

Homicidal strangulation by victim's own artificial hair extensions

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Received: 27 August 2010 / Accepted: 8 November 2010 / Published online: 24 November 2010
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Abstract A 24-year-old woman was strangulated by her husband using his wife's own 60-cm long artificial head hair integrations. During a domestic conflict, she was strangulated while lying in bed in a prone position. Her husband wrapped her hair around her neck and pulled it with one hand while fixing her head with the other hand. Due to the soft and broad nature of the ligature, the neck skin presented scarcely any ligature marks and showed a horizontal pale area in the middle of the neck above which the neck and face were congested; the skin showed extensive petechial haemorrhages. The autopsy revealed no internal injuries except two small haematomas in the soft tissue on each side of the neck. These were located under the pale area of the skin. The larynx and hyoid bone were intact. No natural disease was found. The toxicological analyses showed negative results. This is the first report of a homicidal strangulation by means of the victim's own artificial hair extensions.

Keywords Homicide · Ligature strangulation · Asphyxia · Artificial hair integrations · Hair extensions

Introduction

Strangulation by ligature is defined as the application of external pressure to the neck structures resulting in mechanical asphyxia [3]. Various objects may serve as

ligatures and the morphology of the neck injuries depends on the nature of these objects and on the amount and duration of force applied. In this report we describe the first case of homicidal strangulation using the victim's own artificial hair integrations as the ligature.

Case report

The couple (perpetrator and victim) were living together and had had several conflicts and physical confrontations in the past. The perpetrator had at one time been admitted to hospital after being stabbed by his wife. On another occasion, he choked her during a domestic fight. She occasionally had threatened to stab him and had regularly offended him and demanded a divorce. In general, she was not satisfied with her current life situation and wanted to become a singer, an ambition not approved of by her husband.

One day the perpetrator went to a police station and stated that he had had a fight with his wife. He reported that during the altercation he had been able to lay her down on the bed while he was sitting astride on her lower back. In this position he had strangled her by pulling her hair with one hand and fixing her head with the other. When the police checked their residence, the wife was found dead lying on the bed in a prone position with her hair tightly wrapped around her neck. The emergency physician confirmed death.

The body was transported to the Institute of Legal Medicine and an autopsy was performed. External examination revealed massive blood congestion and petechial haemorrhages of the head and upper neck that ended in a sharply formed line (Fig. 1a and b). The barely defined ligature mark ran horizontally across the anterior aspect of

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Fig. 1 a, b Both sides of the neck and the lower half of the face showing congestion with numerous petechial haemorrhages. The congestion is sharply demarcated at the ligature level. On the left side of the neck (a), the demarcated line shows some irregularities. This is consistent with the perpetrator's statement that he had wrapped her hair from the back of the left side of the neck around the front and pulling it backwards along the right side of the neck, resulting in a sharply demarcated ligature level (b)

the neck and ascended on both sides, slightly and diffusely demarcated on the left side. The ligature mark was about 2 cm in width. The face and the upper neck were covered with countless superimposed petechial haemorrhages. Petechial haemorrhages were also present in the conjunctivae and the lining of the oral cavity. Linear haematomas and one small spotted abrasion 5 mm in diameter were seen at the anterior aspect of the neck. A haematoma and a crescent-shaped skin abrasion at the left side of the neck were located above the ligature mark. On the face, there were small spotted abrasions as well as a haematoma on the inner surface of the upper lip with a discrete laceration of the mucosal surface. Both upper arms as well as the front of both lower legs presented numerous fresh haematomas. There were no other signs of relevant injury.

Dissection of the neck showed a few small spotted haematomas in the superficial soft tissue of each side of the throat region under the ligature mark. The hyoid bone and the larynx were not injured and the tongue also showed no haematomas. On further examination the inner side of the scalp showed a large number of small haemorrhages in the frontotemporal region. During dissection of the back, a haematoma was found in the subcutaneous fat tissue over the left scapula. No other injury was noted at the autopsy and no natural disease was found. There were no signs of a current pregnancy.

Later on the same day, the perpetrator was examined by a forensic physician of the Institute of Legal Medicine. There was a bite mark on the anterior side of the right forearm and a thin line of small petechiae on the right side of his neck, obviously caused by pulling at his clothes. There were also uncharacteristic superficial abrasions that were consistent with scratch marks caused by fingernails.

