SHORT REPORT

The analysis of the cases of aspired fuel oil and gasoline through siphonage method

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Abstract

Accidental aspiration of petroleum products in children can also be witnessed in adults working with petroleum products by siphonage or swallowing fire for demonstration purposes.

Ten cases admitted to Yuzuncu Yil University Emergency Service due to fuel oil and gasoline aspiration in a three-year period were retrospectively analysed.

All cases were males and their average age was determined as 32,4±7.83 years. Three of the patients aspirated gasoline and 7 fuel oil. Blood gas values in all patients were at normal levels and their average white blood cell values were 16590. The most frequent symptom for referral to our service was shortness of breath. Infiltration was confirmed in the chest X-ray of 2 patients with aspirated fuel oil and all cases of gasoline aspiration. All patients received methylprednisolone and IV proton-pump inhibitors for treatment. Eight patients were given antibiotics. All victims were discharged from the hospital after recovery.

Aspiration of petroleum products which is normally rarely seen is witnessed more frequently in under developed countries. Since the findings determined by screening methods are often nonspecific, history is important for making a diagnosis.

Keywords: Gasoline, Fuel oil, Siphonage, Aspiration.

Introduction

Petroleum is a hydrocarbon component comprising of paraffin, olefin aromatics and acetylene.[1] Hydrocarbons are prevalently used indoors and industrial areas as solvents. It has a wide range of hydrogen and carbon component molecular structures and most of them are formed as a result of distillation of petroleum.[2] While the aspiration of petroleum products is seen accidentally in little children, it is also observed in adults who are employed in the petroleum sector and who swallow fire as a demonstration.[1,3]

In this study, 10 cases who aspirated fuel oil and gasoline while transferring them from the reservoir to the bins through siphonage method were presented and the literature was reviewed.

Method and Results

Ten cases admitted to Yuzuncu Yil University, Medicine Faculty, Emergency Service Department, with complaints of fuel oil and gasoline aspiration in three-year period, were retrospectively analysed by utilizing their emergency service records. Patients were evaluated in terms of their demographic properties, application complaints, examination findings, white blood cell and blood gas values, imaging and treatment methods and their outcomes.

Three (30 %) of the 10 cases evaluated aspirated gasoline and 7 (70 %) fuel oil. All of the cases were males with an average age of 32.4±7.83 years (range: 23-44 years). The patient's complaints, examination and chest X-ray findings are shown in Table, case 3 in whom infiltration was established in his computed thorax tomography is

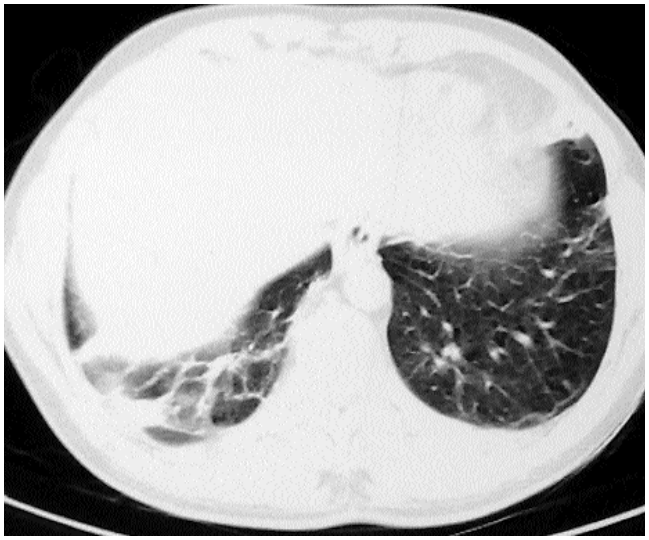

Figure: Image of infiltration in thorax tomography.

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Table: Clinical and radiological features of cases.

Case	Symptom	Signs	Chest radiograph	Substance
1	none	Normal	Normal	Fuel oil
2	Dyspnoea	Common rales	Normal	Fuel oil
3	Cough	Rare rales	?nfiltration	Gasoline
4	Dyspnoea, vomiting	Decreased breath sounds	?nfiltration	Gasoline
5	Chest pain	Normal	Normal	Fuel oil
6	Vomiting	Epigastric tenderness	?nfiltration	Fuel oil
7	Chest pain, hemoptysis, fever	Normal	?nfiltration	Fuel oil
8	Pyrozis	Epigastric tenderness	Normal	Fuel oil
9	Dyspnoea, chest pain	Common rales	?nfiltration	Gasoline
10	Cough	Normal	Normal	Fuel oil

shown in Figure. No pathology was determined apart from antral gastritis in an endoscopy carried out in one patient who swallowed some fuel oil together with fuel oil aspiration. White blood cell (WBC) and blood gasses were examined and found to be in normal limits. The average WBC values were confirmed as 16590±4325,23 mm3 (11200-22000).

All of the cases received iv 40 mg methylprednisolone and iv proton-pump inhibitor treatment. Eight cases were given antibiotic treatment. Moreover, 9 patients received nasal O2, expectorant syrup, steam postural drainage according to indications. The average hospital stay was 1.9±1.37 (ranges 0-4 days) days and they all were discharged from the hospital with full recovery.

Conclusion

The aspiration of petroleum products are normally rarely seen, however, it is more frequently encountered in less developed countries. The reason why there was only male population in the study can be explained by the fact that this business is male-dominant. Anamnesis was of great importance in the diagnosis since the findings determined by imaging methods were nonspecific. The toxicity of fuel oil was thought to be less as it had slight clinical and imaging symptoms compared to patients aspired gasoline.

References

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