

A Case Study of a Simulated Accident: Forensic Analysis Reveals the Truth

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Abstract

This study examines the forensic analysis of a staged vehicle accident, which was ultimately determined to be a case of premeditated murder. Using descriptive and exploratory case study methodology, the research reconstructs the sequence of events using physical evidence, digital forensics and medico-legal analysis. Data was collected from the crime scene, forensic laboratory reports and digital sources including call detail records (CDRs) and mobile tracking. The findings revealed clear signs of manipulation: the victim was dragged and trampled multiple times by a Mahindra Bolero vehicle in an attempt to stage an accident, followed by a fatal blow with a stone. Evidence including blood-stained material, torn clothes and vehicle marks were carefully documented and analyzed. The study concludes that forensic science, through systematic reconstruction and interdisciplinary methods, plays a vital role in detecting and exposing deceptive practices in staged accidents, thereby aiding in the delivery of justice.

Keywords: Forensic analysis, Simulated Accident, Crime Scene, Postmortem Report, Kutch Road, Blood Sample.

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A. INTRODUCTION

Forensic analysis plays a vital role in uncovering the truth behind accidents, especially in cases where circumstances are ambiguous or deliberately manipulated. Faked accidents—situations that are staged to mimic real events—present serious challenges for investigators, often involving fabricated evidence or misleading witnesses to conceal the true cause of the incident. Using scientific methods, forensic experts are able to reconstruct the sequence of events, identify anomalies, and ultimately determine the authenticity of an accident claim. Techniques such as accident reconstruction, digital forensics, and biomechanical analysis provide critical insights that help distinguish between real and fabricated scenarios (Batterman & Batterman, 2011). The integration of modern technologies, including computer simulation and machine learning, has further enhanced the accuracy and reliability of forensic investigations, enabling analysts to systematically expose deceptive practices and support legal proceedings with objective evidence. This paper explores the methods used in the forensic analysis of simulated accidents, and demonstrates how scientific

investigation serves as a powerful tool in the pursuit of truth and justice.

Aims of the study:

The purpose of this study is to help police officers in crime scene investigation to know how to identify the difference between an accident and a simulated accident.

B. Research Design

This research is based on a descriptive and exploratory case study design, focusing on the reconstruction of a criminal incident based on physical evidence, forensic analysis and digital data. It aims to establish the sequence of events, identify the perpetrators and confirm the homicidal nature of the crime.

1. Data Collection Methods:

The data was collected from primary sources from the crime scene and secondary sources through forensic reports and digital evidence, the methods of which are as follows: Investigation at the scene: Carried out by Scene of Crime Mobile Unit Korba to collect physical evidence. Postmortem investigation: Provided

medico-legal analysis to ascertain the cause and nature of death. Forensic laboratory tests, examining biological and physical samples, to link the crime to the accused. Digital forensics, call detail record (CDR) analysis and mobile phone tracking were carried out by Korba Police Cyber Cell.

2. Evidence Collection:

The following materials were collected from the crime scene: Blood-stained soil and clothes, biological evidence (hair, blood), soil samples from various places at the crime scene, damaged clothes and broken belt buckle. Blood samples from the Mahindra Bolero vehicle.

3. Tools and Techniques:

Visual inspection and photographic documentation of the crime scene. Post-mortem report to assess trauma and injuries. Trace evidence analysis using forensic laboratory equipment for forensic serology testing. CDR analysis and mobile tracking etc. techniques were used to establish connections and reconstruct the timeline.

4. Data Analysis Techniques:

Qualitative analysis of the crime scene based on photographic, descriptive and evidence-based data. Forensic analysis of the collected physical samples to identify the use of force, method of murder and possible body movements. Digital data analysis using cyber forensic tools to extract the last communication records and activities of the deceased and suspects. Comparative analysis of vehicle tracks and drag marks has been done to determine the role of the vehicle in the crime. Ethical Considerations: The investigation followed legal and ethical standards, ensuring proper documentation and chain of custody of all evidence. Respect for the deceased and procedural integrity during postmortem. Evidence to be used only for the purpose of justice and legal proceedings.

