

## A case of railway-related suicidal death due to falling on the rails in a weird position: an alternative form of Hara-Kiri?

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**Abstract:** In railway suicides, the interest of forensic pathologists is often limited to mere external inspections and autopsy findings. It is our belief that a global examination of these cases ought to be de rigueur because of the heavy burden of psychological connotations that the desire of being run over by a train usually carries. The typical position of those who decide to lay themselves across the rail tracks is usually functional to achieve death by decapitation, a sudden and unpainful method of committing suicide. Our case report deals with a man who, according to testimonies, chose to expose his abdomen to the passage of an oncoming locomotive. We focus on the similarities between this uncommon method of suicide and a typical intentional evisceration, the hara-kiri.

**Key Words:** railway suicide, hara-kiri, abdominal injury, run over by train, forensic autopsy.

### INTRODUCTION

For those who are fatally run over by a train, it is generally easier to detect the cause of death than to differentiate between fatalities and intentional events. The distinction between accident and suicide can only be made after a careful evaluation of the history, an investigation of the scene, autopsy findings and toxicological data [1]. In Italy, this information is usually available to the medical examiner because even in scenarios that are highly suggestive of suicide, prosecutors have to conduct a meticulous investigation, as provided by law [2]. Moreover, in these cases, a complete medico-legal analysis cannot ignore any circumstantial data and information provided by witnesses. We report the case of a man who, as related by witnesses, intentionally stepped onto the track and lay across the rails, in the path of an oncoming train,

in such a position that the train ran over his abdomen. The weird position on the rails, never reported in other studies, prompted us to hypothesise the cause of this unusual event.

### CASE REPORT

According to direct testimonies, a 54-year-old committed suicide by stepping into the path of an oncoming train and laid himself across the rail tracks. Based on the reconstruction performed by a forensic engineering expert witness, the train driver promptly activated emergency braking. Nevertheless, the locomotive ran over the man's abdomen.

The external examination revealed that there was extensive dust and a black oily substance covering the body. Multiple bruises on his head and neck, thorax, abdomen (Fig. 1), lumbar region and upper limbs were

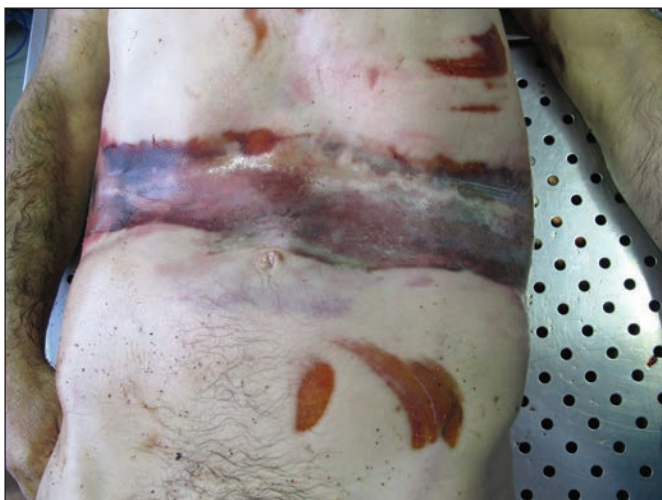
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**Figure 1.** Multiple bruises in the abdominal region.



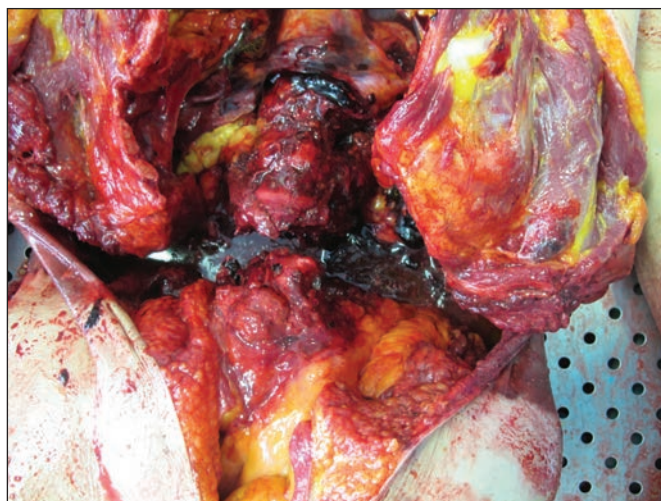
**Figure 3.** Blood infiltration of subcutaneous and muscular tissues from the abdomen, along with the traumatic section of the adipose and muscular tissues underlying the wide band-shaped bruise previously described.

detected. A broad, band-shaped bruise on the man's abdomen, over the umbilicus and extending bilaterally to the posterior axillary line was particularly noticeable. A cutaneous depression was also visible in the same region, as was a laceration on the right iliac fossa that exposed necrotic intestinal tract (Fig. 2).

