Accidental hangings. Report of two cases

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Abstract: We report two interesting cases of accidental death due to hanging, in two adult men. Both of the corpses have been found outdoors. In the first case, a 40 years old man, death was determined by an association of mechanical asphyxia due to hanging by the collar of the shirt that he was wearing, and positional asphyxia; postmortem toxicological analysis of alcohol levels in blood and urine revealed a concentration of 3.10 mg/ml and 2.45 mg/ml, respectively. The second case presented is a 60 years old man who died from hanging by a handle of a textile travel bag; toxicological results were negative.

Key words: hanging, positional asphyxia, suicide, accident, mediastinal hydatid cyst

Assessing the manner of death, whether it is suicide or accident, is not always easy. If not proved otherwise, most of the times hanging is considered as suicide. The cases reported in this article point up that besides a careful autopsy, circumstantial history of the case and on-scene forensic examination of the corpse are also very important.

Case reports

Case 1

In June 2009, a 40 years old man was found dead at 7:00 a.m. at the outside corner of the front yard of his house, being hanged with the short-sleeve shirt that he was wearing; the back of the collar of the shirt was fixed on the top of the iron fence (the fence having a height of 2.10 meters), the body being suspended by the axillary and anterior cervical regions (Fig. 1). Both legs of the deceased were touching the ground, and the knees were in a semi-flexed position. Both of the upper limbs were raised in a prone position at a 45 degree angle with the rest of the body. On-scene external examination of the body revealed that rigor mortis was not fully developed. The distribution areas of lividity were on the upper limbs (forearms and hands), on the hypogastric region above the belt of the pants and circumferentially on the lower limbs. The head was cyanotic, with protruded tongue.

Investigation revealed that in the morning he went to work. His colleagues told him to go back home, because he was drunk; he returned back home alone. Because the front yard door was locked and the deceased left home without the keys of the house, the investigators concluded that

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when he returned back home, he tried to climb an iron fence located at the outside corner of the yard in order to jump the front yard fence. A neighbour found him dead in the position described above.

*Autopsy findings*

External examination of the body revealed the presence of petechial hemorrhages within the area of lividity. The furrow was located at the upper part of the anterior, right and left lateral neck regions, oriented obliquely upwards towards the lateral regions of the neck; it had a brown-reddish parchmentised groove, 20 cm length, 0.5 cm width and 0.5 cm maximal depth on the anterior neck region, progressively decreasing towards the laterocervical regions, interrupted at the posterior border of the sternocleidomastoidian muscles (Fig. 2). On both of the axillary regions it was also noted a 10 cm length furrow at each axilla, oriented sagitally including the anterior and posterior axillary regions, having approximately the same characteristics as the neck mark (Fig. 3); the cervical and axillary furrows were consistent with the characteristics of the shirt that the deceased was wearing.

The alcohol levels in the blood and urine were 3.10 mg/ml and 2.45 mg/ml, respectively.

The internal examination revealed the classical non-specific signs of asphyxia, such as visceral congestion, dark and fluid blood. We found no signs of significant cardiac or pulmonary disease. Macroscopic examination of the liver revealed hepatomegaly (2200 g) with the morphological aspect of liver dystrophy.

The autopsy report concluded that the man had died from mechanical asphyxia due to hanging by shirt, in which it also might have contributed a positional asphyxia, all these strongly suggesting an accidental manner of death.

*Case 2*

In August 2009, after a rainy night, a 66 years old man was found dead in an open field near a marketplace, hanged with one of the handles of a textile travel bag. The handle was hanged on an iron pillar of a net fence, at a height of 90 cm (Fig. 4). The handle had a 1-1.5 cm width and it was twisted once around the neck of the deceased (Fig. 5).
The body was in a kneeling position, towards the fence, both of the knees touching the slippery mud. The right upper limb was hanging near the body, while the left forearm and hand were raised towards the left-side neck region. The corpse rigidity was fully developed and the liver mortis areas were noted on the right forearm and hand, the left elbow, hypogastric region, both of the knees and legs.

