with an estimated 3.4% global mortality rate [3,4]. The disease affects all age and gender groups, and constitutes as a result, a major public health challenge for all including pregnant and postpartum women [5,6]. Research showed that pregnant and postpartum women were equally susceptible to infection with Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2) [7-10]. In addition, the COVID-19 case-fatality rate in pregnant women could be as high as 25% [3].

Burkina Faso recorded its first confirmed cases of novel coronavirus disease on March 9, 2020. Since then, considerable efforts (physical distancing, avoidance of social gatherings, national and international travel bans, closure of schools and markets, sensitizations on regular handwashing, case management, contact tracing, and many more) have been made to slow down the spread of the disease and flatten the incidence curve. However, despite these unprecedented measures, the country continued to record new daily COVID-19 cases and as of April 20, 2020, had reported more than 600 confirmed cases with 41 deaths [11]. On April 21, 2020, The Department of Obstetrics and Gynecology (OB/GYN) of the Yalgado Ouedraogo Teaching Hospital (YOTH) recorded its first confirmed case of COVID-19 in a woman during her postpartum period. This article describes the COVID-19 case management experience of this postpartum woman admitted at the department of obstetrics and gynecology.

Material and Methods

This is a descriptive case report study depicting the clinical features (including patient history) as well as the lab results and treatment of a single COVID-19 postpartum woman admitted on April 21, 2020 at the department of obstetrics and gynecology of the yalgado ouedraogo teaching hospital in Burkina Faso.

Result

Patient history

The patient was a 26 years old married housewife living in Sebba, a city located in the Sahel region of Burkina Faso (around 300 kilometers from the Capital Ouagadougou). She had in total five pregnancies that ended in three living children, one stillborn, and one abortion. Her interview revealed that, for her last pregnancy, she regularly attended antenatal consultations in the district hospital of Sebba until labor time. On that day, after feeling painful contractions and leakage of fluid, she went to the maternity ward of the district hospital of Sebba for delivery. However, after the medical examination, a cesarean was decided and performed because of an absence of fetal movements and a fetopelvic disproportion. No per and post-operative complications were reported. The patient was then discharged five days after the C-section. Unfortunately, 16 days after being discharged, the patient was readmitted to the district hospital of Sebba for headache, asthenia, and oliguria in a postpartum period. She was first transferred to the Regional Hospital Center (CHR) of Dori (where a kidney failure was diagnosed) and then, to the YOTH department of gynecology and obstetrics. Except for the previous C-section, her relatives did not report any particular medical and surgical history, as well as no travel history or known contact with a suspected COVID-19 case.

Clinical examination

General examination: At the hospital admission, the patient's general examination revealed a bad general condition, clear consciousness (Glasgow score of 15), no conjunctival icterus or pallor, discreet edema of the lower limbs, body temperature of 38.1°C, blood pressure of 118/80mmHg. The pulse and respiration rates were respectively 128 beats and 40 breaths per minute. Unfortunately, the patient oxygen saturation level was not taken at her entrance in the emergency room. A 24-hour urine collection highlighted an oliguria at 200 milliliters.

Physical examination: A physical examination of the patient concluded to an abdominal guarding, preventing a complete pelvic examination. The respiratory examination noted a shortness of breath as well as bilateral crackles. The rest of the examination was normal (including the bimanual palpation of the kidney).

Diagnostic assumptions: Two diagnostic hypotheses were formulated: 1) a pneumopathy (induced by common germs) associated with a kidney failure in a postpartum context, 2) a novel coronavirus disease (COVID-19)-WHO critical stage-complicated with an acute pulmonary edema and a kidney failure.

Complementary exams

At the patient admission in the department of obstetrics and gynecology, blood samples were drawn for lab tests (including complete blood counts and creatinine). The lab results showed a low white blood cell count of 16,000 elements per cubic millimeter (16000/mm^3), hemoglobin level of 9 grams per deciliter and platelet count level of 111,000 elements per mm^3. The creatinine level was high at 1655 micro-mol per liter (µmol/L). Considering all the patient's clinical symptoms and the ongoing COVID-19 pandemic, additional samples were collected for COVID-19 detection. The tests results confirmed, 72 hours later, that the patient was positive to COVID-19. Unfortunately, no chest CT scan could not be performed.

Treatment

Since her admission, the patient received the following treatment: oxygen 6 liters per minute, 3rd generation cephalosporin 1 gram per 24 hours through a direct intravenous infusion, imidazole 500 milligrams (mg) every 8 hours in a slow infusion, lactated Ringer's infusion 1 liter per 24 hours, isotonic glucose solution 1liter per 24 hours, isotonic saline solution 1liter per 24 hours, injectable paracetamol 1 gram every 8 hours in an infusion and finally, 80mg every 12 hours of diuretics in a direct intravenous infusion. An urgent dialysis was prescribed to the patient and her transfer to the department of nephrology was planned.

