

CASE REPORT**PATHOLOGY/BIOLOGY**

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A Case of Suicidal Suffocation Simulating Homicide

ABSTRACT: This case concerns an unusual suicidal plastic bag suffocation. An elderly white man was found dead and partially disrobed in his apartment lying supine on a sofa with a plastic bag closed by a rope over the head and the upper and lower extremities tightly tied with two other ropes, the end of both arranged into slipknots (self-rescue mechanism). Police investigations found no pornography in the apartment, and circumstantial data alleged no psychiatric disorders or suicidal intentions. The autopsy excluded signs of struggle and sexual intercourse as well as any type of injury or physical illness. Chemical analyses on the peripheral blood excluded acute drugs and/or alcohol intoxication. A differential diagnosis of the manner of death was performed, including scenarios of accidental autoerotic asphyxiation, homicide during either sexual activity or ritualistic, elderly suicide. The collected data most strongly supported the hypothesis of a suicidal asphyxiation simulating homicide to devolve a life insurance to the victim's sons because of economic difficulties.

KEYWORDS: forensic science, autopsy, plastic bag, asphyxia, autoerotic, elderly, suicide

Death caused by plastic bag suffocation (PBS), which was thoroughly described shortly after plastic wrapping materials came into widespread use (1), remains uncommon, although some authors have reported an increasing temporal trend in recent years (2). The great majority of deaths from PBS are related to suicide attempts by elderly people or mentally ill patients (3), often carried out in combination with the use of sedative drugs (4,5) and sometimes with toxic gas inhalation (6–10).

A number of accidental deaths involving infants have been reported (11,12); the plastic bags were sometimes used to induce asphyxia by oxygen exclusion during autoerotic activity or hetero- or homosexual intercourse (13–15). In this paper, we report a case of death involving the use of a plastic bag and of a complex tying device involving both the neck and the extremities.

Case Report

A white 61-year-old divorced man was found dead in his apartment by his maid. The front door showed no signs of having been forced, the rooms were tidy, and there were no apparent signs to support the hypothesis of an attack. The deceased was found partially disrobed (trousers and underwear partially pulled down at the back) lying in a supine position on a sofa (Fig. 1). No pornography was found in the apartment. A drinking glass containing an alcoholic beverage (wine) was on the table by the sofa, and the TV set was on.

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Received 22 Feb. 2010; and in revised form 20 April 2010; accepted 2 May 2010.

An opaque green polyethylene plastic bag was found over the head of the deceased and a medium diameter (5 mm) rope loosely encircled his neck. The rope was tied (not enough air for respiration could pass) into a regular knot around the anterior region of the neck, 5 cm above the jugular notch, just below the hyoid bone. No protective objects were found under the ligature around the neck.

The deceased had his arms behind his back, and his wrists, tied with a 125-cm-long beige rope, were approximately 25 cm apart (Fig. 2). One end of the rope was arranged into a slipknot around his right wrist, whereas the other end was tightly tied in a double loop and fixed with a regular knot on the left wrist. There was another loop directly connected to the slipknot around the first finger of the right hand: pulling of the loop, by moving the finger either forward or backward, caused the tightening of the knot (Fig. 3).

The lower extremities presented a similar apparatus, the ankles being held together by a single rope with the left end tied into a regular knot and the right one into a slipknot. Rigor was present and advanced, and hypostasis was very clear, wine-red, and localized on the back. The body was at room temperature.

Neither the body nor the scene exhibited signs of a struggle. During the investigation activity, a rope with similar characteristics to the one tied to the body was found in the kitchen, and a copy of a life insurance policy was in plain sight in an open bedroom drawer. The deceased was a normally developed man, 174 cm tall, with a body weight of 72 kg.

The autopsy showed nonspecific signs of death, also resulting from asphyxiation. A mild cyanosis was observed in the face, in the upper anterior area of the chest and in the vascular bed of the fingers and toes. Petechial hemorrhages of the conjunctivae were present, and bloody mucus was also present in the nostrils and mouth. No ejaculate was observed, and the deceased anus was



FIG. 1—At the scene, the deceased lying in a supine position on a sofa.



FIG. 2—The plastic bag over the head of the deceased with the rope around the neck fixed into a regular knot.

found to be slightly enlarged without chronic changes referring to homosexual activity. Oral and rectal swabs as well as peripheral blood samples, urine, and gastric content were then collected during autopsy for genetic and chemical analyses. No external evidence of recent injuries, especially defensive ones, was detected; no needle puncture sites or tracks were identified.

The internal examination and histological data revealed no pathognomonic signs such as diffuse swelling and the congestion of the brain with petechial hemorrhages within the galea aponeurotica and white matter; massive congestion of the organs; diffuse hematic suffusion beneath the serosal surface of the pleurae and of the pericardium; or pulmonary congestion and edema.

The dissection of the neck area showed no hematic infiltration of the anterior wall muscles, no injuries to the soft tissues surrounding the trachea and larynx, and no fracture of the thyroid cartilage and of the horns of the hyoid bone. No gross anatomic evidence of natural diseases was found.

