

## Case Report

# SPONTANEOUS PNEUMOTHORAX IN A CANNABIS DEPENDENT PERSON – A CASE REPORT

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### ABSTRACT

Cannabis is a common drug of abuse. There have been only a few studies on the various effects of cannabis on the respiratory system. So here we highlight a case of spontaneous pneumothorax in a patient with cannabis dependence.

**Keywords:** Cannabis, pneumothorax, inhalation, breath-holding

### INTRODUCTION

Cannabis is the most commonly abused illicit drug worldwide, as well as in India. Recent data shows that about thirty million people use cannabis in India.<sup>1</sup> As the most preferred route of use is smoking, cannabis can have a wide variety of adverse effects on the respiratory system, similar to nicotine. There have been cases of pneumomediastinum, pneumothorax, and subcutaneous emphysema associated with deep inhalation of cannabis.<sup>2</sup> Here, we present a case of spontaneous pneumothorax in a young cannabis smoker. This case assumes importance because of the increase in the prevalence of cannabis use among the youth. The possibility of pneumothorax being missed in cannabis-dependent patients can be easily avoided by routine chest X-ray. This case is reported after obtaining consent from the patient. Cannabis use has to be considered as a contributing or etiological factor in patients presenting with pneumothorax in the absence of other causes.

### CASE REPORT

A 27-year-old male presented to the emergency department with a sudden onset of shortness of breath and pleuritic chest pain. He did not have any prior medical or surgical co-morbidities, and there was no history of any trauma. On examination, there were decreased breath sounds on the left side. Chest X-ray showed left-sided pneumothorax. He was admitted under pulmonology and evaluated for other possible causes of spontaneous pneumothorax, like tuberculosis, airway diseases, interstitial lung diseases, connective tissue disorders, and malignancy, which were ruled out. As no other cause could be identified, he was given a diagnosis of primary spontaneous pneumothorax and managed accordingly. No past or family history of pneumothorax was obtained. On the third day of admission, psychiatry consultation was sought as he was showing irritability and agitated behavior in the ward. Upon evaluation, the patient had a history of cannabis use for the past seven years, with

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use in a dependence pattern characterized by features like craving, tolerance, and loss of control for the past two years. He reported smoking about three to four joints of cannabis daily over the past two months. No other substance use was reported, including tobacco. During his hospital stay, parenteral tramadol was given for pain relief, and following that, he started repeatedly asking for the same. On mental status examination, the patient expressed a significant craving for cannabis and persecutory delusions. Routine blood investigations were found to be normal. The patient was started on Tab. Olanzapine 10 mg and Tab. N-acetyl cysteine 600 mg; parenteral haloperidol 5 mg was given to control agitation. As the patient improved clinically, intercostal drain removal was done after twenty days, and pleurodesis was done. The patient was discharged to continue follow-up from Psychiatry OPD. He presented to the casualty after two weeks with complaints of chest pain, but the evaluation revealed no abnormality. He had stopped taking psychotropics a week back but was abstinent from cannabis use. He had a craving for cannabis and was demanding for tramadol injection. The next visit was one week later with similar complaints and relapse of cannabis use, and then he was lost to follow-up.

## DISCUSSION

Spontaneous pneumothorax occurs without any antecedent trauma to the thorax.<sup>3</sup> In our patient, who was a young male, after ruling out all possible etiologies for spontaneous pneumothorax, cannabis smoking was considered as the possible reason. Beshey et al. reported the largest case series of occurrence of spontaneous pneumothorax in cannabis smokers.<sup>4</sup> It has been reported that on smoking cannabis, one-third of inhaled substance will continue to stay in the lungs. Also, it can lead to a massive burden of carbon monoxide and tar inhalation and accelerated formation of apical blebs when compared to tobacco users.<sup>5,6</sup>

Studies also show that smoking cannabis is associated with larger puff volume and increased depth and inhalation time. The breath-holding time needed is also more, which could lead to shearing force on alveoli and contribute to the development of pneumothorax.<sup>2,7</sup>

This case highlights that in patients, especially young adults presenting with spontaneous pneumothorax, inhalant substance use should always be considered. Also, as Indian studies based on this context are lacking, it calls for future research.

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