



Vaping-Associated Spontaneous Pneumomediastinum

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Introduction

- Spontaneous pneumomediastinum is a rare, often benign and self-limited condition defined by air in the mediastinum.
- Pneumomediastinum is often caused by esophageal rupture, chest trauma, or medical procedures.
- We hereby present an exceedingly rare case of vaping-associated spontaneous pneumomediastinum.

Case Summary

- A previously healthy 32-year-old male with no known past medical history presented for altered mental status after being found by police.
- The patient noted vague chest pressure that developed the previous day though denied any shortness of breath and demonstrated no respiratory compromise.
- Physical exam was revealing for predominant crepitus and bloating of the neck.
- Urgent chest imaging demonstrated extensive pneumomediastinum tracking superiorly into the soft tissues of the neck along with a small amount of air tracking caudally into the upper retroperitoneum without definitive cause identified.
- Upon further questioning, the patient admitted to daily vaping, finishing five cartridges a day as well as daily marijuana use.
- Patient's urine drug screen confirmed marijuana and amphetamine use.
- Given the risk of respiratory compromise and possibility of pneumothorax, the patient was admitted for observation.
- His mental status improved to baseline once detoxed from substances.
- Patient was monitored closely with improvement of chest pressure and pneumomediastinum on chest imaging.
- Patient was discharged 48 hours later after comprehensive education on vaping and marijuana use cessation with follow up imaging scheduled outpatient.

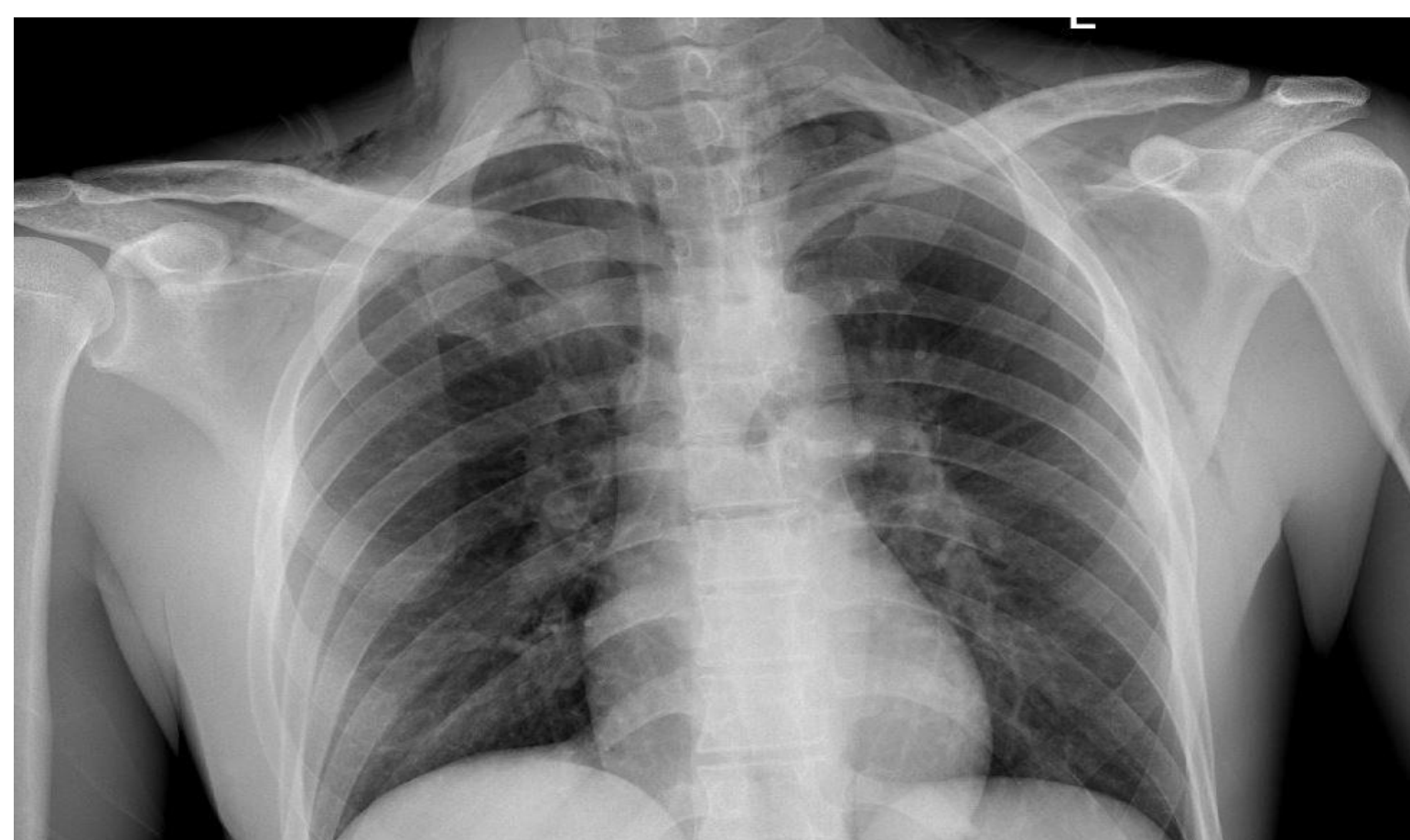


Figure 1: Pneumomediastinum with subcutaneous emphysema involving the soft tissues of the base of the neck bilaterally

