

Hanging

Strangulation by hanging is caused by the pressure of the tourniquet tightened passively around the neck by the weight of the whole or part of the body. Hanging can also occur in sitting, kneeling or lying down, since a relatively small force is sufficient to compress and thus completely close the blood vessels in the neck. Hanging is the most common method of suicide in most countries, and is painless when unconscious immediately.

Pathophysiology of hanging

The following factors are involved in death during hanging:

- cerebral ischemia;
- airway closure by pushing the tongue root backwards and upwards against the soft palate and nasopharynx;
- irritation of the *n. vagus* - may cause sudden cardiac arrest;
- irritation of the *n. laryngeus superior*;
- irritation of the carotid sinus.

Unconsciousness occurs almost immediately after sufficient tightening of the tourniquet, but cardiac action may be preserved for up to a quarter of an hour. If the tourniquet can be released within the first few minutes, the sufferer can be saved, but often with permanent psychological consequences.

We speak of a typical hanging when the strangulation in a freely hanging or almost hanging person runs anteriorly on the neck, symmetrically along the sides of the neck and obliquely upwards to the strangulation attachment. In a typical hanging and typical groove, the knot is usually at the back of the neck. The atypical groove is usually caused by a tendril and knot on the side of the neck.

Strangulation groove

The hanging groove can be either *closed* or *open*. On inspection, it is a yellow to brown drying of the skin, which may resemble parchment. The site of the knot can be identified by the presence of an irregular wider abrasion. However, the groove on the neck alone cannot be considered as evidence of death by hanging, since the drying of the skin, which usually occurs by rubbing off the corner layer, can be mimicked by the post-mortem tightening of the tourniquet.

The appearance of the groove is always influenced by the quality and type of the tourniquet:

- a deeper and more noticeable groove is caused by a firm, narrow, hard tourniquet;
- a shallow, only slightly noticeable groove (it may even be completely absent) is caused by a soft, wide choke;
- a double or triple groove is caused by multiple turns of the tourniquet around the neck, in addition to raised skin bars between each turn.

Other parts of the body may develop additional abrasions caused by the body striking surrounding objects when hanging in small spaces. Signs of vital reaction may be found on these abrasions. In addition, fractures of the corners of the thyroideal cartilage or hyoid bone may occur as a result of direct pressure from the tourniquet and indirect traction.

Autopsy

In addition to the signs described above, it is sometimes possible to find other signs of violence on the body of the hanged person, such as cut wounds, which can be considered as signs of previous suicide attempts. The position of the hanged person may be very different; the feet may or may not be touching the ground. As well as being hanged sitting, kneeling or lying down. Even bound hands and feet cannot be considered evidence against suicide.

It is not possible to decide from a mere examination of the deceased whether it is actually a suicide or whether it is a simulated suicide in which the perpetrator first killed the victim by other means. Only an autopsy can reveal other causes of violent death.

In an autopsy, we can evaluate:

- the manner of execution of the knot - it may be typical of certain professions;
- assessment of the length of the tourniquet - whether it was possible for the victim to put his head through the knob himself;
- presence of an elevated position - chair, stairs;
- abrasions from nails in the vicinity of the strangulation groove - efforts to free the person from the clamp.

Accidents

Accidental hangings occur most often in children during various games. In infants, it can occur if they are in a crib with a net, and in some cases, hanging from stroller straps.

In adult individuals, particularly males, abnormal sexual desire may occur, especially during masturbation, when hanging or pulling on the tourniquet is used to achieve sexual gratification. In these circumstances, it is sometimes possible that hanging may occur accidentally. In these cases, bizarre and complicated mechanisms are sometimes found where the tourniquet is fastened not only around the neck but also around the genitals.

Murder

Murders carried out by hanging the victim are very rare. They can be carried out on children, the mentally ill, the drunk or otherwise intoxicated, and the physically weak. It is always necessary to conduct a toxicological examination of the hanged person in order to assess his or her capacity to act. If the hanging was preceded by a struggle, there are usually wounds on various parts of the body that may be indicative of self-defence.

A specific case is suicide simulations, where the body of a person killed by other means has been hanged afterwards to give the impression of suicide. In this case, death by asphyxiation, blockage of breathing holes or strangulation is most often involved. Such a course may be indicated by unusual lines and abrasions on the neck and face.

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