Lipoid Pneumonia Due to Aspiration of Oil Products: Two Case Reports

Gokhan Perincek¹, Sema Avci²* and Emrah Batmaz³

Affiliation
¹Respiratory Medicine, Kars Harakani State Hospital, Turkey
²Emergency Medicine, Amasya University, Sabuncuoglu Serefeddin Research and Training Hospital, Turkey
³Respiratory Medicine, Tekirdag State Hospital, Tekirdag, Turkey

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Introduction
Lipoid pneumonia which is an uncommon disease, with a frequency of 1-2.5% caused by the presence of lipid in the alveoli [1,2]. Lipoid pneumonia is classified into two major groups; exogenous and endogenous/idiopathic pneumonia [2]. Acute exogenous pneumonia is typically caused by aspiration of a sum of petroleum-based products [2]. It is typical for children due to accidental poisoning [2]. Chronic exogenous pneumonia commonly results from recurrent episodes of animal fat, mineral or vegetable oils [2]. Exogenous pneumonia is typically for older patients but sometimes it can be seen in children suffering from aspiration [2]. Lipoid pneumonia commonly presents with subtle onset and respiratory symptoms such as cough, dyspnea, chest pain, fever, hemoptysis, systemic findings and radiological findings such as pulmonary opacities, consolidations, pneumomediastinum, pneumothorax, pleural effusions, pneumomediastinum and nodules [1,2]. We aim to present here two cases of exogenous pneumonia and their radiological findings.

Case Report 1
A 16-year-old boy admitted to emergency room (ER) with nausea, emesis, cough, sputum and chest pain. His medical history and family history were unremarkable. He said that he took diesel oil with a hose by mouth from the chemical reservoir and he aspirated it accidentally one day before. The patient’s general condition was worsened during the examination and he was intubated in ER. In the intensive care unit. The patient was extubated and taken to Respiratory medicine service on the 4th day of the treatment. Verbal consent was obtained from the patient for this case presentation.

Figure 1a-1c: Chest radiographs of him on the admission, 10th day and 30th day, respectively.

Figure 1d-1f: Chest computed tomography findings of patient.

Figure 1g and 1h: Noduler sequela was seen on the patient’s chest tomography in the sixth month, after discharge.

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Chest computed tomography showed parenchymal consolidation areas containing air bronchograms at fat density. Density measurements were made in vertical, axial and sagittal sections. Figure 1d-1f show chest computed tomography findings of exogenous pneumonia for this patient.

Antibiotherapy of the patient continued with ampicillin-sulbactam (4*1.5 gram intravenous for a day) and completed to 15 days. The patient with clinical and radiological improvement was discharged at the end of 15 days. After discharge, nodular sequela was seen on the patient’s chest tomography (Figure 1g and 1h).

Case Report 2
A 72-year-old man admitted to emergency room with cough, high fever and hemoptysis. The patient accidentally drank a glass of gas oil five days before. The patient had only hypertension disease. 4 hours after the incident, the patient was admitted to a hospital and treated with antibiotics.

The patient was referred to our hospital due to persistent high fever and hemoptysis. The patient was conscious, cooperative, and poor in orientation. In the respiratory system examination, breathing sounds were reduced in both lungs and there were inspiratory rales in the right middle and lower left lungs.

Bronchoscopy revealed no endobronchial lesion. Mucosa of right middle and lower lobes were with edema. CytoLOGY showed no lipid-laden macrophage. Ampicillin-resistant E. coli and C. Albicans were seen as a result of bronchoalveolar lavage. The patient’s antibiotic treatment was continued with cefuroxime sodium and ciprofloxacin. The thoracotomy performed from the patient's pleural effusion was consistent with exudates. Oral antibiotic was initiated on the 7th day. The patient was discharged on the 14th day of treatment. Verbal consent was obtained from the patient for this case presentation.

Discussion
The exogenous lipid pneumonia is caused by aspiration or inhalation of mineral oils, animal oils or petroleum products or lipid pneumonia can be endogenous commonly following post obstruction either due to lung cancers, bronchiolitis or lung necrosis [3]. One of the our patients who presented with lipid exogenous pneumonia was diesel oil aspiration and the other one was admitted to ER as a result of gas oil aspiration.

In the literature, case reports related to aspiration-induced lipid pneumonias were reported in childhood. However, lipid pneumonia due to oil aspiration can also be seen in elderly patients. Our patient who was exposed to gas oil aspiration was 72-year-old man. The clinical symptoms of lipid pneumonia are nonspecific and may vary due to patient’s age, duration of oil intake; the amount and quality of oil aspirated [4]. In the literature, time of exposure, amounts of oils and quality of material vary according to case reports. Elder patients are more asymptomatic than early ages and also lipid pneumonias are commonly chronic and progressive for geriatric patients [4]. Because of this reason, lipid pneumonias are usually discovered by as an autopsy finding [4]. Both of our patients presented to the emergency department with severe clinical presentation.

The diagnosis of exogenous lipid pneumonia is based on a history of exposure to oils and clinical findings, radiological findings, presence of lipid-laden macrophages on sputum or bronchoalveolar lavage [4]. In despite of, chest radiographs may be unremarkable in patients with exogenous lipid pneumonia; most of them show abnormalities [5]. Homogenous dense consolidation with air bronchograms, diffuse or focal and unilateral or bilateral involvement, cavitation, nodules and masses resulting from inflammation or fibrosis, atelectasis and pleural effusions may seen on chest radiographs of these patients [5]. Chest computed tomography and magnetic resonance imaging may detect fats within pulmonary tissues [5]. However, that none of these clinical and radiological findings alone is diagnostic for exogenous lipid pneumonia.

Treatment modalities of lipid pneumonia are poorly defined. Treatment strategies may include whole lung lavage, supportive care, systemic corticosteroids and thorascopy with surgical debreidemen [6]. Antibiotics treatment may be given for complicated patients. Lipoid pneumonia is an uncommon disease encountered in all age groups. Physician should enquire about oil intake in all patients with persistent cough and chest symptoms. Treatment involves removal of the offending agent and supportive care.

References