

# Pneumonia due to diesel fuel aspiration: A case report

Mazot aspirasyonuna bağlı pnömoni: Bir olgu raporu

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## Abstract

Pneumonia due to fuel oil aspiration is a rare clinical condition occurring after accidental- aspiration of petroleum products. A twenty-one years old male patient admitted to our hospital complaining of fever, cough, shortness of breath and right sided pleuritic chest pain. Physical examination revealed tachycardia, tachypnea, fever and fine crackles at right lower lung fields and ronchi on all lung fields on auscultation. On his follow up the patient had hypoxemia that required oxygen support and bronchoconstriction that required bronchodilatory therapy. We here aimed to present the case of pneumonia due to diesel fuel aspiration with review of the literature.

**Keywords:** Pneumonia, fuel oil, aspiration

## Özet

Mazot aspirasyonuna bağlı gelişen pnömoni petrol ürünlerinin aspirasyonu sonucu nadir gelişen bir klinik sorundur. 21 yaşında erkek hasta kliniğimize ateş, öksürük, nefes darlığı ve plöritik tarzda sağ yan ağrısı şikayetleri ile başvurdu. Hastanın yapılan değerlendirmesinde taşikardik ve takipneik olduğu ateşinin 38 oC olduğu görüldü. Hastada aynı zamanda dinlemekle sağ akciğer alt zonda ral ve tüm akciğer alanlarında ronküs duyuldu. Kliniğimize yatırılan hastada hipoksemi olması üzerine oksijen tedavisi ve bronkokonstrüksiyon için bronkodilatör tedavi verildi. Mazot aspirasyonuna bağlı pnömoni gelişen olguyu literatür bilgisi eşliğinde sunmayı amaçladık.

**Anahtar kelimeler:** Pnömoni, mazot, aspirasyon

## Introduction

Pneumonia due to diesel fuel aspiration, which is a rare form of acute pneumonitis, develops after aspiration of petroleum products. Children, animators those who make performance with fire-eating or people who deal with petroleum products are under the risk of this type of pneumonitis. Aspiration of hydrocarbon products, particularly in children, elderly and debilitated persons, usually results from vomiting that occurs after accidental aspiration (1). Siphoning of petrol leading to right middle lobe pneumonitis have been documented before (2,3). Even though it is still a rare case, the entity may be more common than reported.

Involvement of the pulmonary system occurs in the form of pulmonary oedema, atelectasis and consolidation, but most common presentation is hydrocarbon toxicity. Clinical features, duration of diseases and outcome of diseases differ among patients. If not recognised early, the condition may be bad or even fatal. It is characterized by symptoms such as dyspnea, cough, chest pain, and fever and lung consolidations. Here we present a case of pneumonia due to diesel fuel aspiration occurred after accidental aspiration of diesel fuel while siphoning from fuel tank.

## Case Report

A 21 year-old non-smoking male attended to our clinic with complaints of right sided chest pain, fever and cough with sputum. His medical and family histories were unremarkable. His physical examination revealed high body temperature of 38 C°, heart rate of 100 beats per minute, respiratory rate of 22 breaths per minute, blood pressure of 120/70 mmHg, and SpO<sub>2</sub> of 94% in room air. Physical examination of the chest revealed right sided fine crackles in the right lower zone and ronchi in all lung fields. His initial blood analyses were as follows; white blood cells 16560/uL (79.7% granulocytes, 8.5% lymphocytes, 10.3% monocytes and the remaining other cell types), haemoglobin 16 gm/dL; haematocrit 45%; platelets 450,000/uL, erythrocyte sedimentation rate 50 mm/1st hour and serum C-reactive protein 90 mg/L. His blood chemistry was as follows: Glucose 87 mg/dL, blood urea nitrogen: 130 mg/L, creatinine 3 mg/L, protein 4.8 g/dL, albumin 3.5 g/dL. Chest X-ray at admission was compatible with right sided pneumonia (Figure 1). The patient was hospitalized for further evaluation. After hospitalization of the patient, non-specific antibiotherapy (ampicilline sulbactam 4x1 gram, daily) was started. Patient's complaints and his general condition worsened. Computed tomography of the lungs revealed pneumonia in the right middle lobe consistent with aspiration pneumonia (Figure 2) when considered with the history. On inquiry, he revealed to have siphoned the diesel tank. Clinical

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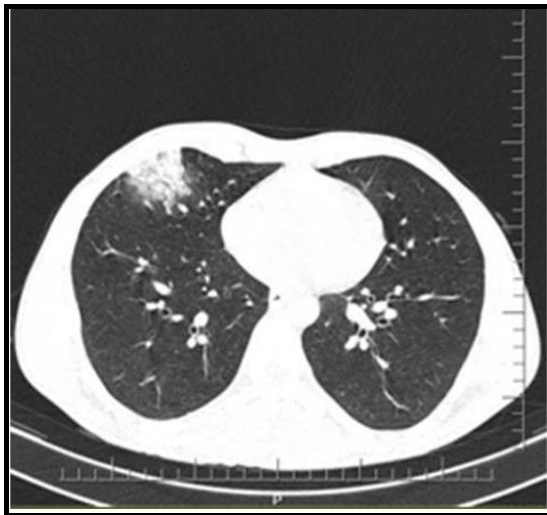
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and radiological improvement was observed in the following days. One week later the patient began to recover, and the patient discharged from hospital



**Figure 1.** Chest X-Ray revealed right sided consolidative area.



**Figure 2.** Computed tomography of the lungs revealed consolidative area with airbronchograms in the right middle lobe.

### Discussion

In this article, we report a relatively rare clinical picture of a 21-year-old man after accidental diesel fuel aspiration. The entity is supposed to be more common than reported, as the practice of diesel/petrol siphoning is quite common in Asia and Middle East. Generally aspiration of diesel/petrol occurs accidentally while siphoning from fuel tanks (4). More commonly affected parts of lungs are as was in our case right middle lobes during siphoning of petrol/diesel (4). Patients usually present with fever cough chest pain and shortness of breath (2). The entity is sometimes hydrocarbon pneumonitis or lipid pneumonia in which both can present as acute onset of breathlessness. Hydrocarbon pneumonitis in professional 'fire-eaters' due to accidental aspiration of kerosene also has been described (5). Radiologic

findings are generally bilateral consolidations which later might be cavitated and/or form pneumatoceles (6). Tissue necrosis due to lipid pneumonia might lead to pulmonary abscess, pneumatocele, pneumothorax and broncho-pleural fistulae. Lesions generally regress with minimal scar tissue (7, 8). There might be leucocytosis, elevation of acute phase reactants and liver enzymes (9). Acute forms usually have a good outcome and regress favourably in a few days with conservative supportive measures; however some cases might have a worse outcome (10).

In the presented case, pneumonia and lipid pneumonia were on top of the differential diagnosis, because the patient was a young male with pulmonary complaints, there was a history of siphoning diesel fuel from tank. The patient was hospitalized and treated with antibiotherapy. But later his general condition and oxygenation worsened. On auscultation there was ronchi in all lung fields resembling a reactive airway dysfunction syndrome thus the patient treated with broncodilatory therapy. Acute hydrocarbon poisoning is also a possible outcome in some cases after ingestion of motor fuels that occurs following siphonage. In some cases, even the central nervous system and the gastrointestinal tract may be involved (11). Here, we highlight the fact that aspiration pneumonia might be due to accidental diesel aspiration while siphoning fuel tanks. Clinicians must be aware of such a possibility. Immediate diagnosis is very important because some cases may be fatal.

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