

Firearm wounds: an overview

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A firearm may be generally defined as an assembly of a barrel and action from which a projectile is propelled through the deflagration (rapid burning) of a propellant (gunpowder). The invention of gunpowder led to the development of firearms. Gunpowder first appeared in use in China over a thousand years ago, but was used primarily in firecrackers and only sparingly in weapons for military use. Firearm injuries are well known for their typical findings and appearances in routine autopsies as well as medicolegal examinations of living person. Usually the range of firearm is given on the basis of findings of effects of remnants of gunpowder discharge on the body and the same is substantiated by the ballistic expert who examines the alleged weapon of offence and performs various tests on it to confirm about the use of particular weapon. Firearm injuries cause both serious morbidity and death in children and adolescents. Firearm injuries are an important and preventable cause of morbidity in the pediatric age range. The major cause of injury in young children was an adolescent, most hospitalizations resulted from assault. Hospitalizations due to suicide attempts were uncommon and had a high (35%) in-hospital death rate, in keeping with the very case-fatality rate of suicide attempts made with a firearm. Firearm injuries resulting in hospitalization have a large economic impact. To understand firearm injury better, the Centers for Disease Control and Prevention (CDC) initiated the Firearms Injury Surveillance Study in June 1992. A vast majority of suicidal gunshot wounds are contact wounds. The most difficult problem is distinguishing a distant from a contact wound. In deciding the range of the firearm discharge, the pattern and distribution of gunpowder residue is of paramount importance. The factors that can affect the amount and distribution of gunshot residue (GSR) on skin and clothing include: (1) firing distance, (2) length and diameter of the firearm barrel, (3) characteristics of the gunpowder, (4) angle between the firearm barrel and target, (5) characteristics of the cartridge, (6) the environment (moisture, wind, heat), (7) type of clothing, (8) intermediate targets, and (9) characteristics of the target (tissue type, putrefaction, blood marks). Estimating the range of firearm discharge is one of the most important aspects of the interpretation of firearm wounds.

REFERENCES

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