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PFIZER COVID-19 VACCINE CAUSES SHORTNESS OF BREATH IN A 24-YEAR-OLD PATIENT: A CASE REPORT

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INTRODUCTION: The year of 2020 will be a year never forgotten when the COVID-19 pandemic began. The healthcare system is going into a crisis facing a disease that is unknown and overwhelming. Companies were frantic to find a solution to help prevent so many unnecessary deaths. Pfizer mRNA COVID-19 vaccine was granted emergency use by the FDA after proving efficacy in early trials. Many side effects were unknown and discovered as time went on. Unprovoked isolated pulmonary embolisms are rare.

CASE PRESENTATION: A 24 year old male with no significant past medical history presented to the emergency department due to shortness of breath, hemoptysis and chest pain. He denied any family history or personal history of clotting disorders. He received the mRNA COVID-19 Pfizer vaccine 5 days prior to symptom onset. He describes it as constant sharp pain with varying intensity that he rates a 6/10 and can reach a 10/10 pain exacerbated with lying flat and deep breathing. He also states he has been coughing up a teaspoon amount of blood with this chest pain. Physical examination revealed reduced breath sounds in the left lower lobe. Patient was hemodynamically stable. Labs were stable and hemoglobin was stable throughout the hospital course. Fibrinogen was elevated and hypercoagulable work-up was negative. CTA of chest was performed and revealed left-sided pulmonary emboli involving the left lower lobe with pulmonary infarction. Therefore, he was managed by Eliquis.

DISCUSSION: Pfizer released a safety and efficacy report of the BNT162b2 mRNA Covid-19 Vaccine. Many of the common side effects reported were pain at the injection site, fatigue, headache, and fever [1]. Adverse events that were reported were shoulder injury, right axillary lymphadenopathy, paroxysmal ventricular arrhythmia, and right leg paresthesia [1]. Isolated PE in a young healthy patient was never reported as an adverse event from the Pfizer safety and efficacy report.

Severe acute respiratory syndrome-coronavirus-2 has been proven to increase the risk of venous thromboembolism because it is a prothrombotic virus [2]. Vaccination reports of pulmonary embolism are increasing, however, isolated PE without a DVT is still very underreported and rare. The literature states that a lot of patients that are having PE after mRNA vaccine also have associated thrombocytopenia, however, this is not what this patient demonstrates [3]. A total of 43, 548 participants were observed for the safety and efficacy report of the Pfizer COVID-19 report and not a single patient demonstrated an isolated pulmonary embolism event [1].

CONCLUSIONS: This case is a demonstration of a rare occurrence of isolated PE with no evidence of DVT in such close proximity to receiving the mRNA COVID-19 Pfizer vaccination. There are few reports of pulmonary embolism in healthy patients with no history of clotting disorders and further data are needed to support this association.

Reference #1: Polack FP, Thomas SJ, Kitchin N, et al. Safety and Efficacy of the BNT162b2 mRNA Covid-19 Vaccine. N Engl J Med. 2020;383(27):2603-2615. doi:10.1056/NEJMoa2034577

Reference #2: Hesam-Shariati S, Fatehi P, Abouzaripour M, Fathi F, Hesam-Shariati N, Hesam Shariati MB. Increased pulmonary embolism in patients with COVID-19: a case series and literature review. Trop Dis Travel Med Vaccines. 2021;7(1):16. Published 2021 Jun 12. doi:10.1186/s40794-021-00145-3

Reference #3: Muster V, Gary T, Raggam RB, Wölfler A, Brodmann M. Pulmonary embolism and thrombocytopenia following ChAdOx1 vaccination. Lancet. 2021;397(10287):1842. doi:10.1016/S0140-6736(21)00871-0

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