

## CASE REPORT

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# Asphyxiation by Occlusion of Nose and Mouth by Duct Tape: Two Unusual Suicides

**ABSTRACT:** The most recent U.S. statistics (2005) determined that 22.2% of suicides are by suffocation. This number likely includes suicidal hanging. Based on previous reports the majority of nonhanging suicidal asphyxiations are accomplished by securing a plastic bag over the head. We report two instances of a far less common method of suicidal asphyxiation, occlusion of the nose and mouth by duct tape. One was a 47-year-old man with a history of paranoid schizophrenia with suicidal ideation and the other was a 52-year-old man who was depressed due to gambling debts. The value of scene investigation, including review of available video surveillance to determine the manner of death is highlighted.

**KEYWORDS:** forensic science, asphyxiation, suicide, duct tape, airway occlusion, forensic pathology

The U.S. National Vital Statistics Report documented 32,637 suicides in the United States for the year 2005, of which 7248 (22.2%) were due to suffocation; the mode was not specified, but in all likelihood included cases of hanging (1). A published report from *New York City* in 1993 showed that over a 2-year period 41 suicide deaths out of 1335 (3%) were due to asphyxiation, all by plastic bags being placed over the head (2). Here, we report on two unusual suicides accomplished by occluding the upper airways with duct tape. There have been few similar reports. One clearly described the use of duct tape (3). The others were attributed to packing tape and a "rubber adhesive band" (4,5). The cause of death in our cases cannot be disputed. However, the manner of death had to be clearly established based primarily on thorough scene investigations.

## Case Reports

### Case 1

A 47-year-old white man with a clinical diagnosis of paranoid schizophrenia with suicidal ideation was found dead by his mother in their basement. Prior to calling for assistance, she removed duct tape that was adherent to his face. Duct tape had been cut into strips and applied in layers over the nose and mouth like a mask (Fig. 1). The tape was not wrapped circumferentially around the head. The decedent's hands were loosely tied behind his back with thin rope that had two slip knots. Several suicide notes were found at the scene. An area of blanching of the face extended from the alae nasi to the chin and incorporated the nares and mouth (Fig. 2). There was an associated, sticky, gray material consistent with duct tape adhesive. The only gross pathological finding at autopsy was cardiac hypertrophy (heart weighed 500 g). Histologic evaluation was not performed. There were no petechiae. His blood contained therapeutic concentrations of diphenhydramine, olanzapine, and lorazepam. His death was attributed to asphyxia due to occlusion of his nose and mouth by duct tape.

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### Case 2

A 52-year-old white man was found dead in the bathroom of a hotel room. He had checked in the previous afternoon, but had left and spent the night with his girlfriend at her residence. The hotel video surveillance showed that he returned in the morning with duct tape wrapped around his hand. He left his room and returned twice more, each time alone.

He was discovered by the hotel housekeeper, who found him on the bathroom floor with his feet obstructing the door. He had duct tape tightly wrapped around his face and head, occluding his eyes, nose and mouth (Fig. 3). He was not bound in any other way. The room was not in disarray.

At autopsy, the tape was removed and a corresponding area of skin blanching was observed (Fig. 4). There were no petechiae of the face or eyes. Other gross findings included marked coronary artery stenosis and cardiac hypertrophy (heart weight 610 g). Tissues were not examined microscopically. Blood toxicology was negative. A family member stated that the deceased had a problem with gambling and that he was depressed. His death was attributed to asphyxia due to occlusion of the nose and mouth by duct tape.

## Discussion

Adhesive masking tape has been available since the 1920s. Duct tape was developed during World War II as a waterproof sealing tape for ammunition cases. It is manufactured from polyethylene-coated cloth with a rubber adhesive and has numerous industrial and household uses. It has tensile strength of 29 lb/in width and when adherent to itself is difficult to separate.

