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Case Reports

Spontaneous pneumomediastinum in a COVID-19 patient: A case report

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Abstract:-

Background: Pneumomediastinum is a rare complication of COVID-19 pneumonia, which may or may not be associated with invasive ventilator support. Therefore, the report and findings associated with its evolution can be of great contribution in the management of this unknown disease.

Pneumomediastinum is a rare complication of COVID-19 pneumonia, and the most likely etiopathogenesis is severe pulmonary involvement, which may or may not be associated with invasive ventilator support. Future studies with a greater number of cases should elucidate the relationship of pneumomediastinum to a probable prognostic factor. Our case was a young man with PCR positive test for Covoid 19 and dyspnea, that managed Covoid 19 and cure pneumomediastinum without pulmonary sequels. Pneumomediastinum is a rare complication of COVID-19 pneumonia, and the most likely etiopathogenesis is severe pulmonary involvement, which may or may not be associated with invasive ventilatory support. Future studies with a greater number of cases should elucidate the relationship of pneumomediastinum to a probable prognostic factor.

Keywords: Pneumomediastinum, Emphysema, SARS-COVID-19.

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Background:

Pneumomediastinum is a frequent sign of clinical concern with potentially threatening consequences(1). It can be classified as primary pneumomediastinum, which is also called spontaneous pneumomediastinum and is defined as the presence of air in the mediastinum without any defined cause(2).

Pneumomediastinum is a rare complication of COVID-19 pneumonia, and the most likely etiopathogenesis is severe pulmonary involvement, which may or may not be associated with invasive ventilator support. Future studies with a greater number of cases should elucidate the relationship of pneumomediastinum to a probable prognostic factor. secondary pneumomediastinum develops as a consequence of a distinct underlying pathology or thoracic injury, resulting in intrathoracic dissection of air through the mediastinal planes.(1). The lungs of patients with COVID-19 have significant interstitial involvement with edema, protein exudates, vascular congestion and inflammatory changes with low compliance and reduced elastics.(3). Therefore, when there is a pressure gradient between the alveoli and the pulmonary interstitium in the fibrotic and hypoelastic lung, alveolar rupture and the consequent leakage of air into the interstitium can occur. Due to the pressure gradient between the pulmonary periphery and the mediastinum, the air present in the pulmonary interstitium flows toward the pulmonary hilum and the mediastinum(4). Spontaneous pneumomediastinum has been reported in association with COVID-19. Pneumomediastinum could remain elusive until computed tomography is performed. Hence, we need to be vigilant even though it generally has a benign clinical course(5). This case presentation wants to show rare and unknown results of Covoid19 .

Case presentation:

A 26 years old man with sudden dyspnea since 6 days before that admitted 3 hours ago because of chest discomfort in surgery part.in lab datas troponin was nagative ,Leukocytosis was 12000 ,and other markers was in normal ranges. We did chest CT for him and saw this figure:

