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CASE REPORT

Radiographic bilateral cavitary lesions in lipoid pneumonia

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Radiographic bilateral cavity lesions in lipoid pneumonia. J. Casademont, A. Xaubet, J. López-Guillermo, C. Agusti, J. Ramirez.
ABSTRACT: We report a case of lipoid pneumonia with pulmonary bilateral cavitated lesions. The diagnosis was based on the finding of abundant lipid-laden alveolar macrophages in bronchoalveolar lavage and the presence of histologic changes indicative of lipoid pneumonia in transbronchial lung biopsy.
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Lipoid pneumonia is an uncommon cause of lung disease [5]. It may be caused by mineral oil, taken as nose drops or laxatives, or by animal or vegetable oils [6]. Radiographic findings are disparate; they may be small opacities either in groups or widespread throughout both lung fields [5].

We report a case of lipoid pneumonia with radiographic bilateral cavitary lesions. Although the epidemiologic antecedents were uncertain, the diagnosis was established by means of transbronchial lung biopsy and bronchoalveolar lavage findings. In this paper, we want to draw attention to the unusual radiographic abnormalities observed in this case.

Report

A 35-yr old man with a history of fever, chills and right pleuritic pain was admitted to our hospital. He had smoked one packet of cigarettes daily for 17 yrs and was an occasional cocaine sniffer (6–7 times/month). He had worked as a hairdresser for seven yrs until two months prior to the onset of symptoms. There was no history of recent loss of consciousness, dysphagia or hoarseness.

Three weeks prior to admission, non-productive coughing and fever with shaking chills developed. He was given amoxycilin 1.5 g daily without improvement. The day before entry he noticed right pleuritic pain. On admission, physical examination was normal and blood tests did not reveal any abnormalities. A chest roentgenogram showed two well defined cavitated lesions in both lower lung lobes (fig. 1). Serological tests for cytomegalovirus, herpes virus, respiratory viruses and *Legionella pneumophila* were negative. Upper gastrointestinal studies and neurologic evaluation of pharyngeal function were normal.

A fibreoptic bronchoscopie examination disclosed a normal bronchial tree. Specimens obtained by a telescoping plugged catheter revealed no microorganisms. Bacterial, mycobacterial, and fungal cultures of both bronchial aspirates and bronchoalveolar lavage (BAL) fluid were also negative. Staining of BAL cellular preparations by Groccot methenamine, Giemsa and Periodic-Acid-Schiff (PAS) methods, did not reveal the presence of *Pneumocystis carinii*, viral inclusion bodies or fungi. In order to determine the amount of intracellular lipids, BAL cellular smears were stained with Sudan black, and the alveolar macrophages were analysed according to the lipid-cellular index of CORWIN and IRWIN [4]. This index was 280 in our patient; an index equal or greater than 100, although not diagnostic, suggests the possibility of aspiration as the cause of parenchymal lung disease.

Fig. 1. Chest roentgenogram showing well-defined cavitary lesions in both lower lung lobes.

A right lower lobe transbronchial lung biopsy demonstrated histologic changes consistent with li-

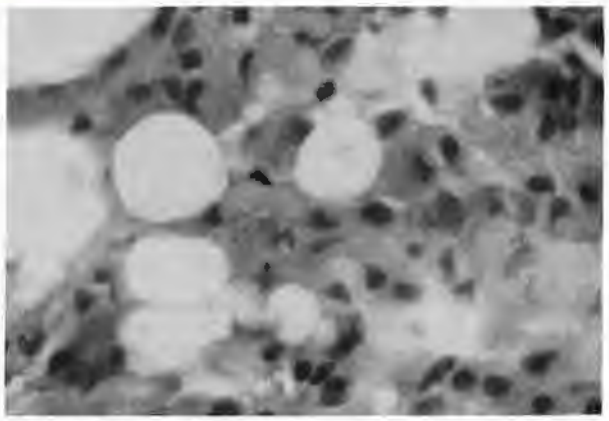

Fig. 2. Transbronchial lung biopsy showing histologic changes consistent with lipoid pneumonia.

poid pneumonia (fig. 2): the alveoli were filled with desquamative cells which had a vacuolated cytoplasm. The vacuoles were of different sizes, becoming as big as the alveoli. The interstitium had a few lymphocytes as well as lipid droplets. Acetaminophen was administered.

Pleuritic pain disappeared within 48 h and the fever in five days. An additional chest roentgenogram disclosed no changes. During the following controls, the patient continued well and denied any more cocaine sniffing. A chest roentgenogram taken two months after leaving the hospital was normal.

Discussion

Lipoid pneumonia has been related to the aspiration of vegetable oil (olive oil), animal oil (milk, cod liver oil) and mineral paraffin oil used as a laxative or in nasal drops [2, 5]. Although the most frequent presentation is an incidental radiographic finding with minimal or no pulmonary symptoms, febrile forms with shaking chills, shortness of breath and chest pain have been reported [6]. The radiographic appearances are often erratic, but the presence of cavitated lesions is exceptional. We have found only one reported case with these radiographic findings [3].

Diagnosis of lipoid pneumonia is usually based on occupational antecedents or a history of the use of mineral oils for years, together with repeated identification of oil-laden macrophages in sputum examination [7]. However, in some cases it is necessary to perform a lung biopsy to establish the diagnosis [5]. In the present case it was difficult to relate the presence of lipoid pneumonia to the epidemiologic antecedents. Although the patient had worked as a hairdresser, in continuous contact with shellac, this exposure had been non-existent for some months prior to admission. However, he was a regular cocaine sniffer and it is possible that this drug was mixed with a substance containing some type of oil. Unfortunately, we did not have a cocaine sample to study. Whatever the cause, the rapid onset of symptoms and the radiographic cavitated lesions suggested an intense inflammatory reaction which is usually related to exposure of oil of vegetable or animal origin [6].

In our patient, the diagnosis of lipoid pneumonia was suggested by BAL and transbronchial lung biopsy findings. The presence of abundant lipid-laden macrophages in BAL fluid, even though it is not diagnostic, encouraged us to pursue the possibility of lipoid pneumonia. Furthermore, the histologic changes in transbronchial lung biopsy were consistent with the diagnosis of lipoid pneumonia.

The treatment of lipoid pneumonia is based on avoiding further exposure to the etiologic agent and the administration of corticosteroids [1]. In our case, the cavitary lesions disappeared completely within two months. The patient was not given corticosteroids but he gave up sniffing cocaine.

In conclusion, we would like to emphasize that pulmonary cavitated lesions can be produced by lipoid pneumonia. Our findings also show that BAL and transbronchial lung biopsy may offer an accurate diagnosis and avoid more aggressive explorations such as open lung biopsy.

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RÉSUMÉ: Exposé d'un cas de pneumonie lipidique avec lésions pulmonaires excavées bilatérales. Le diagnostic a reposé sur la présence de macrophages alvéolaires chargés de lipides et présents en abondance dans le lavage broncho-alvéolaire, et sur la présence de modifications histologiques suggestives d'une pneumonie lipidique dans la biopsie pulmonaire transbronchique.