Case Report

A Unique Case of Suicide by 'Manufactured' Carbon Monoxide Inhalation

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ABSTRACT

Carbon monoxide (CO) is a major component of fire due to incomplete combustion of carbon. Accidental deaths due to CO inhalation are common in many parts of the world in various situations and circumstances. Suicides by CO inhalation are more common in developed countries and are quite rare in India, possibly due to the popularity of other methods for committing suicide. In the case being reported, an engineering student surfed the internet for different ways to commit suicide due to a jilted love affair. He apparently decided on CO, and "manufactured" the gas by indigenous means, and inhaled it to commit suicide in a meticulous and planned manner. This case report provides details of the unusual and unique method adopted by the deceased to commit suicide, which is relatively rare in the Indian scenario. This case also serves to highlight the misuse and abuse of the internet, and is an indicator of changing trends of suicide in India due to globalization and information explosion.

Key Words: Carbon monoxide; CO; Suicide

INTRODUCTION

Carbon monoxide (CO) is a major and ubiquitous component of fires due to incomplete combustion of carbon. It is a colourless, odourless, tasteless and non-irritant gas.[1] Deaths due to accidental CO inhalation are quite common in many parts of the world in various situations and circumstances. Carbon monoxide produces an estimated 40,000 emergency department visits each year.[2] In India, accidental deaths due to CO inhalation are seen mainly in northern India, where the use of warmers, room heaters and *angeethis* (coal ovens), etc, are common to counter the cold during winter. In southern India use of these contraptions is rare, as the climate is mostly warm.

Suicides by CO inhalation are rare in India, and a planned suicide by manufacturing CO has so far not been reported in Indian literature. This may be due to the availability of other cheaper and easier methods to commit suicide. Moreover the general population is not aware of the properties and effects of carbon monoxide as a powerful and painless suicidal agent.

It is almost the converse in developed countries, where suicide by carbon monoxide inhalation is quite common. In 1961 alone, in the UK there were 2711 suicides and 1014 accidental deaths from CO exposure.[3] Suicides sourced CO to kill themselves from internal combustion engines. This may be due to the awareness regarding the source and efficacy of CO producing painless death. Since then the use of natural gas supplies have reduced considerably deaths from domestic CO. In India, the lay public is getting increasingly exposed to all kinds of information due to rapid globalization of information.

In the case being reported, an Engineering student (Computer Science) was in search of a painless method of committing suicide, as he was disappointed in a love affair. He searched many websites on the internet and finally settled on carbon monoxide inhalation. For this he meticulously prepared his rented room, by sealing off all the possible exits of the room and '*manufacturing*' the carbon monoxide by partial burning of coal and rags

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(which were moistened with a soft drink) which he inhaled after drinking alcohol.

The Case: A male Engineering student, 22 years of age resided in a rented room (upper floor) and was quite familiar to the owners of that building. One morning, the owner did not see this young man going to his college as was customary. He went upstairs to check, knocked on the door, but eliciting no response, even with repeated attempts by other family members, he notified the police who broke open the door, only to see the young man dead on a bed.

The scene of death was very unusual for the police, so they sought the help of the corresponding author of this paper. During preliminary investigations, eight (8) pages of a suicidal note were recovered, which described the plight of the deceased, his love disappointment, his search in the internet for suicidal avenues and how he executed the suicide plan.

The body of the young man dressed in a white T-shirt and shorts was lying on the bed in the prone position (**Fig 1**). A soft drink bottle, a bottle containing petrol, and a glass tumbler with some liquid, which had the odour of alcohol were present beside the bed. All the windows and doors were closed tightly. Gaps in the door and windows were plugged with bed sheets, plastic sheets, towels and a blanket (**Fig 2**). In one corner of the room was a make-shift oven, made of an iron stand with a metal bowl placed over it (**Fig 3**). The bowl contained charred, powdered coal and partially burnt rags, etc. A few partially burnt candles and match sticks were also present on a stool, which was by the side.

After the examination of the death scene, the body and suicidal notes, it was concluded that the deceased packed the room tightly, moistened the coal and rags with soft drink and set them on fire in the make-shift oven using petrol. He then retired to bed, wrote the suicidal notes while drinking alcohol, and slept off inhaling the gas, and died during sleep. The body was sent to our mortuary for postmortem examination.

RESULTS AND DISCUSSION

Postmortem Examination: There was no evidence of any external injury over the body. However, the conjunctivae, nail beds, ears, soles and palms appeared cherry pink in colour. Postmortem hypostasis (which was over the front of the body) was also cherry pink in colour. Small blisters, about 2 cm in diameter, were noted over both knees. Oral mucosa was also cherry pink in colour, as also muscles and other soft tissues. Airways were intact and congested. Lungs were congested with cherry pink blood oozing from the cut surfaces. Brain was oedematous with punctate haemorrhages in its white matter. Ten ml of blood was taken from the heart by using a syringe, placed in an air tight container and sent for toxicological analysis. About 150 gm of pectoral muscle from either side and 50 gm of spleen were collected, placed in an airtight container and sent to the forensic science laboratory for analysis. Spectroscopic examination done on the spot showed typical characteristic bands of carboxyhaemoglobin (COHb). Histology of the sampled organs revealed no significant pathology.

Fig 1: The scene of death

Fig 2: Sealed doors with sheets and towels

Fig 3: Makeshift oven with partially burnt coal and rags

Toxicological Analysis: Confirmed the presence of COHb, i.e., 64% (by gas chromatography) and 58 mg% of blood alcohol. On the basis of the scene of death, postmortem findings and toxicological report the cause of death was opined as 'asphyxia secondary to carbon monoxide inhalation' and the manner of death as 'suicide.'

Deaths from CO poisoning are usually suicidal or accidental.[4] CO is an odourless, colourless and non-irritant gas. It combines reversibly with oxygen carrying sites of the haemoglobin molecule with an affinity 200–300 times greater than oxygen to form carboxyhaemoglobin (COHb), which is not available for oxygen transportation.[5] This causes decreased oxygen carrying capacity of the blood resulting in chemical asphyxia and death due to anoxia.

The onset of autumn and cooler weather traditionally heralds the start of another season in the northern hemisphere – the peak incidence of unintentional deaths from CO.[6] Accidental deaths due to CO inhalation are common worldwide in fire accidents, due to usage of faulty furnaces, water heaters (LPG gas water heaters), ovens, etc. In India, accidental deaths do occur in colder parts of the country where people use warmers, room heaters, '*angeethis*' (coal ovens), etc, to keep themselves warm during winter and rainy seasons, sometimes falling asleep in confined spaces leading to accidental CO inhalation and death.

Suicide by CO inhalation is quite rare in India, which may be due to lack of public knowledge regarding the properties of CO. It may also be due to the popularity of many other cheaper, easier methods for committing suicide.

One of the common methods of suicide in developed countries, however, is by carbon monoxide inhalation via car exhaust, etc.

In the case reported here, a student ended his life in an unusual fashion by using (abusing?) internet information. He succeeded in 'manufacturing' carbon monoxide by using coal, rags, etc, in a makeshift oven in an indigenous way and plugged all the possible exits. He also consumed alcohol probably because he had learnt that ethanol tended to aggravate the COHb saturation levels required to produce death.[7]

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