

A Case report of Unknown Identity: Investigating a Death on Railway Tracks

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Abstract

Unidentified bodies pose substantial challenges in forensic and medico-legal investigations, requiring a thorough and multidisciplinary approach. This case report discusses the forensic investigation of an unidentified male, approximately 40 years old, discovered deceased on the railway tracks. In this case, severe traumatic injuries were observed, particularly to the head and face, suggesting a high-impact collision, likely with a moving train. However, the absence of personal identification documents complicated the process of establishing the individual's identity.

The forensic examination revealed multiple traumatic injuries, including a crushed head, fractures in the upper limbs, and significant abdominal lacerations. Internal findings such as congested organs, ruptured spleen, and lacerated liver supported the high-impact trauma hypothesis. The presence of post-mortem staining and rigor mortis provided further insight into the timing of death. Notably, a tattoo in Urdu and circumcision suggested the deceased's religious background, aiding in preliminary identification efforts.

This case highlights the complexities involved in distinguishing between pre- and post-mortem injuries, and emphasizes the importance of forensic techniques such as DNA profiling and dental record comparisons in resolving cases involving unknown victims. The investigation underscores the need for a comprehensive, multidisciplinary approach to railway fatalities, combining scene analysis, autopsy, and ancillary testing to determine the cause of death and support identification efforts. Such cases necessitate coordinated efforts among forensic experts, law enforcement, and medical examiners.

Keywords: Unidentified Male, Railway Tracks, Forensic Investigation, Blunt Force Trauma, Autopsy Findings, Medico-Legal Examination

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Introduction

The discovery of unidentified bodies poses significant challenges in forensic and medico-legal investigations, demanding a meticulous and multidisciplinary approach to determine the cause of death and establish the identity of the deceased^[1]. This case report details the investigation of an unknown male, approximately 40 years old, found dead on the railway tracks in a capital city of a state. Railway-related fatalities can result from various scenarios, including accidental deaths, suicides, and homicides, each requiring distinct investigative strategies^[2]. On the morning, the lifeless body of the unidentified male was discovered on the railway tracks, triggering a comprehensive forensic examination. The initial assessment suggested severe traumatic injuries consistent with a high-impact event, likely involving a moving train. However, the lack of identification documents or personal belongings at the scene necessitated a thorough investigation to rule out foul play and uncover the victim's identity.

This report aims to provide an in-depth analysis of the forensic procedures undertaken, from the scene investigation to the autopsy findings and subsequent ancillary tests. It highlights the complexities involved in distinguishing between pre- and post-mortem injuries and emphasizes the role of toxicological analysis in understanding the victim's state at the time of death.

The identification process, including the use of advanced forensic techniques such as DNA profiling and dental records, is also discussed. Through this case report, we aim to shed light on the investigative challenges and underscore the importance of a coordinated effort among forensic experts, law enforcement, and medical examiners in resolving cases involving unidentified victims on railway tracks.

Case Description

An unidentified male, approximately 40 years old, was found deceased on the railway tracks. The following observations and findings were noted during the forensic examination:

Physical Characteristics

- **Build:** Average build, weighing approximately 80 kg and measuring 180 cm in height.
- **Rigor Mortis:** Rigor mortis had passed from both the upper and lower limbs.
- **Post-Mortem Staining:** Present on the back.
- **Identifying Marks:** A tattoo mark on the dorsum of the hand with an Urdu word (Figure: 1) and a circumcised penis, suggesting the deceased was of Muslim religion.



Figure: 1



Figure: 2

Injuries

- **Head and Face:** The head and face were crushed from front to back. All structures above the mandible were destroyed, and the brain was absent from the body bag. (Figure:2)
- **Right Shoulder:** Swelling was noted. Upon examination, a fracture of the right humerus shaft was found, approximately 5 cm distal to the shoulder joint.
- **Left Forearm:** Swelling was observed. Upon examination, a fracture of the ulna was found, approximately 5 cm distal to the elbow joint.
- **Abdomen:** A laceration measuring 12 x 4 cm was present on the left side of the abdomen, muscle deep, located 1 cm above the iliac crest and 18 cm from the umbilicus. (Figure: 3)
- Multiple contusions of sizes varying from 2x3 cm to 8x4 cm were found on the lateral aspect of the left thigh, along with grease staining. (Figure: 4)
- Multiple graze abrasions are present on the entire surface of the back of the right arm.
- Additionally, multiple abrasions of various sizes and shapes are present on the front of the right knee.



Figure: 3



Figure: 4



Figure: 5

Internal examination:

All internal organs were found to be congested. The lungs showed black pigment deposition and congestion. The spleen was found ruptured, with approximately 500 ml of clotted blood present in the abdominal cavity. Multiple lacerations and ruptures were observed on the anterior surface of the liver. (Figure: 5) The heart was congested, with the right ventricle filled with blood and the left ventricle empty

Negative findings: There were no signs of respiratory failure, asphyxia, or poisoning, including cyanosis, ligature marks on the wrists and ankles, and hemorrhagic spots in the gastric mucosa.

Discussion

The severe traumatic injuries to the head and face in this case indicate a high-impact collision, most likely involving a moving train. Research by Rupani Raja et al. highlights that facial injuries are frequently seen in railway track accidents (29.72%), second only to road traffic accidents (56.75%)^[3,4]. The presence of rigor mortis suggests that the body had been deceased for a considerable time before being discovered. Additionally, the post-mortem staining on the back implies that the body was lying in a supine position for a period after death. A study by Kumar S. found

that out of 20,877 autopsy cases, 3,169 (15.17%) were unclaimed bodies, with railway and road traffic accidents accounting for 516 (68.25%) accidental deaths in males and 301 (88.01%) in females^[5]. The presence of a tattoo in Urdu and circumcision offers potential clues regarding the deceased's religious background, which may assist in identification^[6]. In such cases, it is crucial that the legal system effectively collects and evaluates forensic evidence found at the scene of the incident to ensure justice^[7]. This forensic analysis plays a vital role in bridging the gap between medico-legal investigations and criminal justice, aiding both identification and accountability in trauma-related deaths^[8].

Opinion:

The time since death is likely 24 to 36 hours, as rigor mortis has passed, indicating a timeframe consistent with decomposition. The cause of death appears to be high-impact trauma from a moving train, evidenced by severe head injuries, multiple fractures, and internal organ damage, particularly to the spleen and liver. Identification may be aided by the Urdu tattoo and circumcision, suggesting a Muslim background, but further investigation is needed. Recommended actions include DNA profiling, toxicology analysis, and fingerprint matching, along with a detailed scene investigation to establish circumstances surrounding the death and confirm identity.

Conflict of interest: There is no conflict of interest among the authors.

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Ethical clearance: This case report does not require ethical clearance as it is based on a single case analysis.

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