

Suffocation Caused by Plastic Bag Covering the Face Combined with Cotton Wool Containing Premium Gasoline: A Forensic Pathology Case Report

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ABSTRACT--Every unwitnessed death should be suspected as unnatural death, mainly if the body was found in unusual conditions. When the investigator found an unnatural death case, the investigator will ask for the help of a forensic pathologist to examine the deceased and to determine the cause of death and the mechanism of death, according to article 133 of the Criminal Procedure Code. In this case report, we present an unusual death using a plastic bag covering the face combined with premium gasoline. A man was found dead in his bed with a face covered with plastic grocery bags. In that plastic bag, there was cotton wool soaked with gasoline. On external examination, petechial hemorrhages, facial congestion, and cyanosis were found. On internal investigation, lungs, congestion, and petechial hemorrhages in the kidney and brain were found. Clinical examination reveals dilatation of renal blood vessels containing blood. Premium gasoline was detected in the cotton wool. Any drugs and poisons could not be detected in the blood sample, urine neither in the gall bladder. The cause of death was assumed to be suffocation caused by a plastic bag covering the face. The mechanism of death was asphyxia due to plastic bag suffocation.

Keywords: gasoline, plastic bag, suffocation, cotton wool

I. INTRODUCTION

Every unwitnessed death should be suspected as unnatural death, especially if the body was found in unusual conditions. When the investigator found an unnatural death case, the investigator will ask for the help of a forensic pathologist to examine the deceased and to determine the cause of death and the mechanism of death. Forensic pathologist conducts a forensic examination and then pour it into valid evidence in the form of a letter. Examination of dead person injury and/or an autopsy based on article 133 of the Criminal Procedure Code. An autopsy for unnatural death is absolute to determine the cause of death. In article 134 of the Criminal Procedure Code, the investigator is only obliged to inform the family of the victim, not to ask for permission.

In this case report, we present unusual suffocation caused by plastic bags covering the face combined with premium gasoline.

Suffocation is a the term used to indicate death from deprivation of oxygen, either from lack of the gas in a breathable environment or form obstruction of the external air passages.[2] on the other hand, smothering is a form of violent mechanical asphyxia death caused by closing the external respiratory orifices by hands or by other means. Fatal accidental or homicidal smothering is commonly reported in cases of newborn babies and infants. It is uncommon in cases of a normal healthy adult, though in a few instances old people, weak adults, epileptic or persons comatose from drink or drugs may be smothered.[1]

Asphyxia etymologically means 'absence of pulsation' in usual it refers to 'lack of oxygen.' The basic purpose of respiration is to convey atmospheric oxygen to the peripheral tissue cells. Anything that interferes with oxygen transfer can be called asphyxia.[2].

Asphyxia by smothering caused by the mechanical obstruction or occlusion of the external airways, nose, and mouth. Deaths such as these are usually either homicide or suicide, a very rare accident. Suicidal smothering is usually found using plastic bags.[4] Plastic bag suffocation increasingly common form of suicide in Britain. It may also be homicide or accidental.[2].

In this case report, we present unusual suffocation caused by plastic bags covering the face combined with premium gasoline.

II. CASE REPORT

On 7th November 2019, a dead body of a 27-year-old man was referred to the Forensic Medicine and Medico-legal Department of Dr. Soetomo General Hospital for post mortem examination with an alleged history of found dead in his bedroom which his face was covered with a plastic bag. Along with the body arrived a Post Mortem Examination Request Letter. Then the external examination and internal examination (autopsy) were conducted at 05.17 PM.

External examination reveals that the age between 25-30 years, body weight 90 kg, body length 170 cm, yellow

skin color, nutritional status overweight. The deceased wear a T-shirt and short pants, all the clothes clean and well attached to the body. The face covered with a plastic grocery bag secured with a rubber band from the chin to the crown of the head. In that plastic bag, there was cotton wool soaked with gasoline. Post mortem lividity was reddish-purple in color and fixed on the neck, shoulder, back, buttocks, and the backside of the thigh. Rigor mortis was apparently fully developed in the whole body. No signs of decay were found.

Head wrapped in a white plastic bag with the open side facing back and tied with an orange rubber band on the face. The rubber band encircles the face for 72 cm in length, from 2 cm behind the chin up to 2 cm in front of the right ear to the top of the head 19 cm behind the front hairline, to 2.5 cm in front of the left ear back down the chin. After the rubber was released, it was found abrasions in the form of a rubber band groove, starting from 1.5 cm in front of the right ear hole through the chin 1.7 cm behind the chin to 2 cm in front of the left ear hole, measurement 32 cm in length by 0.2 cm in width and 0.2 cm in depth.

Bluish discoloration of cyanosis was present on all nail beds and fingers, mouth, lips, gum, including the face. The mucous membranes of the upper and lower eyelids appear reddish. Petechial hemorrhages appear on the inside of the eyelids, in the white of the eyes and in the mouth. Yellowish secretion was found in the nose, and frothy secretion was found in the mouth. The face that covered by plastic bag looks wet and moisture.

