



# COVID-19, Mucus Plug, and Immediate Postpartum: A Concerning Triad

PUBLISHED ABSTRACT

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## ABSTRACT

**Introduction:** Infections with the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) can range from asymptomatic, to severe and critical COVID-19. Moreover, it can involve any organ system, thereby having various presentations. Little is known about the disease's pathogenesis and even less regarding how pregnancy changes the disease's course. We describe the first case of COVID-19 complicated by lung collapse in the immediate postpartum period.

**Case Presentation:** A 29-year-old female was admitted for induction of labor (IOL) due to preeclampsia with severe features. She had no significant medical history, except for tobacco smoking in the past. The patient disclosed recent contact with a family member that tested positive for SARS-CoV-2 but denied any respiratory symptoms. A nasopharyngeal swab was sent. The positive test result became available only when the patient was taken to the operating room to undergo a cesarean section for failed IOL. In the immediate postoperative period, she developed fever, tachypnea, tachycardia, and hypoxia. Physical exam showed decreased breath sounds. A chest X-Ray (CXR) was performed and revealed complete opacification of the left lung (**Figure 1**). Oxygen supplementation was delivered initially via bilevel positive airway pressure. However, due to persistent hypoxia, the patient was transferred to the Intensive Care Unit (ICU), was intubated and was placed on mechanical ventilation. Bronchoscopy with the removal of mucus plug from the left mainstem bronchus was performed. The respiratory parameters improved. Post-bronchoscopy CXR showed interval partial re-expansion of the left lung (**Figure 2**). The patient continued to improve on corticosteroids and antibiotics. Subsequently, patient was extubated and transferred to the medical floor on postoperative day three. Five days later, the patient was discharged home with appropriate outpatient follow ups.

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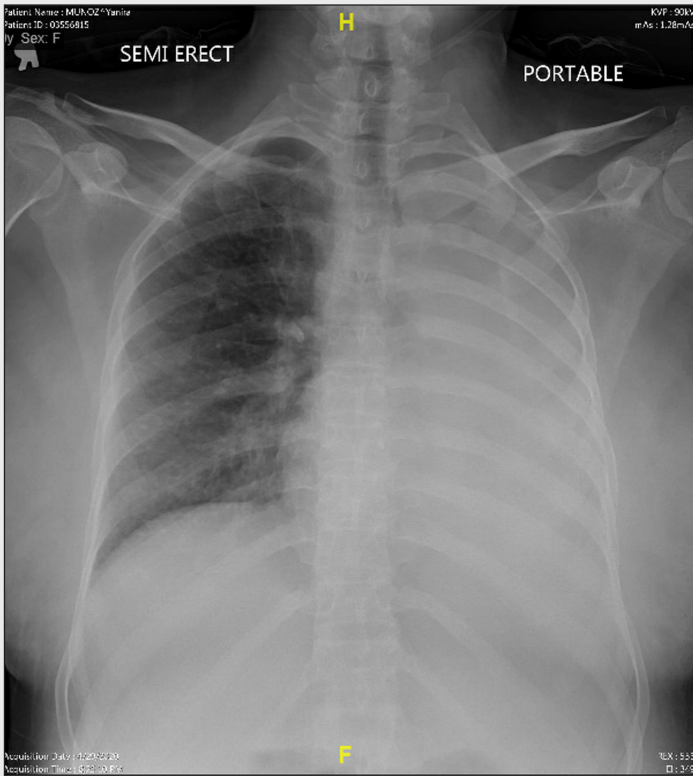
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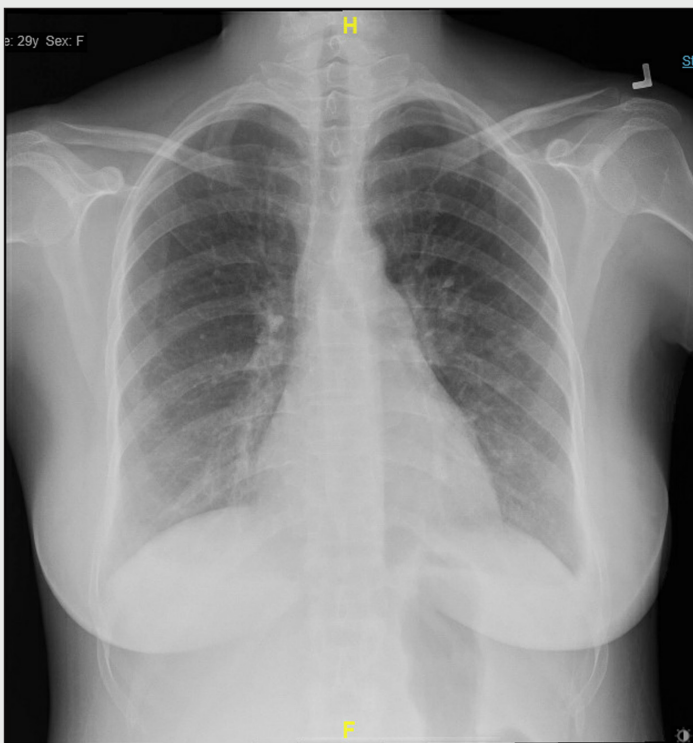
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**Figure 1** Opacification of the left lung.



**Figure 2** Post-bronchoscopy CXR.

**Discussion:** There is a lot yet to be known about the pathogenesis of hypoxic respiratory failure in critical COVID-19 patients. While older age, male sex, hypertension, diabetes, and obesity are associated with higher mortality, the pregnancy effect on the disease course is unclear [3]. One study reported a decreased risk of disease severity during pregnancy [4]. At the same time, several case reports described worsening of the disease in the postpartum period [1, 2]. Our case is consistent with such a disease course. Whether pregnancy protects against critical COVID-19, or there are other factors that lead to deterioration postpartum requires further research, so that appropriate actions are taken in consideration for management purposes.

**Conclusions:** Little is known regarding how pregnancy changes the course of COVID-19 infection. This clinical vignette describes the first case of COVID-19 complicated by lung collapse in the immediate postpartum period. The patient underwent bronchoscopy, and received steroids and antibiotics, with subsequent improvement in clinical status. Several case reports have described worsening of the disease in the postpartum period. Further research is needed to know what is the effect of pregnancy in the course of COVID-19 infection, so that appropriate management guidelines are developed in these patients.

## COMPETING INTEREST

The authors have no competing interests to declare.

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