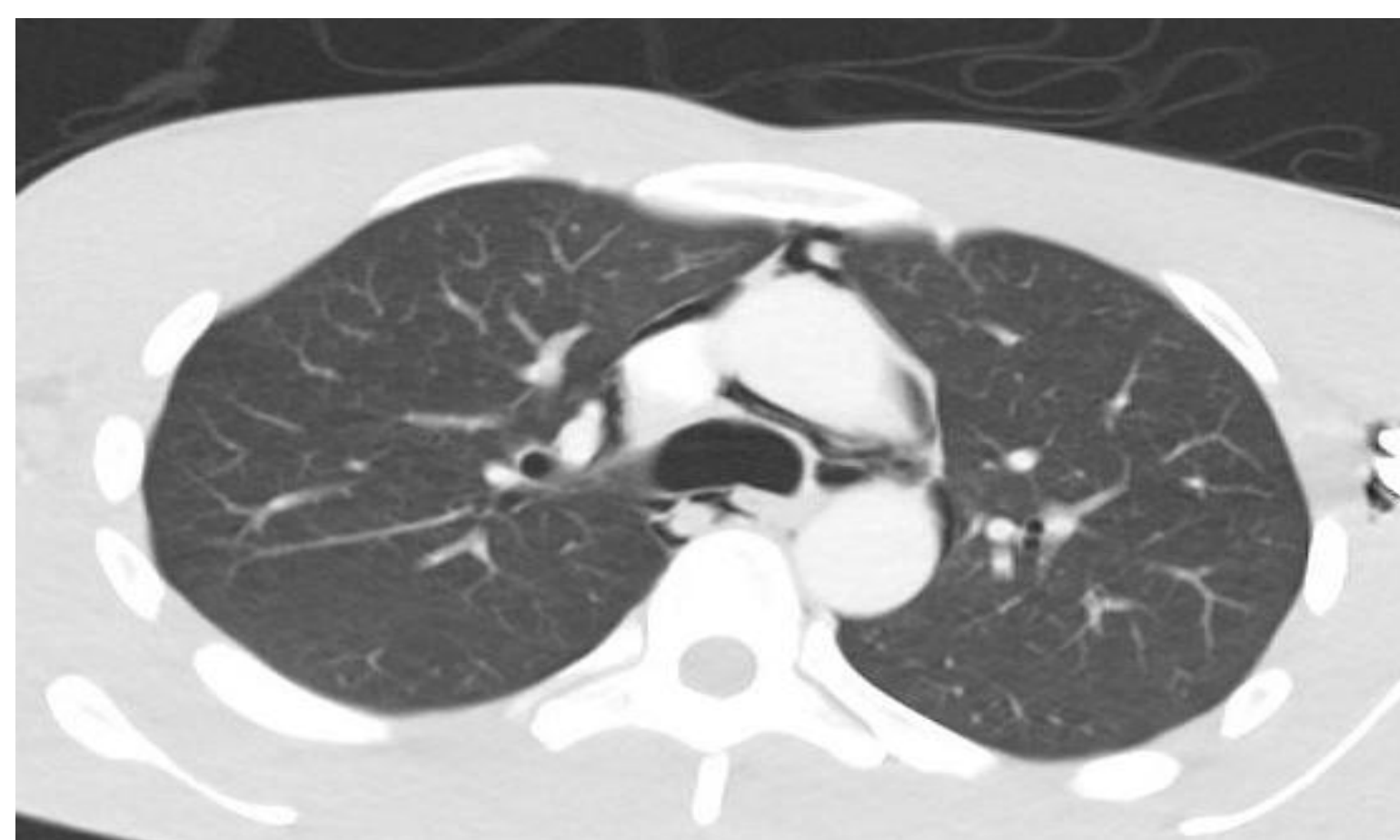


Figure 2: Pneumomediastinum

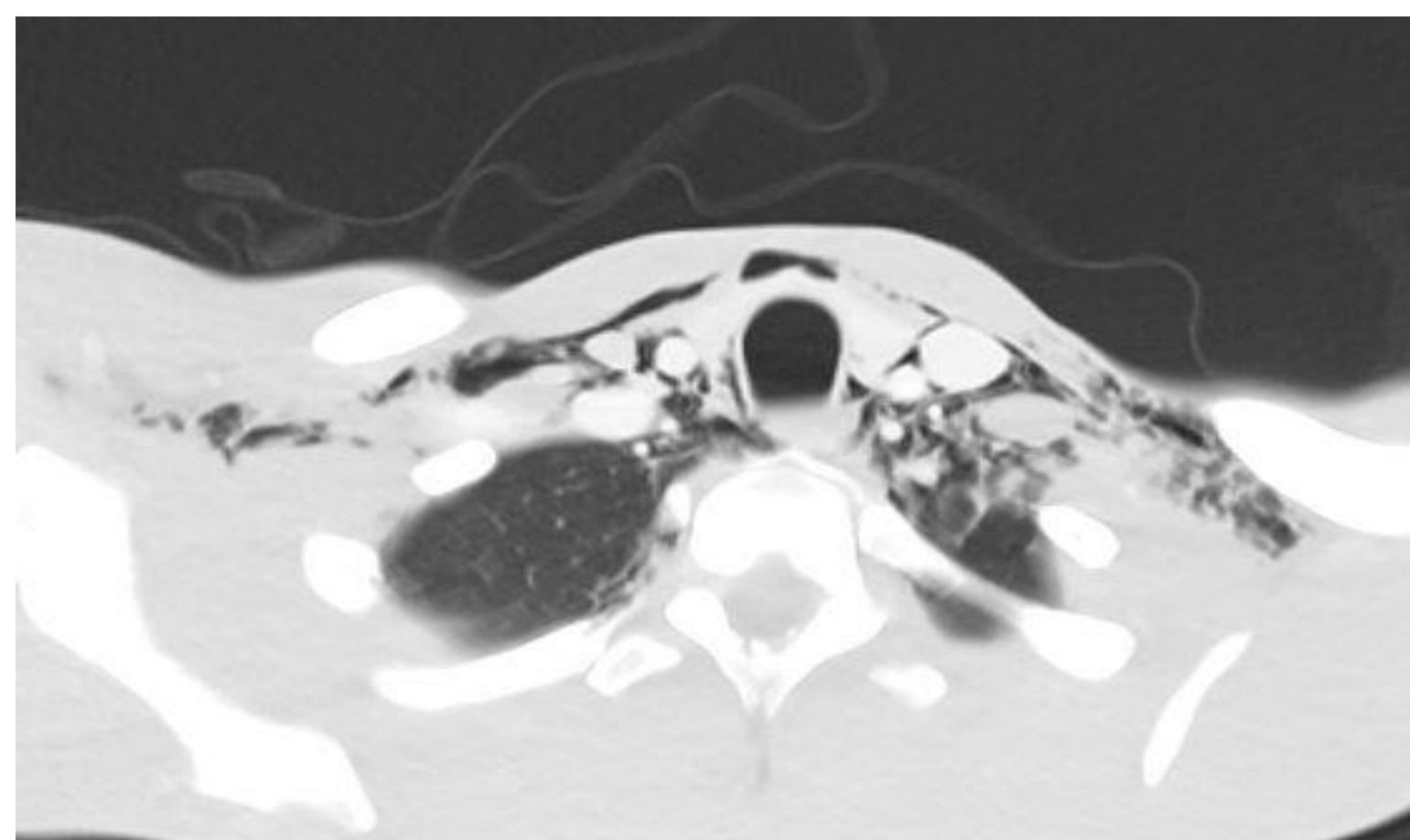


Figure 3: Tracking of the pneumomediastinum superiorly along with subcutaneous emphysema involving the soft tissues of the neck bilaterally

Discussion/Conclusion

- Conventional wisdom holds that traditional cigarette smoking carries numerous negative health consequences, yet the full extent of consequences of vaping remains unclear.
- There have been many cases of e-cigarette or vaping associated lung injury (EVALI), ranging from those managed in an outpatient setting to those with life threatening respiratory compromise requiring ICU level care [1].
- Yet, only five other cases in literature describe vaping-induced spontaneous pneumomediastinum [1-5].
- The proposed mechanism involves the deep inhalation vape users perform to obtain substantial aerosol.
- The increased intra-alveolar pressure results in barotrauma and in turn alveolar rupture.
- Air further dissects into the peribronchial and perivascular space and ultimately into the mediastinum [2].
- The incidence of vaping and electronic cigarette use has increased in recent years, especially among young adults and teens.
- Vaping, specifically, has been marketed as a safer alternative to conventional cigarette smoking.
- However, recent data, including this study, is proving vaping can cause significant health detriment.
- Health care providers should be aware of the adverse effects and risks of vaping and actively discuss vaping use with patients.

References

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