The laboratory's search for semen elements in the collected (oral and rectal) swabs failed to reveal any elements compatible with



FIG. 3—The deceased's arms behind his back with the rope around the wrists.

spermatozoa; the DNA profile was of the deceased only. The toxicological analysis of peripheral blood, urine, and gastric content was performed, and the results showed a 0.08 g/L ethanol blood concentration with no signs of drug ingestion.

Discussion

In the management of asphyxial death cases, the main difficulty for forensic pathologists is the diagnosis, which has to be based on exclusion criteria overall when the mechanism of death is oxygen depletion. Indeed, nonspecific signs, such as petechial hemorrhages (16), facial congestion, edema, and cyanosis are common autopsy findings (17). Thus, in the vast majority of cases, the proper and integrated use of all available data can lead to the formulation of a reasonable hypothesis regarding the cause of death.

A plastic bag covering the head and tied, even loosely, around the neck creates an airtight space in which breathing leads to the rapid exhaustion of the limited oxygen supply (18,19). In this case, although the cause of death was from oxygen deprivation considering the absence of other evidence, several different scenarios about the manner of death were taken into account by the investigators.

Given that the body was found partially disrobed, death occurring during sexual activity was first evaluated, although the deceased showed no signs of sexual intercourse (17). Among the possible scenarios related to sexual activity, the *autoerotic fatality hypothesis* was immediately tested for several reasons.

Some features common to autoerotic asphyxiation, as reported by Uva (20), were observed at the scene of death. The victim was partially naked; binding devices were arranged so that compression of the neck could have been produced voluntarily; the extremities were bound with ropes.

Although some of these data seemed to favor the autoerotic fatality hypothesis, other important features, according to Hazelwood et al. (13), were absent or inconsistent. First, the deceased was in an age range (60s) in which the occurrence of autoerotic asphyxia is rare (two cases observed in a total of 132 fatalities; 1.5%). Second, suspension is the method most frequently used to produce asphyxia, whereas the use of plastic bags is rather uncommon (five cases of 157 investigated fatalities; 3.2%). Furthermore, no pornographic material was found at the scene, no unusual attire or devices able to induce either simulated or real pain were present, no protection was taken against the rope-induced bruises, no

evidence of repetitive behavior was detected, and no photograph or video cameras were found. Finally, the position of the hands strictly tied together behind the back and the absence of the exposure of the genital organ made masturbation activity impossible.

By contrast, Hazelwood et al. (13) state that "some living practitioners of autoerotic asphyxia have reported that they did not manually masturbate while asphyxiating themselves but rather used asphyxiation to arouse themselves sexually, after which they would manually masturbate" (p. 139). For these reasons, this hypothesis was taken into account for the final interpretation.

The *homicidal hypothesis* included three different scenarios. The first one was the murder of the victim during sexual intercourse. The second was related to a ritualistic homicide, frequently observed in southern Italy (the so-called *incaprettamento* that identifies the means employed by shepherds to keep sheep still). This is a simulation of an autoerotic activity often used by mafia killers to cover a generic homicide by a self-strangulation device and possibly by the inhalation of anesthetic agents or of some other toxic gas causing cardiac arrhythmias or a depression of respiration (21,22).

Specifically, the victim is tied with a single rope that extends from the lower extremities to the neck and ends in a slipknot; the lower extremities are kept in a bent position (90°), whereas the upper ones are tied behind the thorax; as the body is bound by the rope, each movement causes the knot to tighten.

Generally, individuals tied in this manner are restrained in an airtight space (e.g., in a car trunk) so as to be sure that, even if the victim manages to remain absolutely still, the progressive oxygen exhaustion forces them into some inadvertent hypoxia-induced movements and subsequently to self-strangulation.

But in our case, there were no observed signs of sexual activity or signs of struggle both on the body or at the scene, or of toxic agents in the blood samples (23,24). Furthermore, there was no evidence of the victim's connection with criminal organizations, and the extremities and neck were tied separately. Hence, the homicidal hypothesis, either generic or ritualistic, was ruled out.

Suicide using a plastic bag was the *last tested hypothesis*. PBS is a well-known suicide method (25), and it is used more frequently, compared with other methods, by individuals older than 50 years old, especially if seriously ill (5).

In this case, as anticipated, the diagnosis was based mainly on the exclusion of other manners of death. The deceased was indoors, at home. A single bag was used with a loose fastening without external and internal marks on the neck, even though insufficient air for respiration could pass; the rest of the body was well preserved. All these elements increased the likelihood of suicide.

Nevertheless, no suicide note was found, and no voiced suicidal intentions were known. Based on the reports of the investigators, the man was physically and mentally healthy; furthermore, the autopsy excluded physical illness.

By contrast, a life insurance policy, whose beneficiaries were the sons of the deceased, was left in a place where it could be easily found. The policy had an exclusion clause for suicide, whereas either accidental or homicidal events were contemplated. Furthermore, interviews by the investigators revealed that the deceased was facing large economic difficulties.

The complex bondage device was, therefore, thought to be an attempt to intentionally disguise the suicide as either an asphyxial

autoerotic fatality or a murder so that the insurance company would have to pay death benefits to the sons of the deceased. The forensic conclusion was finally a plastic bag asphyxial suicide-simulating homicide.

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