Histological examinations of the inner organs revealed no pathological changes. The toxicological analyses of blood and urine of both persons showed negative results. Although the deceased was found with her hair tightly wrapped around her neck, the police technicians did not find any additional evidence of hair on her neck skin.

The results of the forensic medical examinations indicated that the cause of death was mechanical asphyxia due to compression of the neck. The findings were consistent with the perpetrator's report to the police. The line on the neck between the pale area and the congested area above was sharply demarcated. The line was horizontal on the front side of the neck and ascended on the right side. On the left side it ascended at a smaller angle and was less sharply demarcated. This could be explained by the mechanism of the strangulation, as the perpetrator admittedly pulled the hair from the right side across the front to the left side. The small, superficial abrasion on the front of the neck had obviously been caused by a small pendant on a necklace that the deceased was wearing and that had been trapped under the hair during the strangulation. It was assumed that the crescent-shaped skin abrasion at the left side above the ligature mark was a fingernail scratch mark that had been caused by the woman herself when she tried to tear away her hair during the assault. As she was found in a prone position, the small, spotted abrasions on the face and the nose as well as the haematoma and the tear in the inner upper lip were obviously the result of the perpetrator pressing her face into the pillow on the bed [9].

Discussion

Ligature strangulation, manual strangulation, hanging as well as arm-locks and choke-holds are different types of

fatal pressure to the neck. Strangulation by ligature is usually homicidal but sometimes accidental (young children, autoerotic fatalities) or suicidal [5, 6]. The ligature is often found still in place. Depending on the kind of ligature, and how it is wrapped around the neck and fixed the local signs of strangulation may vary. Ligature marks range from minimal lesions (if any [2]), which can be detected only by a very careful examination under ideal conditions, to severe injuries to the neck with fractures of the larynx and hyoid bone [3, 6]. Due to the compression of the neck and the veins being occluded first, congestion with petechial haemorrhages develops.

The appearance and degree of the injuries depend on a number of parameters: the nature of the ligature as well as the duration and amount of force used. Soft and broad objects tend to produce less severe injuries compared with those produced by narrow and hard objects. A soft and broad ligature (e.g. bed sheet, scarf) can result in minimal ligature marks but often produces intensive facial congestion with massive petechial haemorrhaging. Hair as well as artificial hair integrations can be considered soft and broad ligatures.

Hair is an unusual ligature object. By reviewing the literature (both in English and German) only three articles dealing with strangulation by hair were found. Two articles present cases of accidental strangulations of young children entangled by their mothers' hair while sleeping in their parents' beds. In the case reported by Milkovich et al. [7], the 13-month-old baby survived, in the other case reported by Kindley and Todd [4], the child died. In both cases, the external findings were similar to those that we have found in the case presented here.

The third report by Ruskiewicz et al. [8] presented a homicidal strangulation of a 47-year-old healthy woman by means of her own hair. The perpetrator in this case immobilised the victim by holding her head between his arm and chest and simultaneously wrapping her hair around her neck. In this case, there was a flat, diffuse, poorly defined ligature mark on the front and the sides of the neck at the level of the mandibular angles. There was extensive congestion of the face and the upper neck with numerous superimposed petechiae. The scalp showed small subcutaneous and intradermal haemorrhaging in the parietooccipital region. The mucosal surfaces of the mouth showed numerous scattered, focally confluent petechiae. No abnormalities of the neck structures were found except a few petechial haemorrhages on the surface of the epiglottis.

In our case, artificial hair integrations were used as a ligature. Hair extensions can consist of human hair or synthetic fibres (as in our case). There are different methods of integration. In our case, the additions were bonded directly to the woman's own hair with special glue. There were no signs that a relevant number of natural or artificial hairs had been pulled out during the strangulation process. It has been described that artificial hair as well as the glued junctions between natural and artificial hair present the same strength as natural hair [1].

Conclusion

Long hair as well as artificial hair integrations can serve as an effective and lethal ligature. A thick bundle of artificial hair extensions (e.g. pony tail) is a relatively soft and broad ligature which produces only minimal external marking that can be observed as vague, discontinuous lines. There also may be no injuries to the larynx or the hyoid bone present. Due to the soft and broad nature of the ligature a massive upper congestion can be expected.

Conflict of interest The authors declare that they have no conflict of interest.

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