



### G57 Injuries of an Armored Vehicle Occupant During Armed Robbery: A Case Report

*Giancarlo Di Vella, MD, PhD\*, Rosa Falamingo, MD, PhD, Maura Belviso, MD, PhD, and Francesco Vinci, MD, Section of Legal Medicine - University of Bari - Italy, Policlinico, piazza G. Cesare, 70124 – Bari, Italy*

The goal of this case report is to illustrate, by means of text and photographs, peculiar passenger injuries related to gunshot damage of the parts of an armored vehicle.

Armour plating is a system of reinforcement of a vehicle designed to protect passengers from attacks perpetrated from the outside for various purposes (robbery of valuables, homicide, abduction, car theft, etc.). The vehicle is usually built in such a way as to resist penetration by bullets from firearms. However, hi-powered military guns can damage the vehicle's structural parts and may cause high velocity fragments (secondary bullets) to be projected, which can seriously wound passengers. The authors report the results of an investigation carried out to establish the dynamics of the wounding of a policeman seated in a valuables transport van during a robbery.

In June 2002, along a main road in the district of Bari, a Fiat Ducato armored van was assaulted by unknown muggers and was robbed of a large sum of money. After the robbery, 25 cartridge shells were found lying in the road belonging to three different military weapons (a .223 Remington automatic rifle and two 7.62x39 Kalashnikov assault rifles). One of the members of the crew inside the van was wounded in the right buttock, diagnosed at the hospital E.R. as a firearm injury with retention of the bullet. The victim underwent surgery to extract the foreign body, a steel rod with an irregular circular section of about 7 mm in diameter and 3 mm in thickness with a concave surface while the other convex side was lined by thin parallel longitudinal stripes. These features excluded the possibility that this metal fragment could be a component of a firearm cartridge. Inspection of the van revealed no less than 29 points of bullet damage; 7 of these had struck glass surfaces (the windscreen and left back window) without breaking them, and the others had pierced the metal bodywork of the vehicle; 7 in the posterior part; 5 in the anterior part; and 10 in the left lateral part (including the driver's door). The 7 holes discovered in the rear of the vehicle were regular in shape, almost perfectly circular, with clean borders and a diameter of around 6 mm; all the other holes had different characteristics (irregular shape, 8-9 mm diameter, etc.). Further examination of the rear part of the vehicle showed that two bullets had reached and penetrated the armor plating protecting the cabin, perforating the backs of the anterior seats; the right one was completely pierced and blood stains were found on the anterior covering. The two seats were removed and disassembled; in the back of the left seat two very small metallic fragments were recovered. Nothing was found in the back of the right seat. The above data enabled the authors to conclude that one of the .223 Remington bullet had penetrated the rear part of the vehicle, with a horizontal trajectory, and detached the fragment of armor plating that had wounded the victim.

The recommended strategies for accurately determining causes of injury are discussed, including ballistic and medical data that have to be considered and evaluated in order to gain an overview of the mechanisms underlying injury of armored vehicle occupants.

**Armed Robbery Assault, Armored Vehicle, Occupant Injuries**