5. Limitations:

Lack of eyewitness testimony at the scene. Possibility of contamination due to the outdoor and remote location of the crime scene. Delay in evidence analysis due to logistical challenges in rural areas.

C. CASE STUDY RESULTS

In the month of January 2023, information was received from a police station of Korba district that a Mahindra Bolero is parked on a kutchra road near a shed on the side of a kutchra road in a jungle, hilly road. Upon receiving this information, Scene of Crime Mobile Unit Korba In-charge Officer Dr. Satyajeet Singh Kosariya, driver Mr. Rajesh Chandra, and head constable Mr. Hemant Chauhan left for the scene without delay. The scene of the incident is a kutchra road in the jungle and hilly area near the Forest Department's beat number 1170. The body of the deceased is lying at a distance of

29 feet to the south of the Bolero vehicle and the clothes are stained with blood.

1. Dead body inspection:

The head of the deceased is in the south-east direction and the feet are in the north-west direction. The head of the deceased is covered with a jacket. The jacket is of full sleeves in which the wrist of the left hand is stuck in the left sleeve. The deceased was wearing a T-shirt, a sando vest and blue jeans, which were covered with blood and dust. There were signs of dragging on the clothes of the deceased and they were torn due to dragging. Signs of dragging were found on the feet and hands of the deceased. The skullcap of the deceased was clearly torn; some part of the brain was protruding out. A large stone measuring 12 inches in length, 10 inches in width and 4 inches in thickness was found at a distance of about 5 inches from the head of the deceased, on which blood was found. Some of the hair on the left side of the head was also found torn due to dragging. Daya's eyes were closed and the left eye was half-opened, mouth was closed, blood was smeared on the face and blood was oozing out of the mouth. When the dead body was turned upside down, signs of dragging were found at various places on the body of the deceased.

2. Inspection of Mahindra Bolero four-wheeler:

On inspection of the Mahindra Bolero four-wheeler and the incident spot, a Mahindra Bolero four-wheeler was found parked on the kutchra road near the body of the deceased. Its right-side front bumper, front tyre, mudguard, rear tyre had blood-stain on it and a hair of the length of the hair on the head of the deceased was found stuck with the blood stains. Blood stains were found on the kutchra road in a length of 27 feet and 4 feet width, which were formed by someone dragging the four-wheeler from there. The buckle of the deceased's waist belt was found broken.

At the crime scene, there were signs of the deceased being dragged with the Mahindra Bolero four-wheeler to kill him, and also there were signs of the vehicle moving back and forth several times to crush the deceased. Even after this, when the deceased was not killed, the accused took the deceased to the side of the road and crushed his head with a stone, due to which the skull of the deceased was fractured. On inspection of the crime scene by Dr Kosariya, the officer in charge of Scene of Crime Mobile Unit Korba, it was found that the incident was committed by a professional driver or a skilled driver and an attempt was made to pass it off as a road accident to hide evidence. The investigating officer was informed when there was a suspicion that the incident was committed by an acquaintance of the deceased.

3. Exhibits sent for testing to Forensic Laboratory:

Blood-stained soil from beneath the dead body at the incident spot, clothes worn by the deceased, blood samples taken from Mahindra Bolero four-wheeler, hair,

blood-stained soil from the road, dirty soil, test report of the companion was positive.

4. Postmortem Report:

Multiple abrasion and contusion were found on the different part of body of the deceased, fracture was found in the left leg, the deceased was found to have suffered a blow on the head due to a hard and blunt object, the nature of death of the deceased was found to be homicidal.

5. Mobile phone call details CDR analysis:

On tracing the last call of the deceased's mobile phone by Korba Police Cyber Cell, it was found that two other people had snatched the mobile phone of a person from the nearby village and on searching their address, some people from the village snatched other people's mobile phones and booked the deceased's Bolero four-wheeler and planned to kidnap him at night for the greed of money, but the deceased recognized the accused even after wearing masks during the kidnapping. To avoid imprisonment they killed the deceased through his own vehicle that is Bolero and create it as an accidental scenario. Then crushed his head by hand full big rock to confirm his death.

