

# A HAZARDOUS CONCOCTION

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## INTRODUCTION

- Vaping is characterized by heating substances to generate an aerosolized product that can be inhaled
- These substances typically consist of a liquid or wax which contain nicotine or cannabinoids
- Individuals who participate in vaping are at increased risk for a life-threatening condition known as E-cigarette or vaping product use associated lung injury (EVALI)

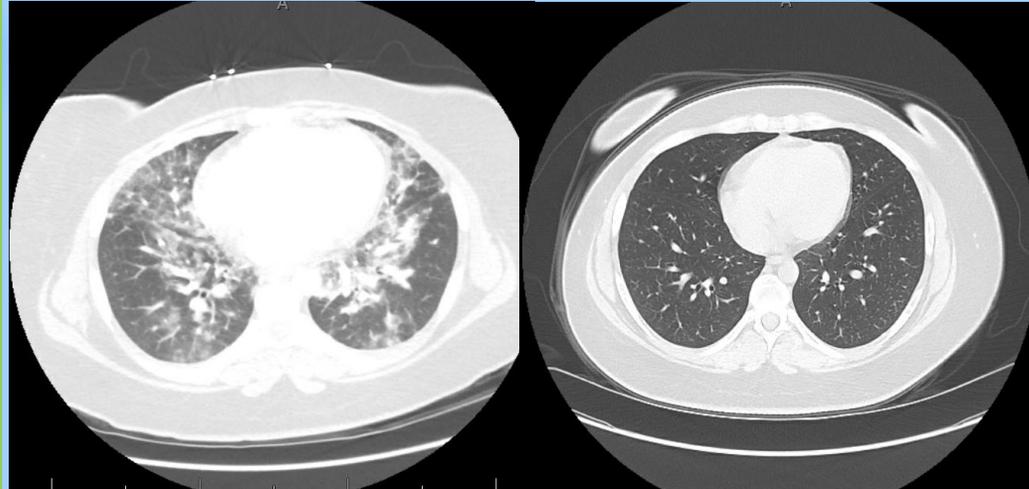
## CASE DESCRIPTION

### History and Physical Exam

- A twenty-four-year old female with a history of hypothyroidism presented with fever, dyspnea, nausea, and vomiting for the past five days
- Physical exam was remarkable for tachycardia, tachypnea, hypoxia, and epigastric tenderness

### Labs and Imaging

- Labs revealed a leukocytosis, thrombocytosis, and hypokalemia
- Infectious workup was unremarkable
- Urine drug screen was positive for cannabinoids
- Computed tomography (CT) of the chest revealed extensive interstitial and airspace opacities



### Progression

- Upon further questioning, it was determined that she had been using a homemade vaping product consisting of solutions which she had purchased online that she was mixing with tetrahydrocannabinol wax
- During her admission, she continued to be hypoxic despite being placed on supplemental oxygen
- She was started on solumedrol without any improvement. Due to worsening hypoxia and respiratory distress, she subsequently required intubation
- Despite maximum oxygenation on the ventilator, she continued to have refractory hypoxia and was cannulated for veno-venous extracorporeal membrane oxygenation

### Outcome

- After one week, she was able to be decannulated and then subsequently extubated. Repeat CT Chest revealed resolution of her previous airspace disease.

## DISCUSSION

- Vaping has increased significantly in recent years among individuals aged eighteen to twenty-four years old
- Approximately eighty percent of EVALI cases occur in individuals under the age of thirty-five.
- Similarly to our patient, the majority of these cases were associated with the use of tetrahydrocannabinol
- EVALI typically presents with dyspnea, cough, and chest pain however our patient's initial presenting symptoms also included nausea and vomiting
- One of the greatest concerns of individuals creating their own homemade material is the possibility of combining products which could potentially form a more toxic substance leading to significant lung injury
- Overall, it is crucial to counsel individuals on the dangers of EVALI especially for those who are making their own vaping products
- As you can see, it is essential to obtain a thorough social history and to have EVALI on your differential diagnosis when encountering a younger individual with acute onset of refractory hypoxia in the setting of acute lung injury.