



G31 New Approach to the Traditional English Classification of Trauma and Bone Implications

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After attending this presentation, attendees will obtain knowledge on the current use of various types of trauma injury classifications and terminology, in both Forensic Pathology (FP) and Anthropology (FA). The differences existing in trauma classification among professionals and countries are also highlighted.

This presentation will impact the forensic science community by contributing to the knowledge of various types of trauma classification, apart from basic ones such as blunt, sharp, and projectiles, so that each forensic professional can comprehend the types of documented soft and skeletal injuries. Combined types of trauma like sharp-blunt, penetrating-blunt, and sharp-penetrating will be emphasized.

In English, broad trauma categories, namely blunt, sharp, and projectile, are used to classify, describe, and teach characteristics of injuries; however, the categories are not mutually exclusive of each other. In Portuguese or Spanish *contundente* (blunt), *cortante* (sharp), and *perforante* (perforating/penetrating), previously inspired in early 20th-century French authors and Latin nomenclature, do not express exactly the same meaning as that of English terms. *Contundir* means to beat with force, crushing the tissues with a stick or a rod. For cutting (*cortar*), a knife (used either to cut or penetrate/stab a body), a fragment of glass, a single sheet of paper, or whatever sharp-edged instrument that can actively divide the myofibers is used.^{1,2} The injuries will be wider rather than deep with rectilinear and clean edges. Perforating/penetrating trauma (*perforante*) results from a needle or a conic instrument which has a point and where the depth is superior to the length of the injury. Thus, projectile trauma is a penetrating-blunt injury for many European pathologists, because the projectile (a bullet or a pellet) will injure the skin and soft tissues underneath with a rim of contusion before the penetration. The same pathophysiology applies for injuries that occur from metal spikes, farm forks, and wooden stakes — when the spike is driven through the skin, an inversion will occur with contusion of the margins. In this case, the designation blunt-penetrating (*perfuero-contundente*) is not absolutely new and can be found in European/English literature.³

The point is that the basic tools/weapons (blunt, sharp, and perforating/penetrating) can be used in different and combined forms to produce sharp-blunt (*corto-contundente*), sharp-penetrating (*corto-perforante*), or penetrating-blunt (*perfuero-contundente*) injuries that can be differentiated according to their characteristics, either in soft tissues or bone, that resulted from the speed of the external loading conditions, the point of impact, the resistance of the tissues underneath, etc. The exact meaning of these concepts and their connection with the English terms will be expounded upon along with examples and case studies.

The terminology variants are not important in and of themselves; however, they should be used properly after a good morphologic description of injuries, in an attempt to avoid confusion and misinterpretation of lesions and the suspected weapon, both in autopsy or anthropologic reports, in criminal investigations or in personal testimonies in court.

The final purpose of this presentation is to initiate discussion on this topic and contribute to the clarification of the trauma terminology according to different disciplines and parts of the body that are being studied (bone, skin, etc), always attempting to arrive at the weapon/tool that produced the lesions, although this is sometimes difficult or impossible.

References:

1. Lopes C. (1982). Guia de Perícias Médico-legais, 7th ed. Porto
2. Fávero F. (1991). Medicina Legal. 12th Ed. Villa Rica, Belo Horizonte
3. Saukko P, Knight B. (2006). Knight's forensic pathology. 3rd. Ed. London: Arnold

Classification of Trauma, Sharp-Blunt, Penetrating-Blunt