

Case Report

Accidental Ligature Strangulation with Avulsion of Scalp

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Abstract

With its relatively small diameter, lack of bony shielding and close association of the airway, spinal cord and major vessels, the human neck is uniquely vulnerable to life threatening injuries. Strangulation is a constriction of the neck by a ligature without suspension of the body, the constricting force being applied directly to the ligature. In this paper, we present case of a 25 years old woman who was accidentally strangled when her one end of saree was entrapped in moving crop thresher during separating grains from dry crops in the field. She was immediately brought to the hospital where she was declared dead. Complete and meticulous autopsy was done and cause of death given as accidental ligature strangulation. This phenomenon is unusual and highlights the hazards of working with such conditions leading to such unfortunate machinery incidences and safety measures to be taken while working with such machines.

Key Words: Strangulation, ligature, accidental, Crop thresher

Introduction:

With its relatively small diameter, lack of bony shielding and close association of the airway, spinal cord and major vessels, the human neck is uniquely vulnerable to life threatening injuries. [1] Strangulation is a constriction of the neck by a ligature without suspension of the body, the constricting force being applied directly to the ligature. [2] Strangulation deaths are typically homicidal and accidental cases are unusual. [3] Accidental strangulation is usually involved in auto-erotic asphyxiation. In adults accidental ligature strangulation involving article of clothing getting trapped in crop thresher is not seen usually. In present paper a case of accidental ligature strangulation due to entrapment of saree in the crop thresher during work in the field is presented.

Case Report:

This paper present a case of a female aged 25 years who while working near a crop thresher gets strangled accidentally due to entrapment of upper saree end in the moving crop thresher. It was evening of cold winter day. The crop thresher is used to separate grains from dry crop kept after cutting in the field.

machine during work. The saree got tightened around neck which pulled scalp hairs towards machine. The pull over scalp hairs was so severe that it resulted in avulsion of scalp exposing the skull. She was immediately brought to Government Medical College, Aurangabad, where she was declared dead.

The postmortem examination was done in the morning of next day. On examination, reddish abraded ligature mark seen around neck over thyroid cartilage, horizontally placed of size 16x2cm. It was situated 7cm above suprasternal notch, 5cm below chin, 4cm below left mastoid and 4.5cm below right mastoid.

There was evidence of petechial haemorrhages over eyelid, face and forehead. On dissection of neck tissue, contusion was present over strap muscles of neck corresponding to ligature mark. Sub-capsular interstitial thyroid haemorrhage was present. There was haemorrhagic infiltration over pharynx, epiglottis, and larynx. Lymphoid follicles at base of tongue and palatine tonsils are congested. On palpation, there was evidence of undisplaced fracture at middle of right femur with evidence of blood infiltration in surrounding tissues. On dissection, scalp was found completely avulsed and separated exposing skull.

The brain was congested with petechial haemorrhages in white matter. The cause of death was given as accidental strangulation with multiple injuries and right femur fracture.

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At 16.00 hrs in evening the upper end of saree of the deceased got entrapped in the



Discussion:

Accidental strangulation though unusually reported, circumstantial evidence alone can sufficiently indicate the accidental nature of the occurrence. Ambade V N et al [4] reported a case of accidental ligature strangulation in a male due to entrapment of shawl in the moving electrical crop thrasher.

The first written case report of accidental strangulation in an adult was the world famous dancer Isadora Duncan who died on 14th September 1929 the long scarf, which she was wearing, became caught in the wire wheels of her Buggati car, stopping the vehicle. Isadora died at the spot and was later found to have sustained a fractured larynx on a carotid artery injury [5]. Cases are documented where cloth entwined in a cycle powered rickshaw by Aggrawal N K et al, Kohli A, Verma S K. [6] Jain V reported dupatta causing cervical spine injury in a thrasher. [7] Even an animal has caused this bizzare form of accidental strangulation as reported by Verma S.K., Agrawal NK. [8] The lesion may vary from injury to superficial tissues to laryngeal rupture and carotid artery stenosis as in Isadora Duncon syndrome. [5] Accidental

strangulation deaths result from a compression of the neck leading to asphyxia and also stimulation of carotid sinus or vagal stimulation. [9]

The present case report illustrates an unusual but a peculiar form of injury due to traditional Indian garment. The article of cloth gets entangled in moving wheels or machinery and cause trauma to body parts.

Accidental ligature strangulation usually occurs at the extremes of life or otherwise healthy adults, usually under the influence of alcohol or drug. The common mechanism by which accidental ligature strangulation occurs is the progressive constriction of the neck by an article of the victim's clothing. In this case, because of the increasing constriction of neck with victim's saree end and severe pull by entrapped scalp hairs. Scalp is avulsed and separated, exposing skull.

In Conclusion, this accidental death highlights that these kinds of machines need to be produced with increased safety mechanism and people using them should be educated on hazards of working with machinery as well as using safety measures such as use of plastic or saree guards and alteration in dress to prevent loose, flowing ends. This often total injury can be prevented largely through public awareness and education.

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