The masquerading pulmonary embolism: why a high index of suspicion remains even today

Pulmonary embolism (PE) remains a persistent entity of morbidity and mortality. Despite advances in treatment, diagnosis, and education, pulmonary embolisms can remain a challenge to diagnose. The Centers for Disease Control and Prevention reported that an estimated 300,000 to 600,000 people are affected each year in the United States by deep vein thrombosis (DVT)/PE, with 60,000 to 100,000 dying from DVT/PE (1, 2). Sudden death is the first symptom in about one-quarter of those who sustain a PE, and another 10% to 30% will die within 30 days of diagnosis (2). As such, early diagnosis and intervention is crucial. However, as reported by Dr. Ghatak et al (3), the presentation is not always straightforward, and there can be challenges in the diagnosis.

The initial features of cardiac arrest and the elevated 12-lead electrocardiographic findings were suggestive of a primary cardiac etiology in the patient's presentation, which led to evaluation by cardiac catheterization. As his primary insult was a PE, his coronary arteries did not yield an answer, and further evaluation and diagnostic studies not typical of a PE evaluation were promoted. Unfortunately for the patient, the finding of PE was corroborated in a postmortem evaluation. This case serves as a reminder that disease processes even as common as PE may still have atypical presentations.

Despite multiple tools for assessing the probability of patients having a PE, such as the Wells Score for PE, PREP Score for PE, and Geneva Prognostic Score for PE, atypical presentations may hinder the clinician's ability to proceed down the PE diagnostic pathway. Beyond tachypnea and dyspnea, there have been historical atypical presentations of PE such as hemoptysis, syncope, wheezing, and even abdominal pain (4). Relying on imperfect diagnostic studies to diagnose PE can further add to a clinician's challenge. The patient in this case was too unstable for additional diagnostic evaluation, such as a computed tomographic angiogram. However, such imaging would not have guaranteed a diagnosis. Presently, hospitals rely on chest computed tomography for a diagnosis of PE, but there are estimates that 1 in 6 cases will be missed with this diagnostic modality (5). This particular method can have further reduced reliability, with discrepancies of up to 11% in initial interpretation (6).

This case illustrates the potential for misdiagnosis and mortality related to PE. In a study by Stein et al evaluating patients who died from PE, 70% (14 out of 20) were not suspected of having a PE (7). It is clear that challenges remain in diagnosing a prevalent entity such as PE which requires treatment to reduce the significant associated morbidity and mortality. Atypical presentations and imperfect diagnostic evaluations continue to produce missed diagnosis. The case presented serves as a great reminder that the index of suspicion should remain high and that nonconventional evaluations may still lead to the diagnosis.

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