

LUNG EMPHYSEMA CAUSED BY MARIJUANA SMOKING

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Background: A 33-year-old male of Turkish origin, born in Belgium, presented to the emergency department with left sided chest pain. One week earlier he had been caught in a fight. To exclude fractures of the ribs a radiography of the chest and ribs was performed.



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Work-up

Conventional radiography of the chest (PA view) (Fig. 1) shows bilateral bullae in the upper lobes (arrows and asterisk). These are larger on the left side (asterisk) than on the right. No evidence for rib fractures.

High resolution CT scan of the chest (Fig. 2) shows on transverse section (A) paraseptal emphysematous bullae in the lung apices (arrows and asterisk). Reformatted image in the coronal plane (B) demonstrates paraseptal emphysematous bullae in the lung apices (arrows and asterisk). Sparing of the rest of the lung parenchyma is observed.

Radiological diagnosis

Based on the unusual CT findings and the young age of the patient a history of cannabis smoking was suspected, which was confirmed by the patient. The diagnosis of *upper lobe emphysema caused by marijuana smoking* was made.

Discussion

The harmful effects of tobacco smoking are well known. Centrilobular emphysema may develop with a uniform distribution. In young male smokers a more uncommon form of bullous disease has been documented, which has a paraseptal distribution and a marked predisposition for the upper lobes. This pattern of emphysema has been reported in regular marijuana users. Our patient admitted

he had been smoking 5 to 10 joints per day for at least 6 years. 3 years ago he stopped smoking marijuana. Cannabis or marijuana can be used in several forms, the most usual intake is by inhalation. It can be smoked in joints, pipes or special devices. Irrespective of the device, there are some differences when comparing the physical dynamics of smoking marijuana with smoking regular tobacco. Application of larger puffs, with deeper inhalation and greater breath holding time, sometimes accompanied by Valsalva manoeuvres in order to achieve a higher systemic absorption of the active substance THC (delta-9-tetrahydrocannabinol), are sometimes applied. In fact, this smoking technique, in combination with a direct pulmonary toxicity, has been proposed as the mechanism responsible for cases of spontaneous pneumothorax and bullous lung disease reported in young cannabis smokers. In case of severe emphysema in young adults, marijuana abuse has to be considered in the differential diagnosis.

Bibliography

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