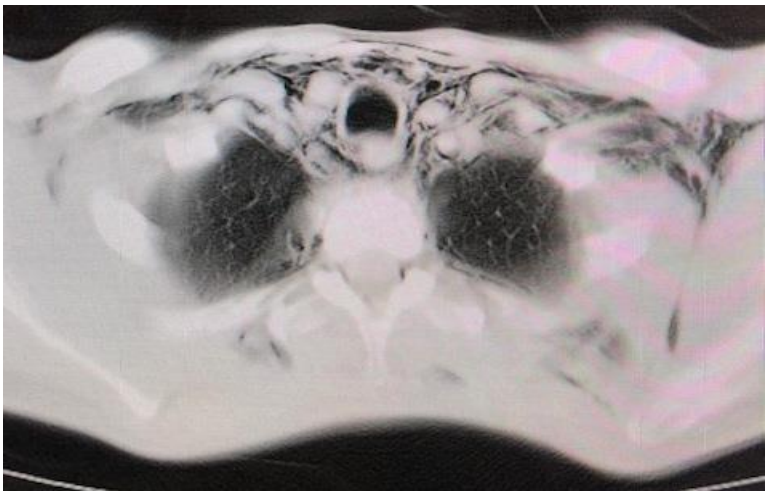
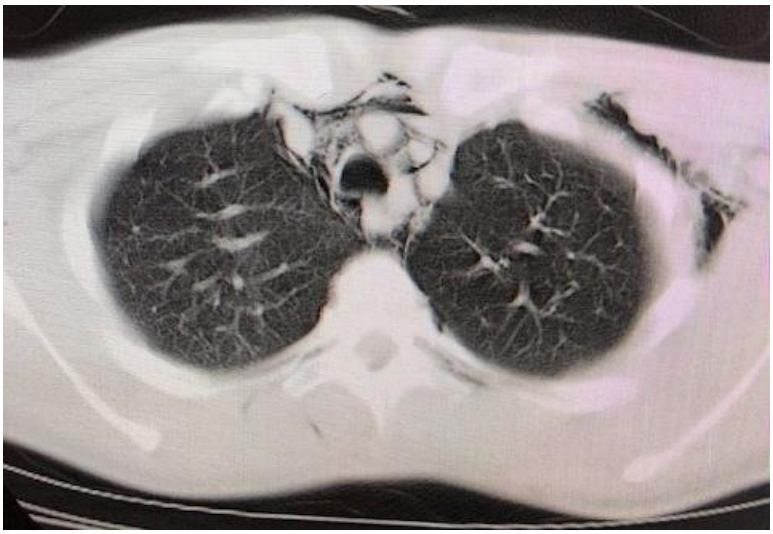


Figure 1: Emphysema and Pnumomediastinum



Our case had no evidence of trauma for Pnumothorax.
Figure2: Emphysema and Pnumomediastinum

Figure 3: Emphysema in neck
We did not found any evidence of iatrogenic cause.

Conclusion:

Due to the COVID-19 pandemic, there are currently reports of pneumomediastinum as a rare complication of COVID-19 pneumonia. Pneumomediastinum could result directly from the pathogenesis of SARS-CoV-2 (rupture of pulmonary bullae) or secondary to intensive care management due to airway trauma during tracheal intubation, barotraumas or repositioning maneuvers(6,7,8). we did not find iathrogenic cause for this problem and we found problem with CT. We hypothesized that reactive pleural thickening associated with COVID-19 prevents air from spreading to the pleural space; therefore, some cases do not show evidence of pneumothorax(6,9). asymptomatic, with no emphysema or pneumothorax, and 7 days later, this patient showed complete resolution of the pneumomediastinum(8). The author suggest that mediastinal emphysema results from a sudden increase in alveolar pressure, causing alveolar rupture and air leakage with interstitial emphysema. The patient recovered with oxygen therapy(7). Although the pneumomediastinum observed in our cases was apparently not related to a violation of the aerodigestive track, this complication was associated with a worse prognosis(6). Pneumomediastinum is a rare complication of COVID-19 pneumonia, and the most likely etiopathogenesis is severe pulmonary involvement, which may or may not be associated with invasive ventilatory support. Future studies with a greater number of cases should elucidate the relationship of pneumomediastinum to a probable prognostic factor(10).

Declarations:

Ethical Approval and Consent to participate:

The content of this manuscript are in accordance with the declaration of Helsinki for Ethics. No committee approval was required. Oral and written consent to participate was granted by the parents.

Consent for publication:

"Written informed consent was obtained from the patient's legal guardian for publication of this case report and any accompanying images. A copy of the written consent is available for review by the Editor-in-Chief of this journal."

- Availability of supporting data

It is available.

- Competing interests:

The author declares that they have no competing financial interests and nothing to disclose.

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- Authors' contributions:

Ahmad Reza Shahraki is the surgeon of patient and writes this paper. Reza Abaee collected Data's and Elham Shahraki reviews paper.

The author declares that they have no competing financial interests and nothing to disclose.

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