

July - December 2023

Volume 32

Issue 2

PRINT ISSN: 2277-1867

ONLINE ISSN: 2277-8853



JOURNAL OF FORENSIC MEDICINE SCIENCE AND LAW

Official Publication of Medicolegal Association of Maharashtra

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**MULTISPECIALITY, MULTIDISCIPLINARY, NATIONAL
PEER REVIEWED, OPEN ACCESS, MLAM (SOCIETY) JOURNAL
Indexed with Scopus (Elsevier) & Index Copernicus (Poland)**

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JOURNAL OF FORENSIC MEDICINE SCIENCE AND LAW

(Official Publication of Medicolegal Association of Maharashtra)

Email.id: mlameditor@gmail.com

PRINT ISSN:

2277-1867

ONLINE ISSN:

2277-8853

Case Report

Decapitation of a Farmer due to Agriculture Machine

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Article Info

Received on: 29.07.2022

Accepted on: 31.12.2022

Key words

Decapitation,
Accident,
Agriculture machinery,
Forensic pathology,
Autopsy.

Abstract

The history of agriculture in India dates back to the Neolithic and India ranks second worldwide in farm outputs. Decapitation is the complete separation of the head from the body. Decapitation has been reported to occur in accidental, suicidal and homicidal manner of deaths. Autopsy surgeon should consider the history, type of injury, level of decapitation, circumstances, type of weapon which can inflict such injury, incident scene visit are important before formulating any final opinion in cases of decapitation. The cases on decapitation are reported in literature but only few cases have explained the mechanism of such decapitation in detail. In the present case, the authors have discussed the mechanism of decapitation and report an infrequent case of accidental decapitation while using Rotavator (tractor drawn implement which is mainly used for seed bed preparation) by agriculture worker in the field to save the life of a cattle. The autopsy findings of this case are important to ascertain the 'manner of death'. Further, the level of decapitation is also important for the clinicians in interpreting and outcome of victim of neck trauma.

1. Introduction

The World Health Organization (WHO) defined "accident" as an unpremeditated event resulting in a recognizable injury; they later elaborated the same to include an event, independent of the will of a person, caused by a quickly acting extraneous force and manifesting itself by an injury to the body or mind.¹ Separation of the head from the body can occur at various levels of the neck. The majority of decapitations occur at the mid-neck (second to fifth cervical vertebrae), followed by the upper neck and then the lower neck.²

Accidental decapitation can be the result of an explosion, a vehicular or industrial

accident improperly administered execution by hanging or other violent injury.³ In suicide, decapitation involves the deceased placing his or her head on a train or tramline, resulting in severing of the head by a moving engine.⁴ The differentiation between the modes of decapitation death is usually difficult to explain for a forensic expert without proper history, complete autopsy, incident scene visit and the decedent's decapitated head. In the present case, a farmer was working in his field and Rotavator machine was operated by agriculture worker in same field during which, cattle came in front of tractor; to save the life of that cattle; worker had suddenly turned the

How to cite this article: Sharma et al. Decapitation of a Farmer due to Agriculture Machine. J For Med Sci Law 2023;32(2):85-88.

Rotavator and cause beheading of farmer. Complete autopsy and meticulous examination of such wound is also important for Medico legally point of view, to avoid any forged allegation on innocent and to gain the claim under various government schemes for farmers. Hence, the circumstantial evidence, types of injuries, a crime scene examination and a complete autopsy are always essential to reaching a correct diagnosis.¹

2. Case report

The dead body without head of an average built, 35 years old male was recovered by Police and the same were subjected to medicolegal autopsy at nearest District hospital. Later, the case was referred to the medical college for expert opinion and autopsy. The pieces of fractured bones and soft tissue in a separate carry bag were also brought along with the body.

Figure 1: Depicting torn pieces of the victim's clothes and blades and wheels of Rotavator.



Figure 2: Headless corpse on the ground with pool of blood under and in the vicinity of the neck region.



As per Inquest report and statement of the eye witnesses, the deceased was working in field and agriculture worker was driving tractor with Rotavator (tractor drawn implement which is mainly used for seed bed preparation) in the field. Suddenly, cattle came in front of tractor. To save the life of cattle, driver turned the tractor towards the deceased and

neck was entangled in the wheel of the Rotavator and ultimately resulting in decapitation. Photographs of the incident scene were taken by police. The pieces of clothes, which were allegedly worn by deceased, tags of soft tissues were entangled in the axle of the Rotavator with dried blood stains present over the blades of Rotavator at places (Figure 1). There was a pool of blood under the neck region of the corpse (Figure 2).

Figure 3: Depicting decapitation wound and yellowish coloured gastric content over the neck.



Figure 4: Depicting head of the Victim with a piece of dura matter and soil particles at places.



