

INTRODUCTION

Spontaneous pneumothorax can occur as a primary event in individuals without a preceding lung disease or as a secondary event in individuals who suffer from a lung disease. Cigarette use has been a well-documented reason for a primary spontaneous pneumothorax; however, it is unknown if e-cigarettes (“vaping”) can also cause pneumothorax.

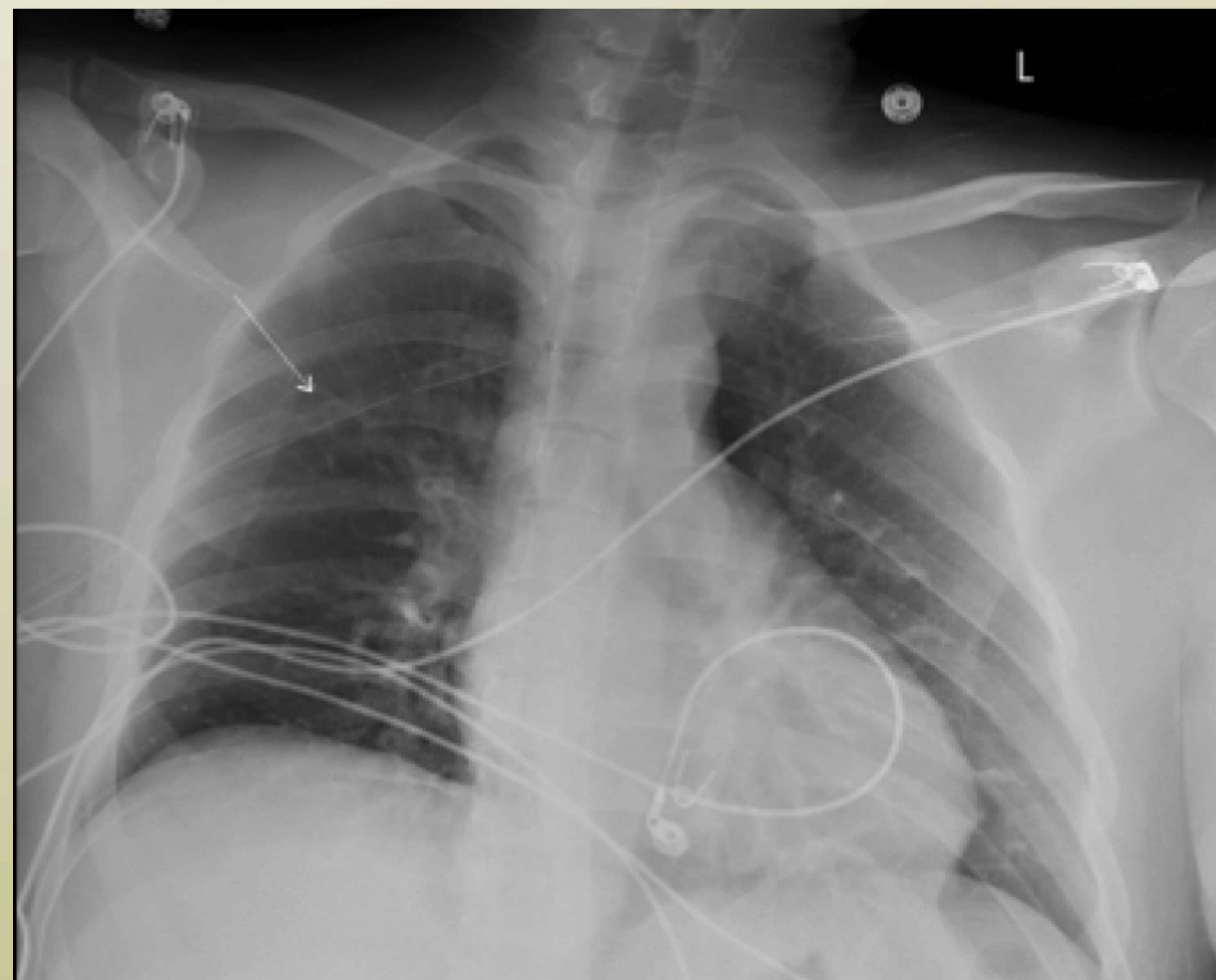
CASE DESCRIPTION

Patient is a 32-year-old Caucasian male with no past medical history who presented to the ER with sudden-onset of shortness of breath and right sided, moderate intensity, sharp, non-radiating chest pain which was aggravated by movement and inspiration. Chest X-ray (CXR) was notable for a right-sided large pneumothorax exhibiting some degree of tension with no mediastinal shift. Pigtail chest tube catheter was placed and resulted in re-expansion of the lung. He was moved to water seal. The following day repeat chest x-ray showed no evidence of pneumothorax and the chest tube was safely removed. The patient was using incentive spirometry, ambulating and was discharged home on hospital day three in a stable condition. He reported a 10 pack years cigarette smoking history, followed by one year of dual use of cigarettes and e-cigarettes. For the past two years was exclusively using e-cigarettes, or “vaping” devices. Since the time he started vaping exclusively, he participated in “cloud” competitions. He endorsed the habit of prolonged breath holding to enhance nicotine delivery. He vowed to quit vaping upon the pneumothorax diagnosis during hospital admission.

IMAGES



CXR with PA view showing large right sided pneumothorax (arrow)



CXR with AP view showing right chest tube in place (arrow) and no evidence of pneumothorax

DISCUSSION

E-cigarettes are a multimillion-dollar industry and have been gaining in popularity with former smokers as well as non-smokers who perceive these to be safer than conventional cigarettes. Over the past 12 months, there has been an increasing recognition of the possible harm associated with the use of e-cigarettes, particularly E-cigarette product use-associated lung injury (EVALI). To date, over 1299 cases of EVALI have been reported to Center of Disease Control (CDC) with 26 deaths as of October 2019 in United States. As more is learned about the pathophysiology and natural course of lung disease in EVALI, we speculate that pneumothorax may be part of the clinical presentation of EVALI.

IMPLICATIONS FOR PRACTICE

Patients who use e-cigarettes are at risk for EVALI and may also be at risk for pneumothorax. Pneumothorax should be considered if someone with e-cigarette or vaping use presents with sudden onset pleuritic chest pain and shortness of breath. Patients should be educated on the risks of using these products. Large population-based studies are needed to clarify this relationship.

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