

Do Not Play with Fire

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ABSTRACT

We report a case of exogenous lipid pneumonia caused by inhalation of liquid paraffin in a fire eater young man. The patient was admitted to the Emergency Department because of acute retrosternal pain, dry cough and dyspnea. Chest radiograph showed multiple bilateral basal alveolar opacities associated to left pleural effusion; CT chest scan showed multiple bilateral areas of consolidation with cavity areas. BAL cytologic examination revealed abundant lipid-laden macrophages. Clinical symptoms resolved after corticosteroid treatment. Lipoid pneumonia is a rare and often underdiagnosed entity. The presence of lipid-laden macrophages in sputum or BAL fluid helps to confirm the diagnosis.

Keywords: Lipoid Pneumonia; Fire Eater; BAL Fluid

1. Introduction

Exogenous lipid pneumonia is a rare disease that has traditionally been considered a chronic condition secondary to continued aspiration or inhalation of fatty substances. Sometimes an acute form may appear after a single aspiration of lipid material, being a characteristic accident of street artist or “fire-eaters” that may generate acute respiratory failure [1-3].

We report a case of pneumonia caused by inhalation of liquid paraffin in a fire eater young man.

2. Case Report

A 29-year-old male fire eater was admitted to the Emergency Department because of acute retrosternal pain, dry cough and dyspnea. Some hours before admission an accidental aspiration of liquid paraffin (Diavolina®) occurred during a flame-blowing show.

On admission, PA was 120/80 mmHg, cardiac rate was 60 bpm, SatO₂ was 94% and temperature 37.3°C. Auscultation of the lungs was normal. Laboratory data showed leucocytosis (18.300/mm³) and high C reactive protein (292 mg/l).

Analysis of blood gases showed a pO₂ of 72.1 mmHg, a pCO₂ of 30.6 mmHg, a pH value of 7.45 and a pO₂/FiO₂ of 344.7 mmHg.

Chest radiograph showed multiple bilateral basal alveolar opacities associated to left pleural effusion (**Figure 1**).

Legionella and Pneumococcus urinary antigens were negative.

The patient was admitted in our ward and began antibiotic treatment with ceftriaxone and clarithromycin.

The patient was becoming progressively worse, with more cough and dyspnea on rest.

Inflammatory tests were high, hemocultures were negative; HIV test was negative; serum Mycoplasma and Chlamydia tests were negative.

A CT chest scan showed multiple bilateral areas of consolidation with cavity areas (**Figure 2**).

Bronchoscopy and BAL fluid were performed. Results of all bacterial and fungal cultures remained negative. BAL cytologic examination revealed abundant lipid-laden macrophages (Oil-Red coloration) (**Figure 3**).

Clinical symptoms resolved after appropriate corticosteroid treatment and the patient was discharged. At one month follow-up examination, laboratory data and chest radiograph were normal.

3. Discussion

Various practices can lead to exogenous lipid pneumonia, e.g., the blowing of sesame oil through the nose in children in Southern India, the forcible feeding of ghee (clarified butter) in Saudi Arabia, the use of mineral oil to relieve small-bowel obstructions in Brazil and the use of gas-oil by fire-eaters [4].

Fire eaters during their show blow a combustible liquid to create a flame. Sometimes a part of this combusti-

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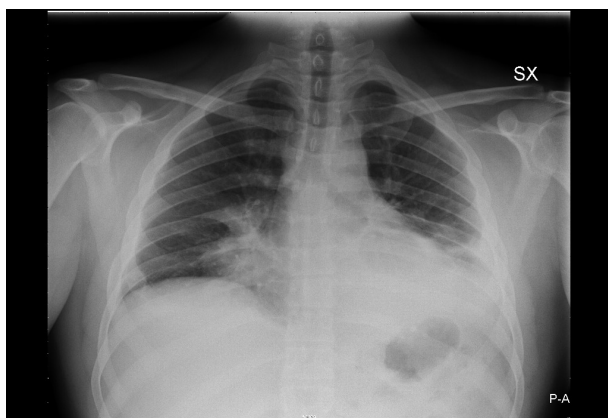


Figure 1. Chest X-ray shows bilateral alveolar opacities with left pleural effusion.

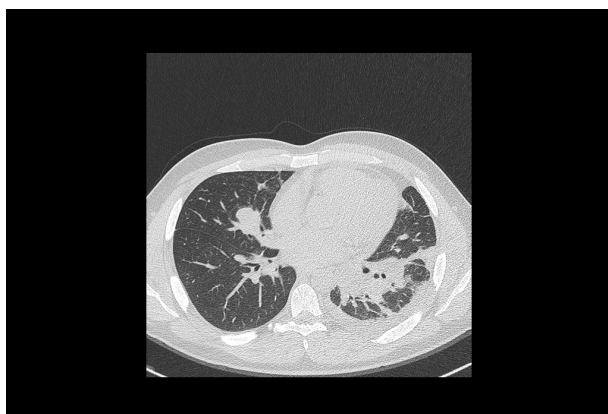


Figure 2. CT chest scan shows multiple parenchymal opacities with cavity areas.

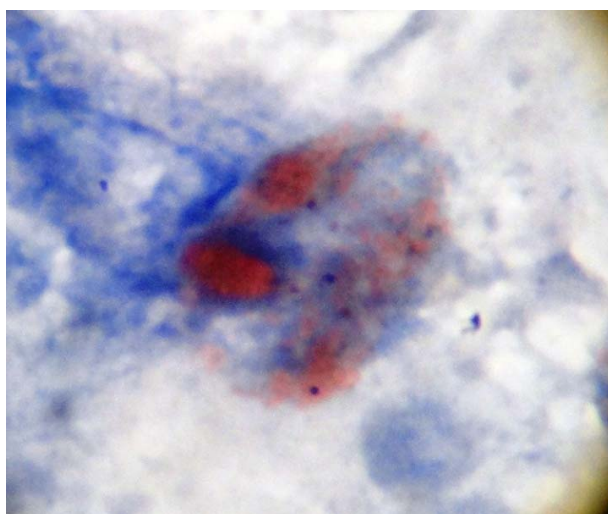


Figure 3. BAL fluid with lipid-laden macrophage (Oil Red coloration) (1000 \times).

ble can be inspired.

Lipoid pneumonia is a rare, often underdiagnosed entity. Real incidence is not known; since 1970 about 80

cases in fire-eaters have been reported [1-3,5-14].

The diagnosis is frequently missed or delayed, and requires a high index of clinical suspicion [3].

Chest CT imaging typically shows bilateral alveolar consolidation and it is necessary to evaluate complications.

The presence of lipid-laden macrophages in sputum or BAL fluid helps to confirm the diagnosis [15].

The symptoms and pathologic changes often completely resolve with cessation of exposure; however, severe cases can progress to fibrosis and chronic respiratory failure [15].

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