

CLINICAL PRACTICE
Clinical Images



Spontaneous Pneumomediastinum in a Patient with COVID-19 Pneumonia

Naseem Alavian, MD MPH , John R Stephens, MD, and Darren A DeWalt, MD, MPH

Department of Medicine, School of Medicine, University of North Carolina at Chapel Hill, Chapel Hill, NC, USA.

J Gen Intern Med 36(9):2845–6

DOI: 10.1007/s11606-021-06813-6

© Society of General Internal Medicine 2021

A 61-year-old woman was hospitalized with severe COVID-19 pneumonia. Initial chest X-ray (CXR) showed diffuse opacities in bilateral lungs. Her hospital course was significant for intermittent coughing and need for high flow oxygen by nasal canula without need for positive pressure ventilation. Six days into hospitalization, she developed worsening hypoxia and new throat discomfort. Physical exam included newly palpable subcutaneous emphysema in her neck. CXR demonstrated new moderate volume pneumomediastinum (Fig. 1). CT angiography aimed at evaluating worsened hypoxia showed extensive pneumomediastinum extending into soft tissues of the lateral neck and mediastinal spaces of the heart (Fig. 2).

Pneumomediastinum is often associated with positive airway pressure. Other risk factors for spontaneous

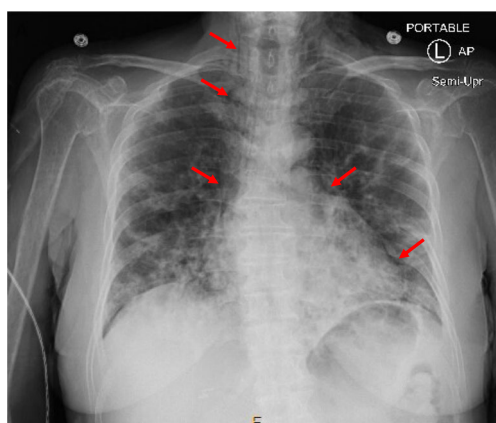


Fig. 1 CXR with bilateral lung opacities and arrows indicating moderate volume pneumomediastinum.



Fig. 2 CT angiography showing extensive pneumomediastinum extending into the soft tissues of the lateral neck and surrounding the mediastinal spaces of the heart.

pneumomediastinum include smoking and pre-existing lung parenchymal or airway disease.¹ COVID-19 pneumonia managed without invasive or positive pressure ventilation is a newly reported risk factor for spontaneous pneumomediastinum.² Potential pathophysiology includes diffuse alveolar injury that results in alveolar rupture and interstitial emphysema, which may dissect along the bronchovascular sheaths into the mediastinum in patients with COVID-19 pneumonia.^{3,4} Providers caring for patients with COVID-19 pneumonia should be aware of this potential complication. This patient's symptoms resolved with supportive care, serial CXRs, and avoidance of unnecessary positive pressure ventilation.

Corresponding Author: Naseem Alavian, MD MPH; Department of Medicine, School of Medicine, University of North Carolina at Chapel Hill, Chapel Hill, NC, USA (e-mail: alavian@med.unc.edu).

Received January 30, 2021

Accepted April 6, 2021

Published online May 4, 2021

REFERENCES

1. **Caceres M, Ali SZ, Braud R, Weiman D, Garrett HE.** Spontaneous pneumomediastinum: a comparative study and review of the literature. *Ann Thoracic Surg.* 2008;86:962-6.
2. **Elhakim TS, Abdul HS, Pelaez Romero C, Rodriguez-Fuentes Y.** Spontaneous pneumomediastinum, pneumothorax and subcutaneous emphysema in COVID-19 pneumonia: a rare case and literature review. *BMJ Case Rep.* 2020;13(12):e239489.
3. **Chu CM, Leung YY, Hui JYH, et al.** Spontaneous pneumomediastinum in patients with severe acute respiratory syndrome. *Eur Respir J.* 2004;23:802-4.
4. **Goldman N, Ketheeswaran B, Wilson H.** COVID-19-associated pneumomediastinum. *Clin Med (London).* 2020;20(4):e91-e92.

Publisher's Note Springer Nature remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.