

# A Case of Pneumo-Mediastinum in a Patient with Severe COVID-19 Infection on Non-Invasive Ventilatory Support

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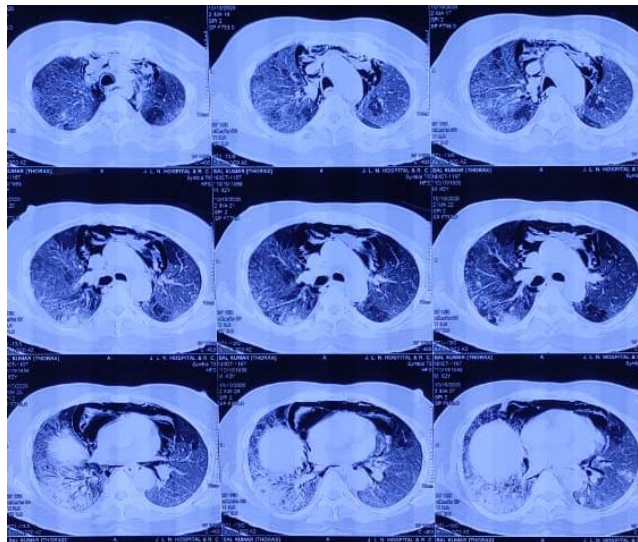
## 1. Introduction

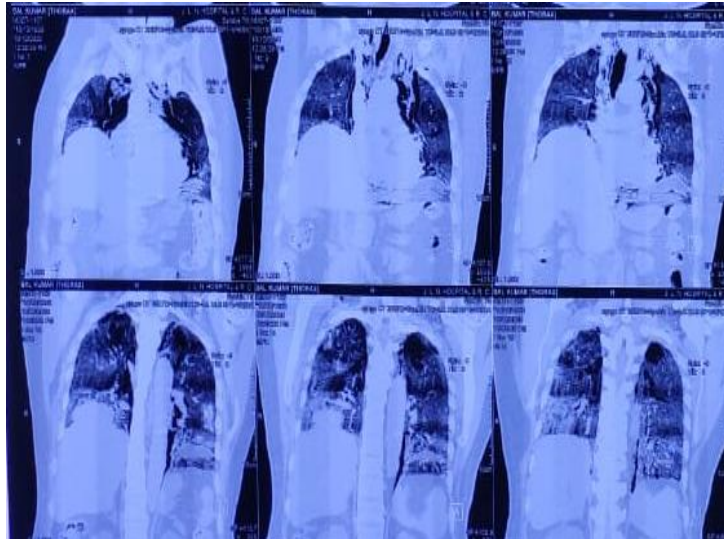
COVID-19 infection poses a challenging task of managing and improving the oxygen status in severely affected individuals. However, pneumo-mediastinum like rare complications should also be kept in mind while managing such critical cases, especially when they are not improving despite mechanical ventilatory support. Here we discuss about an occurrence of pneumo-mediastinum in a severe COVID-19 infected patient.

## 2. Case Presentation

A 62-year-old male was admitted with RT-PCR positive for COVID19. The patient had complaints of fever, cough and shortness of breath. On examination the patient was restless

with Spo2 of 78% at room air with respiratory rate of 30/min. The patient was given O2 support through Non-Rebreathable Mask with Spo2 of 90% with 15L O2/min. On day 3 following admission, the patient was complaining of breathing difficulty with falling Spo2 and was shifted to ICU and was put on Non-Invasive ventilatory support. On day 5, the patient developed distress with NIV support and a fall in Spo2 was noted. The patient also complained of chest pain and chest tightness. Urgent HRCT thorax showed pneumomediastinum, subcutaneous air without pneumothorax with a CT severity score of 22/25. Conservative treatment was given. Unfortunately, despite efforts the patient could not be revived and he died on day 6 of admission.





### 3. Discussion

As known, a spontaneous pneumomediastinum may be caused by a pressure gradient between the alveoli and pulmonary interstitium leading to alveolar rupture secondary to barotrauma associated with mechanical ventilation, due to the high PEEP required to maintain adequate oxygenation in these severely compromised patients. In cases of infection by SARS-CoV 2, pneumomediastinum may be related to damage and rupture of alveolar membrane caused by the virus. Tracheobronchial injury secondary to intubation can also be a cause. In order to try and minimize the risk of barotrauma, patients should be ventilated with the least damaging settings possible to achieve adequate oxygenation. Although pneumomediastinum is usually considered a self-limiting condition, with an unknown precise pathological mechanism, we wanted to describe this possible complication of Covid-19 pneumonia, that may be considered a potential indicator of worsening disease.

### 4. Conclusions

Pneumo-mediastinum is a rare complication in ventilated severe COVID-19 infection. To identify and manage this complication a good clinical and radiological evaluation is needed. Judicious use of pressure support in ventilation should be done irrespective of non-invasive or invasive ventilatory support. For improving oxygenation, other methods like prone ventilation, High-flow nasal canula and NRM ventilatory supports should also be sought after.

### References

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