

Case report

Termination of Pregnancy in a Twin Pregnant Patient with COVID-19

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Abstract

In this article, we present a pregnant case suspected of COVID-19 with underlying symptoms of respiratory distress; which was referred to Shohada-e-Tajrish Hospital. Due to the progressive decrease of O₂ saturation, the medical team decided to terminate the pregnancy to save the patient's life. Despite all these efforts including pharmaceutical agents, the patient passed away.

Keywords: Twin pregnancy, COVID-19, Coronavirus, Pregnancy Termination

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Introduction

Despite the dramatic and rapid increase in coronavirus infections (COVID 19) and cases leading to deaths, there are limited data about the clinical features of pregnant women with the disease (1). Early studies have claimed that the most common COVID-19 symptoms and signs in pregnant women include: fever at admission (68%), dry cough (34%), malaise (13%), and dyspnea (12%) (2, 3).

Nowadays, during the COVID-19 pandemic, maternal assessment and fetal safety are considered as a challenging dilemma; especially with the paucity of knowledge regarding pathology and management of COVID-19 affected pregnant women; with the uncertainty regarding the potential risk of vertical transmission (3).

Here we discuss a pregnant mother with a challenging management pathway; mandating more sophisticated knowledge to manage these patients.

Case Report

A 48-years-old pregnant woman (garavid₂, para₁) who became pregnant by the administration of microinjection reproduction techniques, with Gestational Age of 28 weeks and 4 days, complaining of fever, shivering, dry cough, and dyspnea, was admitted in the COVID-19 ward in Shohada-e-Tajrish Hospital.

During the primary visit and physical examination, the following findings were recorded: Blood Pressure: 110/70 mmHg, Heart Rate: 120/minute, Respiratory Rate: 26/minute, Oral Temperature: 38 °C, oxygen saturation by peripheral pulse oximetry (SpO₂) in room air: 92%. At the same time, arterial blood gas analysis results were as follows: pH: 7.35, PaCO₂: 48.5 torrs, PaO₂: 68.3 torrs, HCO₃: 26.2 mEq/L, O₂ Saturation: 94.2%). After a detailed assessment, CT-angiography imaging studies ruled out pulmonary emboli; while Chest CT lung



Figure 1. Chest- CT showed the areas of patchy consolidation in both lungs and grand glass infiltration, which were primarily suggestive of COVID-19 pneumonia.

fields showed the patchy areas of consolidation in both lungs accompanied by ground glass infiltrations; mainly suggestive of COVID-19 pneumonia (Figure 1).

Echocardiographic results showed that: both Left and Right ventricles had a normal size and good function, without significant valvular abnormality. Pulmonary artery pressure was in the normal range; with any sign of pulmonary emboli. With a positive Real-Time RT-PCR Diagnostic Panel for COVID-19, the intensivist started treatment with oral Oseltamivir, Ceftriaxone, Azithromycin, and supplemental O₂ therapy with a face mask. Two days later patient vital signs were as follows: Blood Pressure: 100/65mmHg, Pulse Rate: 125 beats per minute, Respiratory rate:30 per minute, Oral temperature: 38.3°C and SpO₂ with oxygen face mask:90%. Blood gas analysis revealed pH:7.39; partial pressure of arterial CO₂ (PaCO₂):51.1 torrs, pressure of arterial oxygen (PaO₂):59.3 torrs, arterial HCO₃:30.7 mEq/L). Immediate OBGYN consult led to commencement of intravenous betamethasone.

Forty-eight hours later, the patient's condition worsened and SpO₂ fell to 84% with a dramatic impairment in arterial blood gas parameters. So, the patient was immediately transferred to the operating room for emergency termination of pregnancy using a

Cesarean delivery.

As she entered the operating room, adequate peripheral intravenous lines were installed and the patient was monitored SpO₂, electrocardiography, and noninvasive blood pressure. (Blood Pressure: 110/75 mmHg, Pulse Rate:104/minute, Respiratory Rate: 42/minute, Oral Temperature:37.7°C, SpO₂:75%). The patient received spinal anesthesia and the first baby was born with an Apgar of 8 of 10 while the second baby had an Apgar 7 of 10; blood gas analysis assessments revealed that they were both acidotic with respiratory distress; so, both babies were intubated, transferred to NICU and died two days later. After surgery, the patient was transferred to ICU and received noninvasive using Bilevel Positive Airway Pressure (BIPAP).

Two days later, the patient's condition deteriorated and SpO₂ fell to 52%; with severe impairment in blood gas parameters; while SpO₂ was 60.4%; at this time, the patient was intubated and invasive mechanical ventilation was started.

On the 5th day of hospitalization, 20 mg/day intravenous immunoglobulin (IVIG) was started; added with a trial of plasmapheresis; however, none was effective and after a deteriorating trend, a series of cardiopulmonary resuscitations, the patient died on the 15th day of hospitalization.

Discussion

The following clinical presentations are often considered as deterioration in clinical COVID-19 (4-6):

- Respiratory rate more than >30 per minute
- Peripheral oxygen saturation $\leq 93\%$ in room air
- Partial arterial oxygen pressure to inspired oxygen fraction ($\text{PaO}_2/\text{FiO}_2$) less than 300
- Lung infiltrates more than 50% especially in imaging studies with CT scanning

Close cooperation between anesthesiologists, gynecologists, neonatologists, intensivists, infectious disease specialists, and other health care teams followed by standard evidence-based protocols are integral parts for the improved outcome of pregnant COVID-19 affected women (4). Other Clinical approaches like steroids for fetal lung maturity or magnesium for neuroprotection, and indomethacin for tocolysis should be discussed; both for maternal and fetal safety and the sake of interactions with COVID-19 drugs (3,4).

To reduce the risk of anesthesia and health care worker in contact with COVID-19, it should be Prevent of urgent cesarean section. But, controlled assessment of both maternal and fetal status is very important (5). Prolonged maternal hypoxemia may eventually cause fetal acidosis and should be a necessary urgent cesarean section (6).

Vital signs monitoring is the cornerstone of treatment. Supplemental oxygen is the most basic therapeutic modality especially if the patient experiences hypoxia, starting from SpO_2 levels below 93%. Non-invasive ventilation may be considered as an additional procedure though this modality should be managed with special caution regarding the potential risk of environmental viral shedding; however, invasive airway management, including endotracheal intubation and mechanical ventilation are the final step in ventilator assist approaches (7, 8).

Based on the scanty available evidence, COVID-19 affected women are recommended to receive spinal anesthesia for a cesarean section; the rationale is that spinal anesthesia potentially avoids respiratory symptoms exacerbations and decreases the risk of aerosol contamination in health care workers (9,

10). Finally, the role of delayed COVID-19 diagnosis and potential lack of sufficient clinical knowledge regarding COVID-19 in reaching a poor outcome should not be neglected.

Conclusion

To save pregnant mothers' lives, timely diagnosis of the disease, and having more evidence-based management protocols, added with efficient teamwork are mandatory.

Acknowledgment

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Conflicts of Interest

The authors declare that there are no conflicts of interest.

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