

IMAGES IN EMERGENCY MEDICINE

Infectious Disease

Young male with coughing and chest pain

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1 | PATIENT PRESENTATION

A 20-year-old healthy male presented to the emergency department (ED) with a 1-day history of pleuritic and positional chest pain after a single day of excessive coughing and vomiting. On arrival, his heart rate was 120 bpm with an oxygen saturation of 97%. He had clear lungs by auscultation, midline trachea, with bilateral upper chest wall crepitus. Chest x-ray revealed subcutaneous air, pneumomediastinum, and bilateral pneumothoraces. This prompted chest computed tomography (CT) scan (Figure 1) for consideration of Boerhaave's syndrome. He was given piperacillin/tazobactam and fluconazole, along with supplemental oxygen. CT scans revealed extensive pneumomediastinum dissecting into the deep tissues of the neck, chest wall, left upper extremity, pericardium, and into the neural foramen and along the epidural space within the spinal canal, with small bilateral pneumothoraces. He was shortly thereafter diagnosed with concurrent polymerase chain reaction (PCR)-confirmed SARS-CoV-2. He was treated conservatively with admission to the thoracic surgery service, without the requirement of chest tube thoracostomies or subsequent antibiotics and discharged 2 days later.

2 | DISCUSSION

Pneumothorax and pneumomediastinum are complications of barotrauma known to occur with Covid-19, but, to date, no reports have demonstrated such extensive disease presenting emergently with such degree of pneumorrhachis and subcutaneous emphysema to an ED. Existing reports demonstrate similar disease late in the disease process or after significant mechanical ventilation in SARS-CoV-2.¹ Similar rare presentations have been seen due to barotrauma (coughing) in the setting of other viral infections, such as H1N1, as well as in the setting

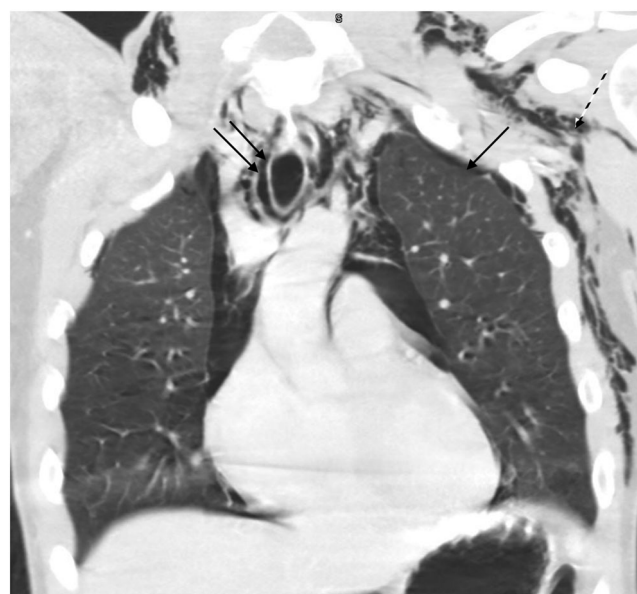


FIGURE 1 Chest-CT scan of a 20-year-old male with bilateral pneumothoraces (solid black arrow), pneumomediastinum (double black arrow), pneumopericardium (not shown), pneumorrhachis (not shown), and extensive subcutaneous emphysema (dotted arrow)

of esophageal rupture from aggressive vomiting.^{2,3} Chest radiography in patients with Covid-19, when done, usually demonstrates bilateral, patchy airspace disease; however, patients can present with significant pathology even in light of normal oxygen saturations.⁴

REFERENCES

1. Muhammad AI, Boynton EJ, Naureen S. COVID-19 with bilateral pneumothoraces—case report. *Respir Med Case Rep.* 2020;31:101254.

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2. Chekkoth SM, Supreeth RN, Valsala N, Kumar P, Raja RS. Spontaneous pneumomediastinum in H1N1 infection: uncommon complication of a common infection. *J R Coll Physicians Edinb.* 2019;49:298-300.
3. Granel-Villach L, Fortea-Sanchis C, Martinez-Ramos D, et al. Boerhaave's syndrome: a review of our experience over the last 16 years. *Rev Gastroenterol Mex.* 2014;79:67-70.
4. Hosseiny M, Kooraki S, Gholamrezanezhad A, Reddy S, Myers L. Radiology perspective of Coronavirus Disease 2019 (COVID-19): lessons

from severe acute respiratory syndrome and middle east respiratory syndrome. *AJR Am J Roentgenol.* 2020;214:1078-1082.

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