Acute interstitial pneumonia following heroin inhalation

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Pneumopathie interstitielle aiguë après consommation d’héroïne par voie nasale

Acute interstitial pneumonia following heroin inhalation is uncommon, and its associated effects are poorly described in the literature. We report here a patient hospitalized for sudden-onset dyspnea with severe hypoxia following heroin inhalation, with no etiological differential diagnosis than acute interstitial pneumonia related to heroin inhalation.

Case report

A 49-year-old male patient was hospitalized in our intensive care unit for sudden-onset dyspnea with severe hypoxia. Physical examination revealed an afebrile patient with a respiratory rate of 32 breaths per minute, and diffuse fine crackles on pulmonary auscultation. Oxygen saturation on room air was lower than 80\%, and required the administration of supplemental oxygen up to 15 litters per minute. No other organ dysfunction was observed. With the exception of tobacco consumption, past medical history was insignificant. On further questioning, the patient admitted to sniffing heroin the previous day, and also admitted to previous heroin-sniffing seven months earlier. A chest CT revealed a diffuse interstitial syndrome, with large ground-glass infiltration of the lung, notably of the sub-pleural areas, associated with parenchymal reticulations and centrolobular emphysema (\textbf{figures 1 and 2}). No signs of cardiac failure were found on the echocardiography. All samples sent for microbiological and viral analyses (bronchial aspiration lavage, blood cultures, streptococcus pneumoniae and legionella pneumophila urine antigen, viral PCR and search for influenza virus), were negative. HIV serology was negative. The patient improved rapidly, and was weaned off oxygen therapy within 48 hours. There was a total regression of clinical signs without any specific treatment other than supportive care.
Ten days later, a chest CT was performed and revealed a complete disappearance of the pulmonary ground glass appearance, but persisting centrolobular emphysema, predominantly in the hilar and apical regions (figures 3 and 4). Pulmonary function studies showed mild obstructive lung disease (forced expiratory volume in one second: 63% of predicted) with increased total lung capacity (121%) and residual volume (154%), indicator of pulmonary emphysema. Transfer factor (TLCO) was 63%.

**Discussion**

The diagnosis of acute interstitial pneumonia related to heroin inhalation was made. Acute interstitial pneumonia related to intravenous heroin overdose usually presents as persistent hypoxia after resolution of opiate respiratory depression along with frothy, pink-tinged pulmonary secretions. The
characteristic radiographic pattern is of fluffy diffuse pulmonary infiltrates. Symptoms usually resolve rapidly within hours to 1 or 2 days with supportive care alone [1]. The radiological manifestation is multifocal ground-glass attenuation associated with septal thickening, in the absence of pleural effusion or cardiomegaly, and occurring within hours of drugs use [2].

In conclusion, we described here an acute interstitial pneumonia following heroin inhalation which manifests similarly to interstitial pneumonia following intravenous heroin overdose.

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References