D. DISCUSSION

Several studies have shown that careful observation during crime scene inspection allows effective analysis of the chain of key evidence, sequence of events and their relation to the incident (Nagwanshi, Kosariya, Mishra, Chandra, & Chakraborty, 2024; Kosariya, Mishra, Chandra, & Chakraborty, 2024; Kuriyal, 2025; Singh, 2021; Demirci & Dogan, 2010; Kosariya, Nagwanshi, & Chakraborty, 2025; Kosariya, Nagwanshi, & Chakraborty, 2025; Nagwanshi, Kosariya, Kujur, Mishra, & Chandra, 2024). The present study also presents similar findings. The present case from Korba district demonstrates the critical role of meticulous crime scene inspection and forensic interpretation in distinguishing homicidal acts staged as accidents. similar study was conducted by Pirani *et al.*, (2024) in which the body of a 60-year-old man was found lying face down on the floor of his apartment, partially nude, surrounded by blood and vomit, and with multiple head injuries. The autopsy concluded that the cause of death was post-traumatic brain injury. Current forensic criteria have been established to distinguish between homicide and accidental death (Pirani, *et al.*, 2024).

A similar study has been presented in Kosariya *et.al.* (2025) in which an auto driver killed a passenger by hitting him on the head with a stone and then overturned the autorickshaw to make it look like a road accident. In which, on the basis of observation by forensic scientists and physical evidence found during the crime scene inspection, it was found that it was not an accident but murder, which was also proved by the postmortem report (Kosariya, Nagwanshi, & Chakraborty, 2025).

The present case demonstrates several typical features of a homicide staged as a vehicle accident, including scratch marks on the victim and the vehicle, minimal external damage to the vehicle, and an injury consistent with a heavy stone being found on the victim's head. The forensic literature mentions deaths disguised as traffic accidents, although these are relatively rare (Patra, Rayamane, & Shaha, 2015). A thorough analysis of postmortem findings is important in these contexts, as a misleading “accident” narrative can obscure deliberate violence.

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The evidence of dragging—torn clothing, scalp injuries, abrasions on the skull, and a blood trail extending approximately 27 feet—is consistent with documented dragging/abrasion injuries, which often include soft tissue and bone injuries with abrasion patterns that resemble the transportation of a body under a vehicle. In similar cases, autopsies show trace-like abrasions and deep bone abrasions, indicating frequent contact with rough surfaces or metal structures—features present in this incident (Prahlow & Prahlow, 2016).

In vehicular homicides, it is important to investigate whether the victim was dragged intentionally or unintentionally. A major difference between real accidents and simulated violence lies in the behavior of the vehicle: in real accidents, drivers often attempt to stop or brake; simulated scenarios often involve slow driving and minimal damage to the vehicle. In this case, the repeated back and forth movement of the Bolero indicates a deliberate attempt rather than a sudden collision or an attempt to stop (Giorgetti, *et al.*, 2021).

Forensic reconstruction tools—such as photogrammetry, computer simulation, or PMCT—can be significantly helpful in reconstructing friction dynamics and directional forces, strengthening cause-of-death assessments in complex vehicle crashes (Buck, Naether, Räss, Jackowski, & Thali, 2013). Although such advanced technical reconstruction was not described, the consistency of friction distances, blood evidence, and vehicle position confirms intentional friction and subsequent blunt-force trauma.

Furthermore, the presence of broken belt buckles and torn clothing indicates attempts to bind or

restrain the victim – presumably during the abduction – supporting findings from mobile phone analysis and eyewitness testimony that the perpetrators had planned to abduct and silence the victim. Overall, this case exemplifies how multidisciplinary forensic analysis—combining scene investigation, observation, forensic serology, trace evidence, and digital investigation—exposes a violent homicide as an accident. Drag marks, blood samples, and blunt force trauma collectively rule out a casual explanation and underscore deliberate intent, consistent with the types of dramatic car-related homicides (Patra, Rayamane, & Shaha, 2015).

E. CONCLUSION

In this study, evidence was collected from a multi-faceted approach, integrating traditional forensic methods—such as crime scene inspection, observation and analysis, call record details received from the cyber cell, forensic laboratory results, and postmortem reports. Through comprehensive forensic analysis, the truth behind the mysterious accident was uncovered, revealing that it was, in fact, a case of murder rather than an accident.

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