Evolution

The patient clinical condition deteriorated rapidly, presenting a persistent respiratory distress syndrome, fever with an altered state of consciousness. Unfortunately, the patient's death occurred a day after her hospital admission. The diagnosis of death suggested was severe acute respiratory distress syndrome and multi-visceral failure.

Discussion

Our postpartum patient tested positive to COVID-19. She was a resident of the Sahel region of Burkina Faso, area affected by the novel coronavirus disease. Indeed, the first case of COVID-19 was recorded in this region on March 30, 2020, 20 days after the onset of the disease in Burkina Faso [11]. In our case, the information

collected from the patient and her relatives revealed no travel history or known contact with any suspected COVID-19 case. However, this information should be analyzed carefully for the following several reasons. It is now widely known that the disease incubation period ranges from 6 to 14 days, and suspected cases can remain asymptomatic until recovery [3]. In addition, Burkina Faso did not implement a massive screening strategy, but rather a screening for only suspected cases [12]. Consequently, it is logical to believe that the screening method did not detect most of the cases, especially those that are asymptomatic. No matter what was the origin of her infection, the late diagnosis could present several potential consequences. First, there is a high risk of COVID-19 spreading among her family members, and the health workers at the hospitals of Sebba, Dori and YOTH. As she was not a COVID-19 suspected case, it is likely that some of those health workers and family members did not take enough precautions while taking care of her. Second, the national COVID-19 preparedness and response level was not enough to induce an early detection of the disease. Many public health teams were not trained to detect and manage any covid-19 case. Only a few people were responsible for the process. This could justify the fact that the diagnosis hypothesis of COVID-19 was never mentioned either at the District Hospital of Sebba or at the Regional Hospital of Dori, even though she was hospitalized in both hospitals.

This clinical case reminds us of the urgent need to identify, at various levels of the health system, a well-equipped health facility or location where all COVID-19 suspected cases would be isolated and treated. These health facilities must be identified in all regions of the country and supplied with adequate equipment and medical personnel including medical doctors, nurses, midwives, obstetricians, pediatricians, anesthetists, lab specialists and so on. The patient had no known medical or surgical history, but her recent delivery is likely to have weakened her immune system. This could therefore explain a potential higher severity of the disease among pregnant or postpartum women. No previous studies had analyzed any particular exposure of women in the postpartum period, let alone post cesarean section, compared with women who have not been pregnant [7]. The patient presented several clinical features including a respiratory distress syndrome and fever. In the description of coronavirus disease, fever is the most common clinical feature described in COVID-19 cases. Additional symptoms also include cough, shortness of breath, asthenia, headache, diarrhea, and in extreme cases, a severe acute respiratory distress leading sometimes to death [7,13,14]. Further lab investigation using Polymerase Chain Reaction (PCR) tests was performed and confirmed a positive COVID-19 diagnosis in in the patient. Regarding the patient's bad clinical condition (oxygen dependency and other severe clinical symptoms), a chest CT scan could not be performed. The chest CT scan is an important tool for a correct case management of any COVID-19 disease. Therefore, this specific kind of equipment should be made accessible to the health facilities.

The creatinine level was elevated at 1655µmol/L. This result may be justified by the multi-visceral failure observed in this clinical case. Renal failure and acute respiratory distress syndrome are part of the COVID-19 described complications and have unfortunately a potential to increase the patients' risk of death [15,16]. The patient had a caesarean section at the district hospital of Sebba and was in the postpartum period before her admission to the YOTH. Research showed that many COVID-19 positive cases have been diagnosed in pregnant women and more frequently in the postpartum period, especially in post-caesarean section [17-19]. There is no current report highlighting a possible transmission of the virus during a caesarean section, however health professionals should take more precautions regarding this airborne disease [14,15]. Currently, no specific treatment for coronavirus has yet been approved and clinical trials on chloroquine-azithromycin are still ongoing in Burkina Faso [11,15]. The existing protocols of COVID-19 case management in pregnancy include early detection and isolation, aggressive infection control using prescription drugs, oxygen therapy, prevention of fluid overload, antibiotic management (secondary to the risk of bacterial infection), and early mechanical ventilation to anticipate any respiratory failure [15].

The patient's clinical course deteriorated rapidly, leading to her death. The COVID-19 diagnosis confirmation was received around 48 hours after the patient was dead. Samples that were collected for the covid-19 diagnosis took at least 72 hours for lab tests' confirmation. This is due to the fact that collected specimens had to be sent from Ouagadougou to Bobo-Dioulasso, where is found the only laboratory approved at the national level for this type of lab tests. This timing is considered, especially in an epidemic scenario. Efforts should be made to reduce the time for a COVID-19 case confirmation.