On-scene investigation revealed that the deceased was frequently seen by the people in the area of the marketplace. One witness stated that the man had been diagnosed with psychiatric disease and was frequently saying that he wants to commit suicide. No farewell letter was found at the scene.

**Autopsy findings**

The external examination of the body revealed a ligature mark in the upper third cervical region; the brown-reddish-parchment like groove was oriented obliquely upwards towards the left retromastoidian region, having an unequal width between 1.5 cm and 2 cm and a 0.5 cm maximal depth on the right side of the neck, progressively decreasing towards the left retromastoidian region, where it fades out. On the left-side region of the neck, beneath the mandibular angulus, at 1 cm below the lower margin of the groove, it was noted a triangular shape of parchmentation area, with a horizontal base of 1.5 cm, and the two sides oriented downwards, each having 3 cm length; this area was consistent with the position of the twisted portion of the handle found at the scene examination. We didn’t find any other traumatic lesions at the external or internal examination.

The internal examination revealed dark-red liquid blood, diffuse visceral congestion, subpleural petechiae; moderate systemic atherosclerosis with diffuse myocardial sclerosis was also noted; an interesting and rare finding was an intact mediastinal hydatid cyst, attached to the anterior pericardium.

Toxicological analysis of blood and urine were negative for alcohol.

**Discussion**

The manner of death in hangings can be categorized as suicide, homicide, accident or judicial hanging. Almost all hangings are suicidal; it is classified as the second or third most used method in most of the countries [1]. Homicidal hanging is rare, and usually it happens to those who cannot defend themselves (children, elderly, inebriated or under the influence of...
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 Drugs) [2]. Judicial hanging remains an execution method in retentionist countries (such as Middle Eastern countries, several African countries and some Caribbean states) [3].

Accidental hanging is uncommon; usually it occurs when adults engage in auto-erotic practices [1,4] or when children are playing at hanging or get entangled in different objects [1,2,5] (for example: a child who was having a key attached to a necklace worn around the neck, while trying to jump a wood-fence, the necklace got entangled on the top of the fence; or another similar case in which a drunk adult who also was having a key attached to the necklace, tried to unlock the door without taking-off the necklace; while the key was in the door-lock he stumbled, fell down and so he remained hanged by the necklace attached to the key).

Both of the cases reported in this article had the same manner of death: accident, but the mechanisms which led to it were slightly different. The medico-legal importance of the first case presented in this article is represented by the associated mechanisms of asphyxia: the external compression of the anatomical structures of the neck due to the collar of the shirt tightened by the weight of the body and positional asphyxia. The criteria for the diagnosis of positional asphyxia and the conditions and circumstances predisposing to death from it are described in the forensic literature [6, 7, 8, 9]; according to most of the authors, alcohol intoxication is a frequently encountered situation that may predispose to positional asphyxia and also one of the reasons for a victim’s failure to self-extricate [7].

In this case, on-scene investigation was very important, giving us strong informations suggesting the manner of death, given the declarations of the deceased colleagues and the position of the corpse (resembling the crucifixion position) which due to the limited excursions of the thorax led to severe interference with the pulmonary ventilation and haemodynamics; corroborating these with the fact that on external examination we found no signs of self-liberation attempt, the autopsy performed showed no evidence of cardiac or pulmonary disease, and that the toxicological results showed severe alcohol intoxication, we can say that this case meets the criteria for an accidental positional asphyxia.

In the second case, the mechanism of asphyxia was the compression of the neck structures by the handle of the travel bag, tightened by the weight of the body. Although the investigators were informed that the deceased might have previously threatened to commit suicide and he might have been diagnosed with psychiatric disorder also, on-scene investigation revealed no farewell letter, the noose was an atypical one and toxicological results were negative for alcohol, all these suggesting an accidental manner of death.

References