Post-mortem examination was conducted on the next day. The autopsy was conducted with the following relevant and important findings: On external examination, soil particles were present over the clothes and wounds at places. The length of lower segment of body was 76 cm. Rigor mortis was present in the passing off phase. Postmortem staining was faintly visible over the back of his body except over pressure areas and it was fixed. Decapitation was noticed at the level of second intervertebral disc with comminuted fracture of third cervical vertebrae exposing the spinal cord. Remaining cervical vertebrae were found sub-luxated with comminuted fracture of spinous and transverse process at places.

All the fractured ends of bones showed infiltration of blood in their bony trabeculae. The margins over the available portion of neck were found reddish, irregular and contused. The available neck muscles showed diffuse extravasation of blood. On dissection, intima of the bilateral common carotid arteries and the internal jugular veins were found transected with crushing of margins. The trachea and esophagus were identifiable and transected at the level of the 6th cervical vertebrae. The gastric contents were present over the severance plane. Spinal cord was severed at the same level and clotted blood was present in cervical vertebral column (Figure 3). Soft tissues in the vicinity of wound were found to be contused.

The portion of head with upper part of neck were received in a separate carry bag. The head and face were completely deformed and they were found contused, crushed and lacerated and smudged with soil at places. The skin over the face was pale and showed no cyanosis, congestion, or petechiae. The available tissues showed multiple pockets of ecchymosis with minimal infiltration of blood in their bony trabeculae (Figure 4).

Apart from the decapitation injury, the other injuries including abrasions and contusions were also present almost all over the trunk on the front as well as on the back involving gluteal region. Bones of left foot were also found fractured at multiple places. On internal examination, all the organs were found pale. There was no history of any previous disease while toxicological analysis performed was negative for any poisonous substance including alcohol. The cause of death was opined to be antemortem decapitation which was accidental in manner, recent in duration and sufficient to cause death in ordinary course of nature.

3. Discussion

Decapitation has been used for execution throughout the world, and is still prevalent as death penalty in some countries including Saudi Arabia.² In forensic practice, decapitation accounts for about 0.1% of total autopsies. Decapitation can be antemortem or postmortem and can be suicidal, accidental, or homicidal.⁴ Most of the time, decapitation occurs postmortem; dismemberment of corpse done by the perpetrator of a crime to facilitate the disposal of a body or to conceal the identity, or as a manifestation of significant psychiatric illness of the offender that may be associated with ritualistic behavior. Decapitation is not the cause of death in

these cases and can usually be distinguished from antemortem injuries by the absence of hemorrhage and vital reaction.⁵

Decapitation resulting from occupational accidents is often associated with heavy machinery in workshops or farm equipment being towed behind a tractor can occur at any age. Peyron et al. (2017) reported a case of farmer who was accidentally decapitated when his clothing were caught in the drive shaft of a tractor.⁵ Byard (2017) conducted a national study and reported that farmers represented 17% of all worker fatalities. Fatal injuries that occur tend to be severe with limb amputations, evisceration, crushing and decapitation and animals such as cows, buffalo and horses may cause severe injuries, and death may result from most significant injuries involve the head and face, and then the upper torso. In our case also major injury was present over the head and neck.⁶

Similar to the present case, Demirci et al. (2009) reported a case of accidental decapitation of a farmer in which the rotating helix elevator machine tightened the scarf around the neck resulting in hanging/strangulation noose that, by continued tightening, caused decapitation of the victim. The victim's body was found on the ground. The autopsy revealed that the neck was severed at the level of the second and third cervical vertebrae.⁷

In the present case, the Rotavator that caused the death is an appliance connected to a tractor. It is mainly used for seed bed preparation and for removing and mixing residual of maize, wheat, sugarcane etc., thereby, helps to improve soil health and save fuel, cost, time and energy as well. A Rotavator machine generally consists of 4 parts: (1) Single or multispeed and gear box, (2) Blades with safety cover (3) Cardan shaft (4) Rotor shaft. The Rotavator machine mechanism is simple: when wheels rotate around axle, it moves the blades and wheels forward and upward. The victim was bent downward during work in field and accidentally trapped between the rotating wheel and blades of Rotavator which deliver dynamic and blunt force to head and neck tissues causing contusions, crushing of soft tissues including spinal cord, comminuted fracture of bones and finally decapitation. Thorough, complete investigation, crime scene evaluation, eyewitness statements and thorough and meticulous autopsy helped in deciding the manner of death in this case i.e. accident.

4. Conclusion/Suggestion:

Accidental work-related decapitation is rarely reported with the agricultural machinery. This case stresses the need for strengthening protection measures concerning agricultural machines to prevent this type of accident in the future. If there had been a safety cover over the blades of Rotavator, such an accident would not have occurred.

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