AUTOPSY DETECTION OF NITROBENZENE POISONING: A PLANT ENERGIZER

[1]Akhilesh K. Pathak

[1]Associate Professor, Department of Forensic Medicine & Toxicology, SSG Hospital & Medical College, Baroda, Gujarat, India.

ABSTRACT

We herein present an autopsy case of death due to suicidal ingestion of plant energizer liquid. The victim was a 35 year old male who died due to suicidal consumption of a liquid, which is commonly used for the purpose to enhance the growth of vegetable and fruit crops in India. Clinical findings of persistent cyanosis without having any other cause, circumstances of death with autopsy findings in the form of characteristic smell of poison from the gastric contents and chocolate brown tinted blood was suggesting the probability of death due to severe methemoglobinemia caused by consumption of poison and toxicological analysis of the viscera of autopsy confirmed the presence of Nitrobenzene poison.

Key-words: Poisoning, Autopsy, Nitrobenzene, Plant energizer, Methemoglobinemia.

Corresponding Author: Dr. Akhilesh K. Pathak, Associate Professor, Department of Forensic Medicine & Toxicology, SSG Hospital & Medical College, Baroda, Gujarat, India. Mail: dr.akhilesh_pathak@yahoo.co.in

INTRODUCTION

India is an agricultural country and the use of various plant energizers is common to promote the growth and development of vegetable and fruit crops. Nitrobenzene (Oil of Mirbane) is highly toxic and exposure to the population living in the vicinity of its industrial sources can result from the releases to air and wastewater from industrial sources. Due to easy availability misuses of these compounds to commit suicide by the individuals are also not uncommon. First report of nitrobenzene poisoning was published in 1861 and subsequent cases followed.[1,2] In India, a case of fatal methemoglobinemia due to Nitrobenzene poisoning has been reported by Gupta et al,[3] and at China twenty two cases of contact dermatitis by nitrobenzyl chloride compound has been studied by Yan and Zhou.[4] Small amount of exposure to Nitrobenzene poisoning causes, symptoms and signs of nausea, vomiting, prostration, intense gray blue cyanosis and breathlessness but exposure to excessive dosage may cause lethal symptoms of convulsions, coma and death.[5] The various

cases of ingestion of Nitrobenzene and death have been reported by various authors, but the death due to ingestion of Nitrobenzene in the form of plant energizer is less discussed.

CASE HISTORY

A 35-year-old male patient was admitted in our hospital with an alleged history of consumption of a plant energizer poison followed by vomiting. The patient was having acute breathlessness, frothing and cyanosis with altered sensorium. His pulse rate was 60/min and blood pressure was 90/60 mmHg and respiratory rate was 30/min. Other systemic examinations were normal. His oxygen saturation was 6 liters/min oxygen through the mask was 70-75% and was not improving even after giving him 100% oxygen. The patient expired after 1 hour of hospital admission. The medico legal autopsy was conducted and we found that the deceased was having frothing from the nostrils and mouth with cyanosis of nails and heavy congestion of the face. There were no other significant external findings, while internally the stomach contained about 200 ml oily yellowish liquid having unusual offensive almond like smell, which was also coming out from the contents of the small intestine. Respiratory tracts were having frothy mucoid fluid and both lungs were congested and edematous (left lung, 540 Gm; right lung, 610 Gm). The heart including coronaries were normal and contained approximately 250 ml of chocolate-brown tinted blood. The brain was congested and not showing any other macroscopic abnormalities.

In the present case, a plastic bottle of plant energizer was also recovered from the scene of crime by investigative agency and the next day it was brought to us for the examination, which was containing a pale yellow oily liquid and was having unusual offensive almond like smell similar to stomach contents. During the autopsy, the routine samples of the viscera were sent to the toxicological analysis with the plastic container, which was recovered from the scene of crime. The organ samples from the brain, both lungs, kidneys, liver and spleen were sent to the histopathological examination. The reports of histopathological examination were showing non-significant findings of congestion. The toxicology analysis confirmed the presence of Nitrobenzene in stomach and intestinal contents, blood and other viscera of the autopsy, which was also found in plastic container recovered from the scene of crime. The cause of death was concluded as Nitrobenzene poisoning.

DISCUSSION

Nitrobenzene is a yellowish, oily aromatic compound, which is having an almond like odor. It is commonly used in the manufacture of aniline, lubricant oils, dyes, drugs, pesticides and synthetic rubber. Its agricultural use in the form of plant energizer is also widely valued and hence commonly used in India for promoting the growth and development of vegetable crops, fruit crops and floriculture. Intoxication can

be there by various routes and the fatal dose is reported from 1gm-10gm by different authors.[6,7]

In the present case, deceased consumed a large amount of the plant energizer and died due to methaemoglobinemia caused by Nitrobenzene poisoning. Similar kind of case was reported by Martínez et al[8] who found severe methemoglobinemia in a case of acute nitrobenzene poisoning. During the autopsy, respiratory tract was found clear except slight frothing and microscopy of the heart and other viscera were also not significant. Clinical findings of persistant cyanosis without having any other cause, circumstances of death with the recovery of the container from the scene of crime and autopsy findings in the form of characteristic smell of poison from the gastric content and plastic container and chocolate brown tinted blood was suggesting the death due to methaemoglobinemia caused by consumption of poison, which was confirmed Nitrobenzene in the toxicological reports.

CONCLUSION

The case presented here is an uncommon poisoning death caused due to ingestion of plant energizer, which was confirmed death due Nitrobenzene poisoning by autopsy examination. Early diagnosis and appropriate management with supportive therapy can be helpful in reducing the mortality in such kind of fatal poisoning.

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