The autopsy further revealed blood in the subcutaneous and muscular tissues of the abdomen, along with a traumatic section of the adipose and muscular tissues beneath the wide band-shaped bruise described above (Fig. 3). Other observations in the same area included a complete section of the intestinal wall, the complete fracture of the upper two lumbar vertebrae with a dislocation of the bone stumps and a section of the spinal cord, a complete section of the abdominal aorta and a generalised haemoperitoneum (Fig. 4). Toxicological analysis performed on a sample of the vitreous humour revealed an alcohol concentration of 3.3 g/L. No drugs were detected.



**Figure 2.** A wide band-shaped bruise in the abdominal region over the umbilicus, extending bilaterally to the posterior axillary line. In the same region, it is possible to relieve a cutaneous depression. A laceration with the exposure of a necrotic intestinal tract affects the right iliac fossa.



**Figure 4.** Complete fracture of the body of the upper two lumbar vertebrae, with the dislocation of the bone stumps and a section of the spinal cord.

## DISCUSSION

In the majority of cases involving railway fatalities caused by accidents, injuries are distributed in more than one area of the body, with fatal injuries generally occurring to the head. Multiple injuries elsewhere on the body are also a frequent occurrence. Cina *et al.* [1] conducted a retrospective analysis of 25 consecutive train-pedestrian fatalities, noting that massive blunt trauma was the cause of death in 88% of the cases. The explanation behind this finding is that the impact results in the transfer of a huge amount of kinetic energy from the train to the human body.

Another common railway fatality is suicide, when a subject intends to kill him/herself and deliberately lays him/herself on the rails in front of an approaching train, injuries are usually concentrated in a particular area of the body. Decapitation is the most common injury, which

incurs obvious destruction of localized tissue, usually covered with grease, rust or other dirt. In some cases, however, despite being run over by a train, the body is not dismembered because the skin is very elastic and can form cutaneous bridges.

Checking for alcohol and other drugs is always necessary, as suicides often employ multiple methods to ensure success. Davis *et al.* noted intoxication by alcohol or drugs in a great number of cases in which witnesses saw subjects intentionally laying on the rails in the path of an oncoming train [3].

In the case in question, the post-mortem finding included traumatic injuries, which were mainly concentrated in the abdominal region, the absence of injuries related to homicidal intent and the determination of an alcohol concentration of 3.3 g/L in a sample of the vitreous humour, together with corroborative evidence provided by witnesses, all of which led to the determination that death was by suicide.

In the existing literature [4, 5], in several of the cases of death by suicide involving trains, there are recurring features – e.g. injuries usually concentrated in a single area of the body and proof of intoxication by alcohol or drugs, etc. Among these cases, decapitation is the most common injury described.

We believe that the peculiarity of this case lies in the fact that the victim did not choose this method to achieve a sudden and unpainful death by decapitation, which is common among cases of railway suicide [6]. He decided to lay himself down in that precise position with the purpose of having the train run over his abdomen,

causing a complete section of internal organs, without external signs of mutilation.

The intention to pierce one's own abdominal region to commit suicide recalls the practice of Seppuku (Hara-kiri), literally, 'belly/stomach/abdomen cutting' [7]. This was a form of Japanese ritual suicide by disembowelment, a form of capital punishment passed on to samurai and warriors who had committed serious offenses, or carried out by choice because of a sense of self-inflicted shame. The central role of shame is peculiar to the practice of Seppuku: the spirit, along with its sense of painful ignominy, was believed to reside in the stomach, and slitting the belly open was felt to be the most straightforward way to end this enduring destiny. However, behind this gruesome and barbaric act lies the notion, in Japanese thinking, that an honourable death is more desirable than a life of shame.

In our case, the peculiar position on the rails, never reported in other studies, could signal the clear intent to expiate shame and sins, usually associated and located in the abdominal region. Evidence of excessive alcohol and a diagnosis of alcohol abuse are often associated with signs of shame, guilt and anhedonia [8, 9], more so than in episodes of major depression [10]. This factor, beyond the victim's origins [11], suggest that this interpretation of the event should be considered as a likely explanation of this unusual circumstance.

**Conflict of interest.** The authors declare that there is no conflict of interest.

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