

CASE REPORT

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Suicidal Decapitation Using a Tractor Loader: A Case Report and Review of the Literature

ABSTRACT: In forensic practice, decapitated bodies are predominantly associated with decapitation by wheels of trains or with postmortem dismemberment following homicide. In the suicidal context, decapitation accounts for less than 1% of total suicide. Apart from decapitation by trains, other encountered methods involve suicidal hanging and vehicle-assisted ligature suicide. Reported here is a unique case of suicidal decapitation in a 45-year-old man using a tractor loader at the foot of a silo, on his farm. The head was recovered in the loader and there were several impact spots from the loader as well as blood on the silo wall. The autopsy revealed a complete decapitation wound with the severance plane located between the third and fourth cervical vertebra. A 1.5 cm wide abrasion on the anterior part of the neck and abrasions under the chin were noted. This very unique case of intentional suicidal decapitation is the first reported case of a planned system intended to create decapitation outside the unique case of homemade guillotine and the more common decapitation by train.

KEYWORDS: forensic science, decapitation, beheading, suicide

Decapitation of bodies, although not uncommon in a situation of armed conflict, is a rare event in the civilian setting, accounting for about 0.1% of forensic autopsies (1). Headless bodies in forensic practice are generally associated with decapitation by wheels of trains or with postmortem dismemberment following a homicide (2).

Suicidal decapitation is an unusual method of self-destruction. Two different studies have addressed this issue in 2004. Byard and Gilbert (1) have reviewed 16,589 autopsies in a 17-year period and found only 13 cases of suicide involving death by decapitation: 11 cases of decapitation by a train or tram, one case of decapitation in suicidal hanging, and one case of decapitation in a vehicle-assisted ligature suicide. Tsokos et al. (3) reviewed 7681 autopsies in a 7-year period and found 10 cases of suicidal complete decapitation: eight cases by train and two cases of hanging.

Here, we report on the unusual case of a man who committed suicide by decapitation using a tractor loader to behead himself.

Case Report

The headless body of a 45-year-old man was found by his son, sitting awkwardly on a stair at the foot of a silo, on the victim's farm. In front of him, a tractor loader was still running, its rear wheels sunk into the ground and the loader still banging against the silo wall (Fig. 1). On the morning of the victim's death, he and his son woke up early, as usual, for cow milking. That morning, the victim appeared exhausted to his son, as he did for the last few months. A few hours later, the son met with a veterinarian while

the victim stayed at home for his daily nap. When he came back from his meeting with the veterinarian, the son discovered his father's body as previously described.

The victim's head was recovered in the loader along with a cap and a blue fabric fragment. There were several impact spots from the loader on the silo wall and the presence of blood was also noted. The first impact was located at 1.26 m above a small stair in front of the silo. Then, a series of impact located progressively higher than the first one were observed. This could be explained by the fact that, as the front tires of the tractor were not sunk in the ground, the loader elevated as the rear tires sunk. Moreover, there was a blue print on the silo wall, made by friction of fabric against its surface. The man had suffered from depression in the past and was currently known to suffer from depression since a recent separation. He was under Sertraline and Temazepam, a treatment for which he was noncompliant according to his doctor. Furthermore, the victim apparently reported his suicidal ideations to his relatives and even discussed the different methods he could use to do so.

At autopsy, the decapitated body was fully dressed, his jacket and sweater collars ripped away. The man weighted about 75 kg and was nearly 1.68 m tall (head included). The decapitation wound exam revealed a 1.5 cm wide abrasion on the anterior part of the neck, along with linear abrasions under the chin, and a thinner erosion on the posterior part of the neck. The severance plane, slightly lower on the anterior neck than on the posterior part, was located between the third and fourth cervical vertebra. No other external marks of violence were identified, apart from a small laceration of the right middle finger. The comparison of the neck severance line with the imprints of the tractor loader on the silo wall was conclusive, revealing that both patterns were compatible. A toxicological exam was performed and revealed a therapeutic concentration of Sertraline as well as traces of Temazepam.

