

Crazy Vaping and Crazy-Paving: A Case of Vaping-Associated Organizing Pneumonia with Chest CT Showing Crazy-Paving Pattern

Sherif Roman MD, Ashesha Mechineni MD
St. Joseph's University Medical Center, Paterson, New Jersey

INTRODUCTION

E-cigarettes are commonly used tobacco products, particularly among young smokers. They are marketed as safer alternatives to traditional cigarettes; however, several studies reported various lung disorders associated with their use. Here, we report a case of bronchiolitis obliterans organizing pneumonia (BOOP) in a patient with a history of vaping.

CASE PRESENTATION

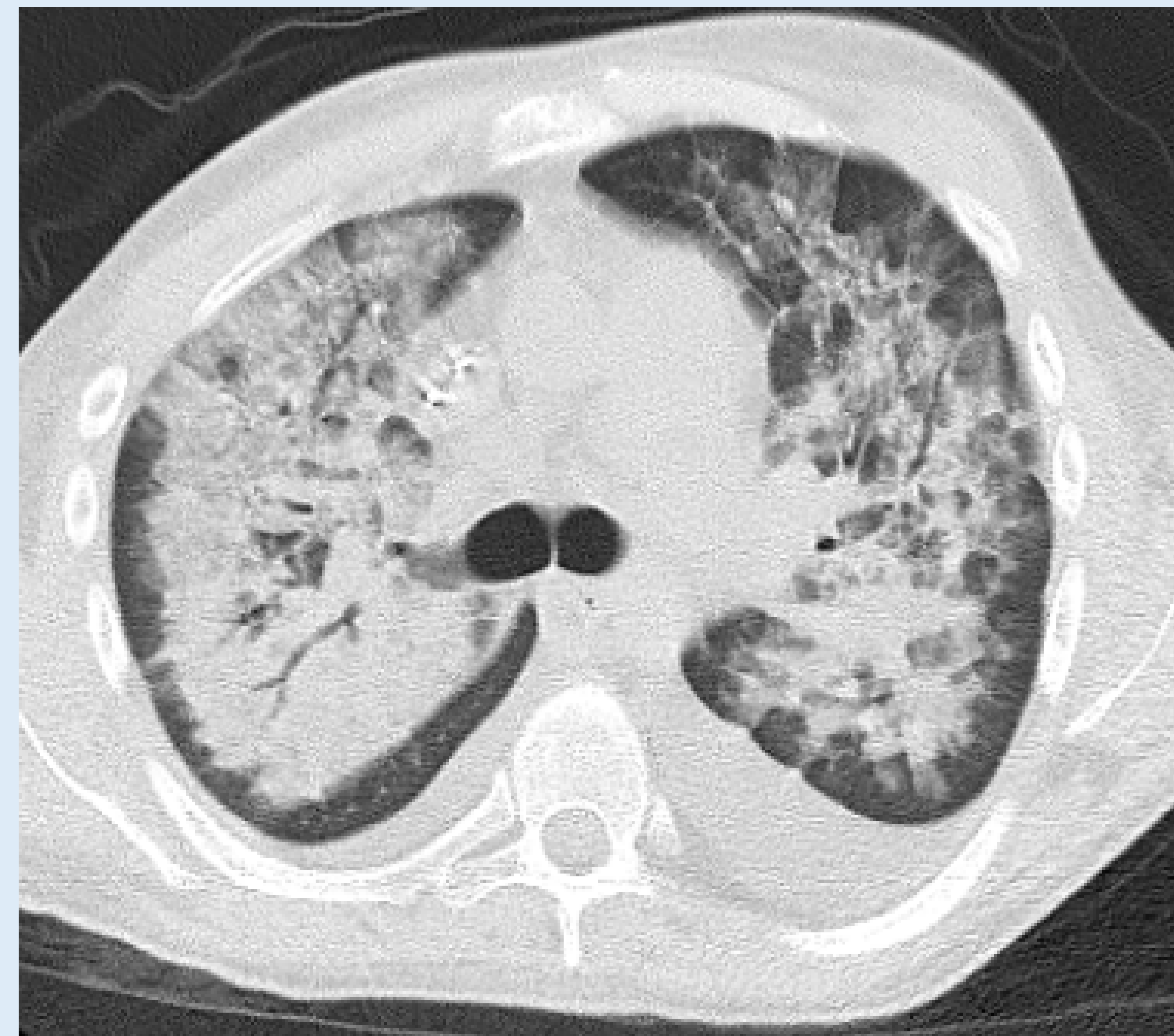
A 31-year-old male with a past medical history of paroxysmal atrial fibrillation, hypertrophic obstructive cardiomyopathy presented with fevers, cough, and shortness of breath with chest tightness for 3 days. The patient endorsed that he quit smoking cigarettes, but he reported using a vaping device to smoke cannabis oils. Moreover, he was recently admitted to the hospital with a similar presentation for vaping associated lung injury requiring intubation.

On arrival, he was tachypneic and hypoxic at 85% on room air but he was not febrile or tachycardic. The patient was placed on BIPAP with improved oxygenation, and laboratory analysis revealed a leukocytosis of 17,500, and work up for infection was negative.

A plain chest radiograph demonstrated bilateral generalized infiltrates, and his chest computerized tomogram CT revealed extensive bilateral alveolar infiltrates with peripheral sparing and septal thickening with a paving pattern. (figure)

Given the history of recurrent admissions for pneumonia and a long history of smoking and vaping, the patient underwent lung biopsy, which showed histologic findings consistent with BOOP.

The patient's symptoms significantly improved with steroid treatment. He was discharged home 2 weeks after admission and recommended to quit using vaping products.



CT chest without contrast showing extensive bilateral alveolar infiltrates, greater on the right side with peripheral sparing showing crazy-paving pattern.

DISCUSSION

E-cigarette/Vaping-associated lung injury (EVALI) is a relatively new term introduced by the CDC in 2019 to describe the pulmonary illness related to vaping. Our clinical case presentation meets the criteria of diagnosis of EVALI since the patient reported vaping in the 90 days before the onset of his symptoms, had pulmonary changes on imaging consistent with the disease, and less likelihood of other etiologies at this given point.

Chest CT of the patient showed a crazy-paving pattern, which is a non-specific finding that can be seen in many conditions, including but not limited to organizing pneumonia; however, his lung biopsy's histologic findings revealed BOOP, suggesting a potential relationship between vaping and organizing pneumonia development. Further studies are still needed to recognize the process of the disease.

CONCLUSION

In light of the significant prevalence of e-cigarettes use and EVALI cases, Physicians should be familiar with the diagnosis of this disease and consider BOOP in their differential diagnosis in patients presenting with respiratory symptoms and a history of e-cigarettes use. Additionally, it is essential to raise public awareness of the health risks associated with vaping.

REFERENCES

- 1-Layden JE, Ghinai I, Pray I, Kimball A, Layer M, et al. (2019) Pulmonary illness related to e-cigarette use in illinois and wisconsin-preliminary report. N Engl J Med.
- 2-Schier JG, Meiman JG, Layden J, Mikosz CA, Van Frank B, et al. (2019) Severe pulmonary disease associated with electronic-cigarette-product use-interim guidance. MMWR Morb Mortal Wkly Rep 68: 787-790.