Conclusion

The department of obstetrics and gynecology of the Yalgado Ouedraogo teaching hospital registered its first COVID-19 case on April 21, 2020. Several factors including shortage of tests kits, delay in the receiving results, lack of COVID related trainings for the health workers were found to have influenced the late diagnosis in our patient. In these uncertain times due to the COVID-19 pandemic, health workers at all levels of the health system are more exposed and should remain extremely cautious while dealing with any patient. It is recognized that co-morbidity rapidly worsens the clinical picture of patients with covid-19. However, further studies using in-depth statistical methodologies are needed to analyze the association between maternal postpartum period and COVID-19 disease.

References

1. Sharma KA, Kumari R, Kachhawa G, Chhabra A, Agarwal R (2020) Management of the first patient with confirmed COVID-19 in pregnancy in India: From guidelines to frontlines. Int J Gynecol Obste 150(1): 116-118.

2. Tang K, Gaoshan J, Ahonsi B, Ali M, Bonet M (2020) Sexual and reproductive health (SRH): A key issue in the emergency response to the coronavirus disease (COVID-19) outbreak. Reprod Health 17(1): 76.

3. Poon LC, Yang H, Kapur A, Melamed N, Dao B (2020) Global interim guidance on coronavirus disease 2019 (COVID-19) during pregnancy and puerperium from FIGO and allied partners: Information for healthcare professionals. Int J Gynecol Obstet 149(3): 273-286.

4. Dashraath P, Wong JLJ, Lim MXK, Lim LM, Li S (2020) Coronavirus disease 2019 (COVID-19) pandemic and pregnancy. Am J Obstet Gynecol 222(6): 521-531.

5. Guo L, Wei D, Zhang X, Wu Y, Li Q (2019) Clinical features predicting mortality risk in patients with viral pneumonia: The MuLBSTA Score. Front Microbiol 10: 2752.

6. Wu C, Yang W, Wu X, Zhang T, Zhao Y (2020) Clinical manifestation and laboratory characteristics of SARS-CoV-2 Infection in Pregnant Women. Virol Sin 35: 305-310.

7. Elshafeey F, Magdi R, Hindi N, Elshebiny M, Farrag N (2020) A systematic scoping review of COVID-19 during pregnancy and childbirth. Int J Gynecol Obstet 150(1): 47-52.

8. Qiancheng X, Jian S, Lingling P, Lei H, Xiaogan J (2020) Coronavirus disease 2019 in pregnancy. Int J Infect Dis 95: 376-383.

9. Stumpfe FM, Titzmann A, Schneider MO, Stelzl P, Kehl S (2020) SARS-CoV-2 infection in pregnancy-a review of the current literature and possible impact on maternal and neonatal outcome. Geburtshilfe Frauenheilkd 80(4): 380-390.

10. Yang Z, Wang M, Zhu Z, Liu Y (2022) Coronavirus disease 2019 (COVID-19) and pregnancy: A systematic review. J Matern Fetal Neonatal Med 35(8): 1619-1622.

11. le faso.net. dossiers coronavirus.

12. Ministry of Health (2020) Preparedness and response plan for the Covid-19 epidemic in Burkina Faso. India, p. 68.

13. Guan W, Ni Z, Hu Y, Liang W, Ou C (2020) Clinical characteristics of coronavirus disease 2019 in China. N Engl J Med 382(18): 1708-20.

14. Lai CC, Shih TP, Ko WC, Tang HJ, Hsueh PR (2020) Severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) and coronavirus disease-2019 (COVID-19): The epidemic and the challenges. Int J Antimicrob Agents 55(3): 105924.

15. Rasmussen SA, Smulian JC, Lednicky JA, Wen TS, Jamieson DJ (2020) Coronavirus disease 2019 (COVID-19) and pregnancy: What obstetricians need to know. Am J Obstet and Gynecol 222(5): 415-426.

16. Yang X, Yu Y, Xu J, Shu H, Xia J (2020) Clinical course and outcomes of critically ill patients with SARS-CoV-2 pneumonia in Wuhan, China: a single-centered, retrospective, observational study. The Lancet Respir Med 8(5): 475-481.

17. Chen H, Guo J, Wang C, Luo F, Yu X (2020) Clinical characteristics and intrauterine vertical transmission potential of COVID-19 infection in nine pregnant women: A retrospective review of medical records. Lancet 395(10226): 809-815.

18. Ferrazzi E, Frigerio L, Savasi V, Vergani P, Prefumo F (2020) Vaginal delivery in SARS-CoV-2 infected pregnant women in Northern Italy: A retrospective analysis. BJOG 127(9): 1116-1121.

19. Zaigham M, Andersson O (2020) Maternal and perinatal outcomes with COVID-19: A systematic review of 108 pregnancies. Acta Obstet Gynecol Scand 99(7): 823-829.