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Diffuse Lung Disease

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ELECTRONIC VAPE-ASSOCIATED LUNG INJURY: A UNIQUE PRESENTATION

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INTRODUCTION: Recently, the CDC has started to recognize the emerging problem of electronic vaping associated lung injury (EVALI) with the first case described in August 2019. EVALI has been difficult to recognize due to its variable presentation with most cases reporting gradual respiratory, constitutional, and gastrointestinal symptoms.(1-3) Much remains unknown regarding EVALI including the exact mechanism of action. The latest literature points towards vitamin E acetate as the culprit. Due to the variable nature and presentation, the CDC has published criteria for diagnosing “confirmed cases” and “probable cases” of EVALI.(2-4) To provide further data to better characterize EVALI, we present a case of probable EVALI in a young patient who vaped THC-containing products and exhibited an associated transaminitis and markedly elevated inflammatory markers.

CASE PRESENTATION: 25-year-old male with no prior history presented with 9 days of persistent fever and dry cough. He initially presented to an outside ED where a CT abdomen and pelvis showed bibasilar lung infiltrates and hepatomegaly. He was discharged from the outside ED with azithromycin but remained symptomatic and subsequently presented to our ED for further evaluation. He was tachycardic (100-120 BPM), tachypneic to 20-30, and initially afebrile but eventually had a Tmax of 102.9F. A non-con CT Chest showed multifocal patchy GGOs. Labs showed CRP 35, ESR > 130, and WBC 12,000, AST 62, and ALT 79. Procalcitonin was equivocal at 0.46. RVP was positive for rhino/enterovirus (case is pre-COVID era). Blood cultures had no growth. S. pneumo and legionella antigens were negative and his antibiotics were switched for still presumed CAP. He continued to fever (Tmax of 102F) with worsened hypoxia (requiring supplemental O2). By day 3, his transaminitis worsened to AST 97 and ALT 152. A CT A/P (to identify any other source of infection) and showed no intrabdominal pathology but demonstrated interval worsened bibasilar ground-glass opacities. Upon further investigation, he reported using an illicitly obtained THC-oil vape pen near symptom onset. He was diagnosed with probable EVALI by CDC guidelines and was started on methylprednisolone 250mg IV q6h with rapid symptom resolution.

DISCUSSION: This THC associated EVALI case illustrates the variable presentation of EVALI. EVALI can mimic pneumonias, particularly in patients with concurrent respiratory viruses (this case is pre COVID-19). Based on CDC criteria, our patient is a probable case (confirmed THC vape use, worsening GGOs on CT, and RVP+ for rhino/enterovirus) Our patient exhibited lab abnormalities including a transaminitis, ESR >130, CRP 35, and intermediate procalcitonin, demonstrating the variable nature of the disease.

CONCLUSIONS: We report a case of THC associated EVALI to illustrate its variable presentation and the need for clinical awareness, particularly now with COVID-19.

Reference #1: Perrine CG, Pickens CM, Boehmer TK et al. Characteristics of a multistate outbreak of lung injury associated with e-cigarette use, or vaping—United States, 2019. *Morbidity and Mortality Weekly Report* 2019;68:860.

Reference #2: Siegel DA, Jatlaoui TC, Koumans EH et al. Update: interim guidance for health care providers evaluating and caring for patients with suspected e-cigarette, or vaping, product use associated lung injury—United States, October 2019. *Morbidity and Mortality Weekly Report* 2019;68:919.

Reference #3: Blount BC, Karwowski MP, Shields PG et al. Vitamin E Acetate in Bronchoalveolar-Lavage Fluid Associated with EVALI. *New England Journal of Medicine* 2019;382:697-705.

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