In 1962, Hunt and Camps (6) reported three asphyxial suicides by covering the head with plastic bags and a sheet. This method of asphyxiation was advocated by Derek Humphrey (7) in his book *Final Exit* which was first published in 1991. Marzuk et al. found a substantial increase in the number of asphyxial suicides by use of plastic bags subsequent to the publication of Humphrey's book. The year before the book was published only 1.2% of suicides in New York City were by asphyxiation, all by plastic bag. Following the publication of the book, asphyxiation by plastic bag increased to 5%.

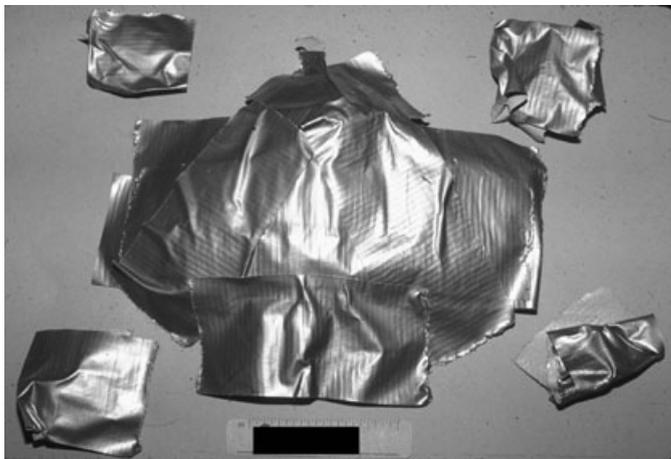


FIG. 1—Strips of duct tape fashioned into a mask to cover the nose and mouth. The scale is in inches.



FIG. 2—Profile of the deceased in case 1, there is blanching of the skin from the nose to the chin. Approximately 2 inches anterior to the tragus is a linear area of duct tape adhesive adherent to the face. The scale is in inches.



FIG. 3—Decedent in case 2 showing duct tape wrapped around his head, occluding his airways.



FIG. 4—Deceased in case 2 following removal of the duct tape. There is blanching of the skin below the duct tape.

In 1993, Avis (3) reported an asphyxial death due to airway obstruction by duct tape: the death was classified as a suicide. Di Vella et al. (4) reported a case of suicidal smothering in a man who had wrapped adhesive packing tape around his head to occlude his nose and mouth. Turillazzi et al. (5) reported on a double homicide (children) and suicide (parent) accomplished by wrapping what they variously described as “gray rubber adhesive band,” “adhesive packing tape,” “elastic tape,” and “adhesive gummed tape” which based on their photographs was in all likelihood what we call “duct tape” in the U.S.A. around the head and neck with occlusion of the nose and mouth with resulting asphyxiation as well as neck compression with strangulation.

In two of the previous reports, scleral (4), facial, oral mucosal, and conjunctival petechiae (5) were described. In our case and the one reported by Avis (3) there were no petechial hemorrhages. This is not unexpected. Ely and Hirsch (8) in a review of the literature concluded that “petechiae of the head are the product of purely mechanical vascular phenomena: namely, impaired or obstructed venous return in the presence of continued arterial input” and that “no relationship exists between the development of petechiae and the presence or absence of asphyxia.” The petechial hemorrhages seen in the cases described by Turillazzi et al. (5) are more consistent with being caused by the associated “strangulation by multiple loops of adhesive gummed tape” in their three cases.

In our first case, duct tape was placed over the airway openings in the fashion of a mask which could be removed easily, making it more consistent with a suicidal asphyxiation. We believe the hands were loosely secured (in a manner he could have done himself) to prevent him from removing the mask in order to accomplish his task. In our second case, duct tape was tightly wrapped around the head occluding the airways. The tape was wrapped in a manner which could have been accomplished by the victim himself and yet would have been very difficult for him to remove. The hotel video surveillance footage established that the victim brought the duct tape to the room and that no other person was present. Therefore, the manner of death was determined to be suicide.

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