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Case Report

Rare finding of acute eosinophilic pneumonia associated with heavy cannabis use: A case-report[☆]

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ABSTRACT

We describe the case of a 21-year-old male patient who presented with respiratory distress, abdominal pain and acute renal failure. The symptoms occurred after acute heavy cannabis consumption. Chest computed tomography showed pulmonary infiltrates and pleural effusions which led to further exploration, including bronchoalveolar lavage, that confirmed a rare diagnosis of acute eosinophilic pneumonia. This case highlights the importance of radiologists to consider the prospect of acute eosinophilic pneumonia in the diagnosis of cannabis-using patients with sudden chest pain or dyspnea, as correct diagnosis enables prompt treatment with corticosteroids and an often favorable outcome.

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Introduction

Acute eosinophilic pneumonia is a rare cause of sudden chest pain or dyspnea, characterized on computed tomography by pulmonary infiltrates and pleural effusions associated with alveolar hypereosinophilia.

It can be idiopathic in its primary form while the secondary form includes parasitic causes, bronchial aspergillosis, drug and toxic causes.

In most cases, if diagnosed, the evolution is promptly favorable after the administration of corticosteroids.

Case history

We report the case of a 21-year-old male patient admitted to the emergency department for repeated vomiting, anuria, abdominal and paracardiac pain since the morning, after consuming more than 20 homemade cannabis joints the night before. He had no significant history.

The patient's SARS-COV 2 PCR was negative and he had received his third dose of the coronavirus vaccine (booster) the previous week with no major symptoms after vaccination.

His parameters on admission were normal except for mild hypertension (152/70 mm Hg). He was afebrile. Biology showed

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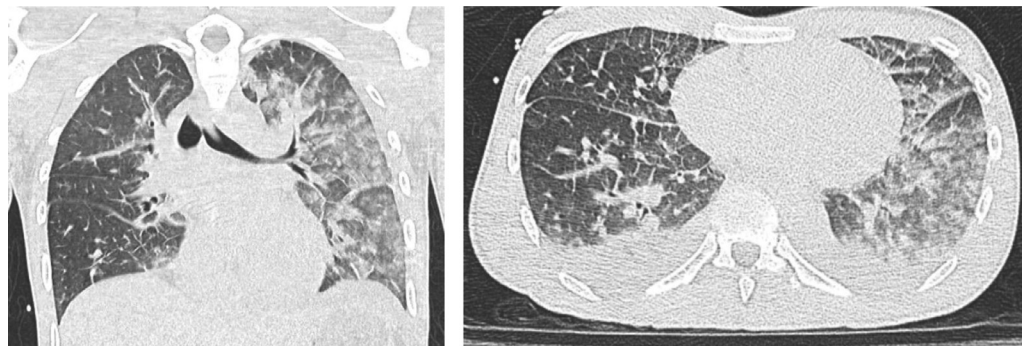


Fig. 1 – Chest CT shows bilateral diffuse alveolar opacities with ground glass patches, regular septal thickenings, and bilateral pleural effusions.

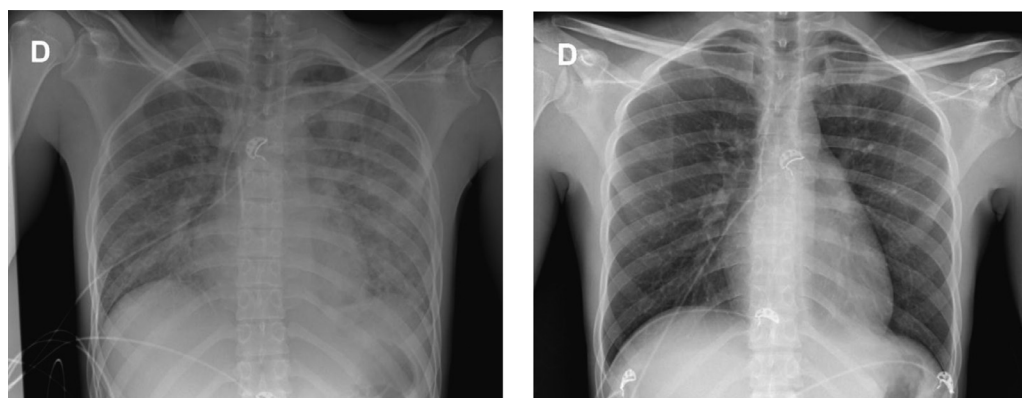


Fig. 2 – X-ray on the first day of hospitalization (left) vs X-ray 72 hours later (right).

acute renal failure and an inflammatory syndrome. He had no blood eosinophilia.

An abdominal and pelvic computed tomography scan was performed, which did not show any acute abdominal pathology or urinary tract obstruction.

The patient was admitted for hospitalization but a few hours after, his condition deteriorated and he developed respiratory failure with hypoxemia and abdominal pain which intensified. He was then transferred to intensive care unit.

An emergency chest computed tomography scan was performed and the finding showed bilateral diffuse alveolar opacities with ground glass patches, regular septal thickenings, and bilateral pleural effusions. The cardio-thoracic index was within normal limits (Fig. 1). Bronchoalveolar lavage clearly showed hypereosinophilia.

The patient was placed on non-invasive ventilation and he was given corticosteroids.

His clinical condition improved rapidly and after 72 hours, complete reversibility of the infiltrates could be seen on the X-ray (Fig. 2).

His kidney function had returned to normal and he had fully recovered before leaving the hospital after 6 days.

Commentary

Acute eosinophilic pneumonia is a rare complication after the consumption of illicit psychoactive substances, such as cannabis, which most often affects young men under the age of 50 [1].

The time between substance use and the onset of symptoms is variable and the pathophysiology of the disease is unclear [2].

Radiological signs are similar to those of acute pulmonary edema and may include ground glass infiltrates, consolidations, regular septal thickenings, centrilobular nodules and pleural effusions. However, unlike acute pulmonary edema, there is no cardiomegaly [3].

The diagnostic criteria include the acute nature of the pathology (<1 month) with the presence of fever, hypoxia, the presence of diffuse ground glass, reticulations, condensations, pulmonary hypereosinophilia, stains for negative fungal and parasitic infections and a response to corticosteroids without recurrence after discontinuation [3].

The evolution is, in the majority of cases, promptly favorable under oxygen therapy and corticosteroid therapy [4].

Peripheral eosinophilia is often absent at admission but can arise during hospitalization.

Pleural effusions may disappear more slowly than parenchymal opacities [5].

The main differential diagnoses are acute interstitial pneumonia, Acute Respiratory Distress Syndrome (ARDS), and other causes of eosinophilic lungs (parasites, Churg & Strauss disease, chronic hypereosinophilia syndrome) [3].

Conclusion

Acute eosinophilic pneumonia is a rare condition that should be considered in the differential diagnosis of cannabis-using patients with sudden chest pain or dyspnea.

It should also be considered in a young adult with no cardiac history and who presents a clinical picture and imaging similar to acute pulmonary edema, but without cardiomegaly.

It is nevertheless important to know the diagnostic criteria of the pathology and to administer oxygen and corticosteroid therapy as soon as possible, because it can be fatal.

Patient consent

The patient's informed consent was obtained for the use of data and images for scientific work and for publication.

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