

## **Diesel Oil Siphonage Induced Aspiration Pneumonitis: A simple way of prevention**

Neelima Singh\*\*, Makhija S.D\*, Vijay\*

### **ABSTRACT**

Siphonage of fuel from the automobile fuel tanks is a typical practice in our country. Data are rare on outcomes and complications of diesel oil aspiration following manual siphoning. The aim of this article is to create awareness regarding the dangerous practice of siphonage of liquid fuel usually hydrocarbons. A solution to prevent such risky practice is also being suggested to avoid accidental ingestion thereby leading to pulmonary complications that may range from mild to severe depending on the exposure. Within this report.

**Keywords:** diesel; pulmonary complications; siphonage

### **INTRODUCTION**

Diesel is a complex mixture of hydrocarbon used as liquid fuel in diesel engines. Highly volatile compounds with a low viscosity are more likely to be inhaled or aspirated into the respiratory system. Diesel oil aspiration can lead to severe chemical pneumonitis either due to direct inhalation of aerosol, aspiration of liquid or indirectly following aspiration of vomitus secondary to diesel oil ingestion during the oral siphoning from fuel tanks.<sup>1</sup> Pulmonary toxicity represents the most common complication of hydrocarbon ingestion and accounts for the majority of fatalities. Direct contact with alveolar membranes can lead to hemorrhage, hyperemia, edema, surfactant inactivation, leukocyte infiltration, and vascular thrombosis.<sup>2</sup> The result is poor oxygen exchange, atelectasis, and pneumonitis. Respiratory symptoms begin in the first few hours after exposure and usually resolve in 2-8 days.

### **CASE-REPORT**

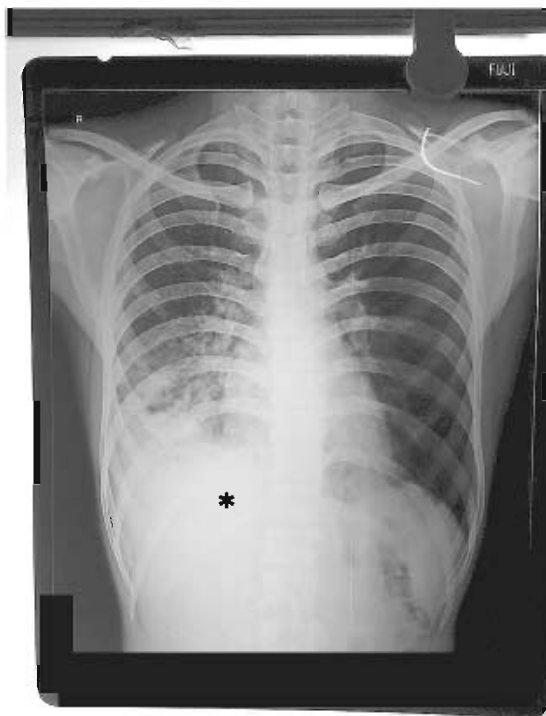
A 22 year old male tractor driver presented in outpatient department (OPD) with the complaints of breathlessness and right sided chest pain since two days. There was a history of accidental ingestion of about a mouthful of diesel oil while siphoning oil from fuel tank two days ago. The patient had several bouts of vomiting soon after accidental ingestion of diesel. On examination the patient was conscious and oriented and was hemodynamically stable with a pulse rate of 82/minute and a blood pressure of 120/80 mm Hg. However, the respiratory rate was 26/ minute. Auscultation of the chest revealed a normal shape and expansion of the chest with reduced breath sounds and occasional coarse crepitations at the right base. Skiagram of the chest showed small homogenous opacity with air bronchogram seen at the right lung base, partially obscuring the diaphragm suggestive of patchy pneumonitis (Fig-1). The patient refused to get admitted therefore he was prescribed antibiotics and anti-inflammatory medicines. The patient again presented after two days in emergency with similar complaints as he was not relieved. Repeat skiagram revealed lateral doming of right hemidiaphragm with haziness at right lower zone suggestive of sub-pulmonary effusion. A small area of patchy pneumonitis was still seen (Fig-2). As the amount of fluid was minimal, it could not be aspirated for testing. Biochemical investigations sent at the time of admission were unremarkable. The patient was managed with intravenous antibiotics, corticosteroids and supportives to which he responded well. Repeat skiagram four days following admission revealed near normal lungs following which he was discharged.

---

\*(Author for correspondence): Email-neelimajadon@yahoo.com

\*Department of Medicine, G.R.Medical College, Gwalior(M.P.)

**Fig 1 :** PA view of chest X-ray showing small homogenous opacity with air bronchogram at base of right lung (marked asterix)



**Fig 2 :** Showing right-sided localised area of patchy pneumonitis obscuring the diaphragm



## DISCUSSION

The patient presented initially with patchy pneumonitis and later developed subpulmonic effusion associated with diesel (hydrocarbon) poisoning. Evolution of clinical and radiographic changes requires discussion. Pneumonitis, pneumatocele, acute respiratory distress syndrome following accidental

ingestion have been reported.<sup>3</sup> The main hazard associated with diesel may arise following aspiration of vomitus secondary to ingestion or due to inhalation of aerosol during oral siphoning. Following aspiration of diesel hydrocarbon pneumonitis is a form of exogenous lipoid pneumonia where, aspirated diesel initiates an intense inflammatory reaction in the pulmonary parenchyma.<sup>4</sup>

In this case the patient had several bouts of vomiting following accidental oral siphonage of diesel followed by chest pain and breathlessness. The respiratory symptoms appeared in the first few hours after exposure and escalated over few days necessitating hospitalization following which the symptoms resolved with the treatment administered. The effusion was reactive and it regressed in a couple of days. The patient was discharged symptom free with significant radiological regression on day five, post admission. The course of illness from accidental ingestion to discharge from hospital spanned over a period of ten days. Cases with intentional ingestion, massive ingestion, symptomatic patients or vomiting following ingestion deserve admission for a full evaluation. All patients with intentional or accidental exposure to hydrocarbons should have skiagram of the chest.

By using simple measures like a suction syringe, drip sets for siphonage of liquid fuel many such complications can be prevented. Such life threatening situations can easily be prevented by adopting the indigenous process of fuel transfer using a set of suction syringe and flexible drain tubing. Public awareness needs to be generated by media, social or professional groups to prevent such exposures.

## CONCLUSION

People try to suck (siphon) fuel from an automobile tank using their mouth and a garden hose (or similar tube). This practice is very dangerous and is not advised. Instead, use of a suction syringe with a flexible tube for siphonage is a good option. Spreading awareness regarding the dangerous consequences of this rampant practice of siphonage is the need of the hour in order to prevent many such pulmonary complications.

## CONFLICTS OF INTEREST

Declared none

## REFERENCES

1. Khanna P, Devgan S.C. Arora, Shah .A. Hydrocarbon Pneumonitis Following Diesel Siphonage. *Indian J Chest Dis Allied Sci* 2004;46:129-132.
2. Prasad R, Karmakar S, Sodhi R, Karmakar S. Bilateral hemorrhagic pleural effusion due to kerosene aspiration *Lung India* 2011;28: 130–132.
3. Thalhammer GH1, Eber E, Zach MS. Pneumo-nitis and pneumatoceles following accidental hydrocarbon aspiration in children. *Wien Klin Wochenschr.* 2005;117: 150-3.
4. Venkatnarayan K, Madan K, Walia R, Kumar J, Jain D, Guleria R. "Diesel siphoner's lung": Exogenous lipoid pneumonia following hydrocarbon aspiration. *Lung India.* 2014;31:63-6.