



Pathology Biology Section – 2007

G84 Suicidal and Homicidal Sharp Force Injury: A Five Year Retrospective Comparative Study of Hesitation Marks and Defense Wounds

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After attending this presentation, attendees will gain better knowledge of hesitation marks and defense wounds pattern in sharp force injury and its correlation to suicidal and homicidal manner of death.

This presentation will impact the forensic community and/or humanity by providing a systematic evaluation of hesitation marks and defense wounds in sharp force injury in the Quebec province (Canada) forensic laboratory from 2000-2004.

In sharp force injury cases, forensic pathologists often have to determine whether the injuries were self-inflicted or not. The presence of hesitation marks or defense wounds, respectively associated to suicide and homicide, has been accepted as useful characteristics in the evaluation of manner of death. However, very few studies in the forensic literature have systematically analyzed the features differentiating hesitation marks and defense wounds.

Over a five year period, in the Quebec province (Canada), all cases of suicidal and homicidal sharp force injury were retrospectively reviewed for the presence of hesitation marks and defense wounds. For each case, data on incidence, gender, age, hesitation marks/defense wounds localization, fatal wound(s) pattern and blood alcohol concentration (BAC) was compiled. Data was statistically analyzed in order to highlight differences between hesitation marks and defense wounds.

Hesitation marks: A total of 58 sharp force suicides (7 women; 51 men) were found, of which 74% (n=43) were positive for hesitation marks. Seventy-one percent of women and 74% of men presented hesitation marks and women showed a significantly higher amount of hesitation marks compared to men ($p<0.05$). Victims were aged from 23 to 83 years with an average age of 43 years for cases with hesitation marks. The three most frequent locations of hesitation marks were neck area in 46% of cases, followed by left thoracic area (44%) and wrists (39%). A positive correlation was found between the amount of fatal wounds and the amount of hesitation marks ($p<0.001$). When only one fatal wound was found, absence of hesitation marks was noted in 39% of cases. No correlation was found between BAC and presence of hesitation marks.

Defense wounds: A total of 149 sharp force homicides (59 women; 60 men) were found, of which 61% (n=91) were positive for defense wounds. A significant difference between male and female incidence was noted (71% compared to 54%; $p<0.05$) and women showed a significantly higher amount of defense wounds compared to men ($p<0.001$). Victims' age ranged from six months to 82 years with an average age of 42 years for cases with defense wounds. In terms of location, defense wounds were most frequently found on hands (78%), followed by arms (48%) and forearms (34%). Victims presenting with defense wounds showed a four times higher average amount of non-defense wounds. Absence of defense wounds was noted in 80% of cases showing only one fatal wound. A negative correlation was revealed between BAC and amount of defense wounds ($p<0.01$). Indeed, the highest amounts of defense wounds were noted in the absence of BAC, while the highest BACs were associated with the absence of defense wounds.

In conclusion, this retrospective study systematically compares features of hesitation marks and defense wounds and gives new insight on medicolegal expertise in sharp force injury cases.

Hesitation Marks, Defense Wounds, Sharp Force Injury