

# Acute Onset Dyspnea with Productive Cough and Lung Consolidation? That's pneumonia! But is it?

## Introduction

- A well-timed diagnosis and management of pulmonary embolism (PE) are necessary to decrease mortality.<sup>1</sup>
- Annually, 50,000-200,00 deaths occur due to PE and post-mortem studies have shown that up to 70% cases of PE have been misdiagnosed.<sup>1</sup>
- There are many overlapping features between PE and pneumonia, namely elevated D-dimer, lobar consolidation, leucocytosis and fever.<sup>2</sup>
- The significant amount of misdiagnosis highlights the importance of reviewing the different possible presentations of this fatal medical condition.<sup>1</sup>

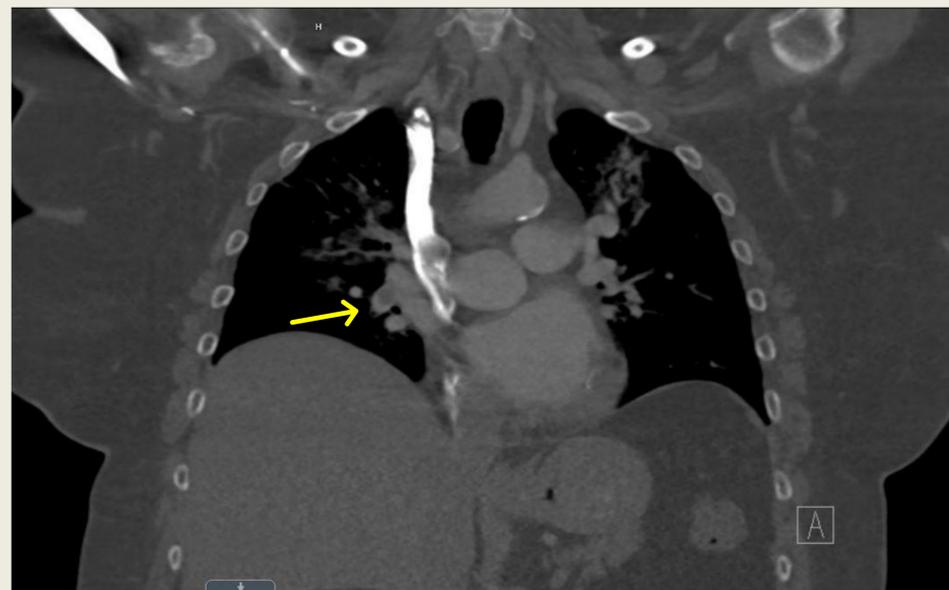
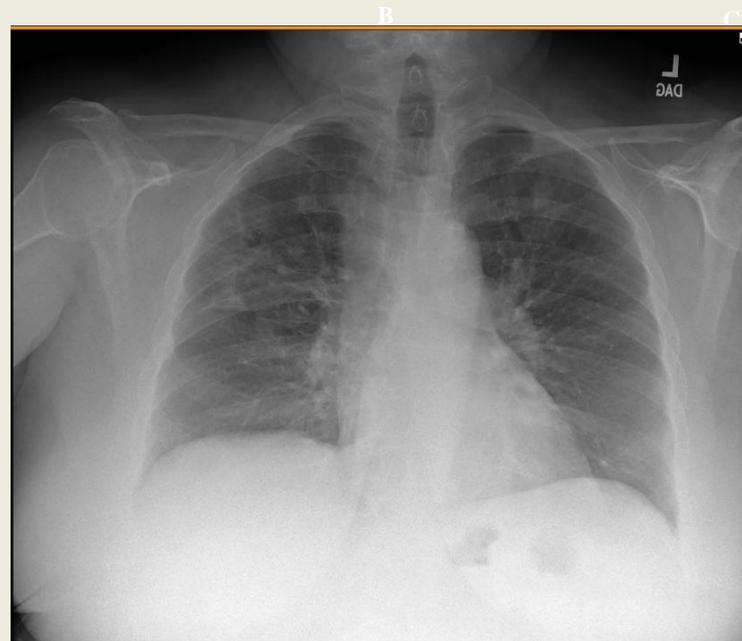
## Case Presentation

- A 64-year-old female with diabetes, hypertension, hyperlipidemia, and recent COVID-19 infection (one month prior) presented with exertional shortness of breath and productive cough for 4 days.
- The patient's vital signs at rest were normal. However, her oxygen saturation decreased to the 70's with ambulation. She also exhibited 1+ bilateral pitting edema of lower extremities up to the mid-shin. Lungs were clear to auscultation bilaterally and the cardiovascular exam was otherwise unremarkable.
- Laboratory evaluation revealed no leukocytosis, normal procalcitonin, a mildly elevated BNP, and a high sensitivity troponin was found to be within institutional limits.
- 12-lead ECG showed normal sinus rhythm.
- Chest X-ray was obtained and revealed multiple patchy consolidations suggestive of multifocal pneumonia.
- Patient was placed on ceftriaxone and azithromycin for treatment of pneumonia and, despite this maneuver, remained dyspneic on exertion.
- A D-dimer was performed as part of an assessment for alternative diagnoses for the patient's persistent symptoms. This was elevated prompting CT angiography of the chest to assess for pulmonary embolism. This revealed bilateral segmental pulmonary embolism in addition to ground glass and consolidative opacities likely representative of inflammatory etiology.

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## Images



## Decision-Making

- Evidence of right heart strain was noted on the CT angiogram but was ruled out by follow-up echocardiogram.
- A diagnosis of provoked, low-risk pulmonary embolism in setting of recent COVID-19 infection was made.
- IV heparin was initiated, and the patient was subsequently transitioned to oral anticoagulation on discharge.

## Conclusion

- Acute onset shortness of breath in a patient with multiple patchy infiltrates on chest X-ray is typically suggestive of pneumonia, however, due consideration should be given to other potential causes of the presentation.
- Consolidations on chest X-ray may be the stigmata of recent infection, including COVID-19.
- Moreover, COVID-19 infection has been recognized as an important cause of hypercoagulability leading to vascular thrombi.
- Pulmonary embolism should be considered in the differential diagnosis in a patient with a recently resolved COVID-19 infection presenting with acute onset shortness of breath even in absence of other known traditional risk factors.

## References

- 1 <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4614616/>
- 2 [https://www.ejinme.com/article/S0953-6205\(12\)00200-2/fulltext](https://www.ejinme.com/article/S0953-6205(12)00200-2/fulltext)