What the Bleb? A Case of Hemopneumothorax Secondary to Marijuana Use Disorder

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Introduction

The use of marijuana in the United States has become more prevalent as legalization is increasing.

Several case reports have linked chronic marijuana smoking with the development of blebs and bullous lung disease as well as non-traumatic pneumothorax and pneumomediastinum formation.

To our knowledge, this is the first reported case of a spontaneous hemopneumothorax with active extravasation in a patient with marijuana use without tobacco use.

Case Description

30-year-old male with no known past medical history presented to the emergency department (ED) complaining of constant left sided chest pain and cough that began earlier that day and was exacerbated by deep inspiration. The patient denied any trauma. The patient also denied any prior or current history of cigarette use, but admitted to smoking marijuana daily.

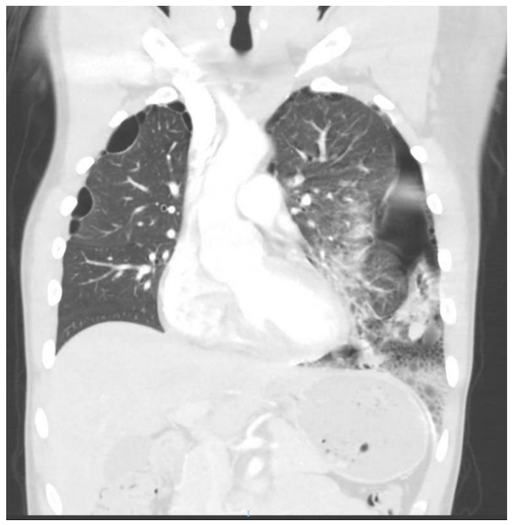
While the rest of the patient's vitals were within normal limits, his heart rate remained between 100-110 beats/min throughout his stay in the ED.

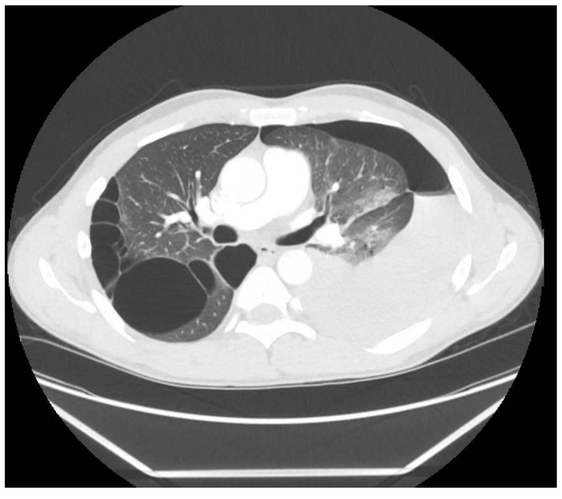
The patient's chest x-ray revealed a left-sided effusion and cystic bullous changes of the right apex. The radiologist noted this to be an atypical for the patient's age. A subsequent CT chest with contrast showed a large left hemopneumothorax with an area of active extravasation in the superior aspect of the pleural effusion consistent with active bleeding.

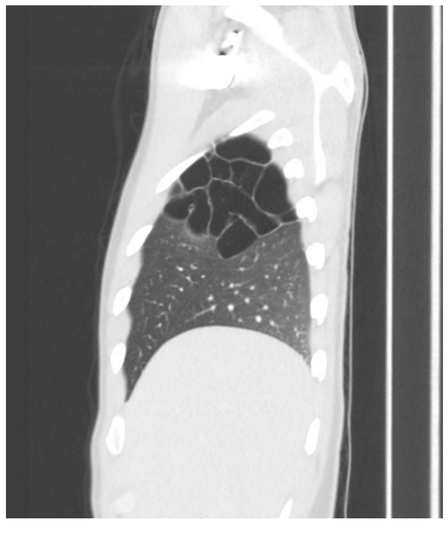
The patient was seen by cardiothoracic surgery who ultimately took the patient to the operating room. The patient underwent a left-sided thoracotomy with ligation of brisk mediastinal arterial bleeding, segment resection of the left upper lobe apex, which contained large bullae, as well as bleb wedge resection of the left lower lobe

Images

CT Chest: Large left hemopneumothorax. Area of active extravasation of contrast material in the super aspect of the pleural effusion consistent with active bleeding. Bilateral bullous changes. Atelectasis or infiltrate in the left lower lobe.







Discussion

This patient developed an atraumatic hemopneumothorax in the setting of a bleb rupture. Once the pleural bleb ruptured, the pneumothorax severed mediastinal arteries leading to the formation of a hemothorax.

Mediastinal arterial bleeding is a less common cause of hemothorax formation when compared to more common causes such as laceration of the lung, intercostal vessels, or the internal thoracic artery.

Additionally, patients with a hemopneumothorax will likely demonstrate vital signs changes including tachycardia, tachypnea, and in more severe cases hypotension and hypoxia.

In our case, despite the CT findings this patient only had slight tachycardia and was able to ambulate without dyspnea.

Conclusion

While there have been at a few published case reports demonstrating the development of bullous lung disease and pneumothorax in patients with marijuana use without tobacco use, the research is very limited regarding development of hemopneumothoracies in these patients.

Clinicians must keep a broad differential and not underestimate the potential impact of marijuana use.

References

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