Bruise present on the inside of the upper lip. Abrasion present on the upper arm and behind the knee. Ejaculate discharge was found on the urethra orificial.

Internal examination reveals lung congestion, petechial hemorrhages in the kidney and brain, dilation of blood vessels in the brain (congestion). Mucous, like secretion, was found in trachea and bronchi. Blood staining was found on the left side and right side of the skull (temporal occipitalis) blackish-red discoloration.

Clinical examination reveals dilatation of renal blood vessels containing blood, lungs autolysis, and blood spot in the temporal, occipital muscle.

Premium gasoline was detected in the cotton wool. Any drugs and poisons could not be detected in the blood sample, urine neither in the gall bladder.

III. FINDINGS AND DISCUSSION

Suffocation refers to a death caused by the reduction of the oxygen concentration in the respired atmosphere. Suffocation is the term used to indicate death from deprivation of oxygen, either from lack of the gas in a breathable environment or from obstruction of the external air passages.[2] Plastic bag suffocation increasingly common forms of suicide may also be homicidal or accidental in any type. The essential mechanism of plastic

bag suffocation is a hood of impervious substance is placed over the head down to the neck.[2] In the present case, the plastic bag has covered the face, including the mouth and nose.

Plastic bag suffocation can be rapid and leave no signs. At autopsy, the case can be difficult unless the bag is still present. When the bag is still in place, a search for other indications must be made. If smothering is suspected, the local sign must be sought to try to pressure the face substantially.[2][3][4] In the present case, the plastic bag was still in place, and the rubber band groove indicates that the rubber band was attached while the deceased is still alive. Moisture seen inside the bag indicates that it was put on during the life, the water being from respiration.[2].

Suffocation is a type of mechanical asphyxia. The diagnosis of asphyxia death was made by reference to a set of findings known as the classic sign of asphyxia: petechial hemorrhages, congestion, and cyanosis.[2]

An L Perez Martines (1993) review 23 cases of plastic bag suffocation, on the external and internal findings did not reveal any specific that was pathognomonic of asphyxia by plastic bag suffocation.[5]. Another study by Paula Santoro (2019) review 25 papers related to plastic bag suffocation found that no specific signs on external and internal examination. On external examination, the forensic pathologist may find cyanotic coloration, hemorrhagic petechiae, especially subconjunctival, and froth around nostrils and mouth. Classic asphyxia autopsy finding.[8]. In the present case classic sign of asphyxia was found: petechial hemorrhagic on eyelids and in the mouth along with petechial hemorrhagic in the brain and both kidney; cyanosis on all nail beds and fingers, mouth, lips, gum including the face; lung congestion and dilatation of blood vessel in the brain.

Plastic bag asphyxia derives from a combination of oxygen depletion, and the increase of carbon dioxide concentration leads to loss of consciousness rapidly.[8].

Toxicology should always be part of the investigation of unnatural death. Premium gasoline was detected in the cotton wools. Any drugs and poisons could not be detected in the blood sample, urine neither in the gall bladder.

Gasoline levels that can kill people are about 10.000-20.000 ppm when breathed in and about 12 ounces when swallowed. Breathing in high levels of gasoline may harm the nervous system. Less severe effects include dizziness and headache, while a more severe impact includes coma to an inability to breathe.[6]. Inhalation of gasoline caused the euphoric effect, range from light headache and mild confusion to a psychosis-like state.[7].

The estimation of death or Post Mortem Interval is between 8 until 18 hours from the external examination. The cause of death determined as suffocation by plastic bag covering the face causing asphyxia.

IV. CONCLUSION

The cause of death determined as suffocation caused by the plastic bag covering the face. The mechanism of death was asphyxia due to suffocation.

REFERENCES

- [1] OGambhirSingh, "Fatal Accidental Smothering: A Case Report" 2011. J Punjab Acad Forensic Med Toxicol 2011; 11(1)
- [2] Pekka Saukko, Bernard Knight, "Suffocation and 'Asphyxia'" Forensic Pathology Fourth Edition pp. 353-368, 2016.
- [3] George Paul, Satish K Verma, "Asphyxia," Review of Forensic Medicine and Toxicology Third Edition. pp 160-185, 2015
- [4] Seon Jung Jang, et al., "Death by Homicidal Smothering Using Hot Steam Towel: A Case Report," available online at <http://www.kjlm.or.kr>
- [5] A L Perez Martinez, et al., "Plastic Bag Suffocation" in Med. Sci. Law (1993) Vol. 33, No. 1
- [6] U.S. Department of Health and Human Services, "Toxicology Profile for Gasoline." 1995
- [7] Elisabeth Reese and Renata D. Kimbrough, "Acute Toxicity of Gasoline and Some Additives," Environmental Health Perspectives Supplements 101 (Suppl.6): 115-131, 1993
- [8] Paola Santaro, et al., "The Forensic Approach to Plastic Bag Suffocation: Case Report and Review of the Literature," Medico-Legal Journal 0(0) 1-7, 2019