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FIG. 1—Scene of death with the headless body of the victim near the tractor loader.

Cause of death was decapitation and manner of death was determined to be suicide. An extensive investigation could not support any third-party implication. Moreover, an accident was also excluded. To further prove the suicide theory, the investigation team evaluated whether it had been possible for the victim to start the tractor loader himself and then still have time to take place in front of the silo before the tractor hit the wall by itself. This interval of time was estimated to about 20 sec and it was concluded that the elements of the scene were compatible with self-induction.

Discussion

Suicidal decapitation accounts for less than 1% of total suicide (1), with the favored method involving trains (1,3,4). Other encountered methods are decapitation in suicidal hanging (2,5–7) and in vehicle-assisted ligature suicide (8–11). In addition, one case of suicidal decapitation by guillotine (12) and a case of suicidal explosion-induced decapitation (13) have also been reported.

Suicidal decapitation is generally achieved by lying down with the neck over a train rail in front of an oncoming engine (1,3,4). In those cases, the decapitation wound margins are irregular, ragged, and sharp-edged. Blood vessels and nerves form bridges in the depth of the wounds. Skin abrasion zones are generally not circumferential and are of heterogeneous width. Moreover, oily black material is often detectable. The severance line is located between the second cervical vertebra and the first thoracic vertebra, with fractures of variable extent in the vicinity of the severance line (3).

Complete decapitation in hanging suicides is a rare outcome (1–3,5–7). Factors contributing to severance of the head during the hanging process are a high body weight, a thin strong ligature of poor stretchability or low elasticity (often a nylon rope), and a fall from a great height (2,5,7). Wound examination reveals clear-cut margins, with an adjacent sharply demarcated circumferential band-like abrasion zone, of homogeneous width, that is present on both the cranial and caudal wound edge. The severance plane passes through the uppermost part of the neck, between the first and second cervical vertebra or between the second and third cervical vertebra. The intervertebral disk is lost but there is no associated vertebral fracture (2,3,6,7).

Vehicle-assisted suicides, using a ligature tied between the neck and a stationary object while attempting to drive a vehicle away,

are a very uncommon method of suicidal decapitation (1,8–11). The morphology of the decapitation wounds in those cases has been generally described as presenting a very clean line of separation between the neck and the body, with minimal adjacent tissue damage or bruising, and an adjacent sharply demarcated abrasion zone (9,10). This pattern, very similar to the one in decapitation by suicidal hanging, was also associated with a severance line in the uppermost part of the neck (9).

Apart from suicidal decapitation by trains, hanging, and vehicle-assisted ligature, two highly unusual case reports have described other types of suicidal decapitation. The first one was described in 2001 by Shorrock. It was the case of a 58-year-old man who constructed a guillotine in his doorway, out of hardwood. The blade was a sheet of steel plate sharpened on one edge. The blade was allowed to fall under gravity and screwed to a heavy block of metal to give extra weight. The body was found, completely decapitated. The skin and underlying structures had been cleanly incised through the midpart of the neck (12). The other case, described in 2003 by Tsokos et al. (13), was a suicidal explosion-induced decapitation. The neck region was grossly lacerated, the cervical spine was completely shattered, and the neck organs were completely torn, with multiple splinters of wood in the near vicinity of the laceration and bridges in the depth of the wound.

It should also be mentioned that the occurrence of beheading can be a planned or unplanned outcome, depending on the type of suicide. As a matter of fact, suicidal beheading by train and by guillotine is a planned type of suicidal decapitation. On the other hand, decapitation in the context of suicidal hanging, in vehicle-assisted ligature, and induced by explosion is an outcome that has not been planned.

Our case is a very unique case of intentional suicidal decapitation. As far as we know, this is the only reported case of a planned system intended to create decapitation outside the unique case of homemade guillotine and the more common decapitation by train.

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