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G36 Neck Findings in Hanging and Strangulation Cases That Underwent Autopsy in Adana, Turkey

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The goal of this presentation is to demonstrate the neck findings in hanging and strangulation cases.

This presentation will impact the forensic science community by presenting macro-morphological findings in hanging and strangulation cases during the autopsy performance.

Deaths due to the mechanical forces applied to the neck area are frequently encountered in forensic medicine practices. Among these, hanging accounts for the majority of the forensic cases. It is seen in the majority of the studies performed in various regions of the world that hanging is the leading method of suicide. Strangulation cases are also seen though not common. The origin of the event is sometimes suspicious in the case where the crime scene has been altered, or in the case that the corpses had been pulled down or had fallen down because the string had broken.

In these cases, different problems may be in question and the direction of the inquest may change. Regarding the frequently encountered death cases due to the mechanical forces applied to the neck area caused by the above mentioned reasons, assessment and interpretation of the neck findings have important place for the forensic medicine. The consistency of these findings with the inquest and the information about the crime scene, as well as the method used and the presence, type, and characteristic of the traumatic findings in the neck area gain special importance. Fracture in the bone and cartilage tissues of this area and hemorrhage into the soft tissues are of great importance for the diagnosis as well as for the etiology to be exposed. These lesions are considered the indicators of a mechanical force applied to this area. Therefore, forensic medicine specialists carefully examine the neck during autopsies, remove the hyoid bone and thyroid cartilage, and completely evaluate. This present study was conducted in Adana province that is located in South Turkey, has a population of 2.5 million with high rate of unemployed subjects, and is exposed to high rate of internal migration because of extensive land available for agriculture. The records of the autopsies performed at the Group Presidency of Adana Institute of Forensic Medicine (IFM) between the years 2008 and 2009 were retrospectively reviewed. One-hundred and seventy cases (6.2%) that were assessed to have died due to a mechanical force (hanging or strangulation) were included in the study among 2,726 cases. Of the cases, 159 died of hanging and 11 died of strangulation. It was determined that 104 of the cases (61.2%) were male and 66 were female, hanging accounted for 93.5% and strangulation accounted for 6.5%, all of the hangings were suicidal, whereas the strangulations were murder. The age of the cases ranged between 4 and 86 years; the majority of the cases (n=37, 21.7%) were between 21 and 30 years of age, whereas 32 cases were between 11 and 20 years of age. It was determined that two girls between the ages 0 and 10 years died of strangulation. It was observed that 121 of the hanging cases were typical (the node was behind the neck), whereas 38 were atypical. Thyroid cartilage fracture was determined in 43 cases (25.3%) from hanging and strangulation, whereas hyoid bone fracture was determined in 25 cases (14.7%) and both thyroid cartilage fracture and hyoid bone fracture were determined in 11 cases (6.5%). Fracture or dislocation in cervical vertebra was observed in seven cases. A total of 86 cases (50.6%) had thyroid cartilage, hyoid bone, and cervical vertebra findings. It was determined that, 90 of the cases (52.9%) had hemorrhage into the soft tissues either with or without fracture and that 60 cases (35.3%) had no finding other than skin lesions. Both thyroid cartilage and hyoid bone fractures were observed in 2 cases (18.2%) died of strangulation, whereas only hyoid bone fracture was

observed in one case and hemorrhage into soft tissues was observed in five cases. It was determined that the neck findings were higher in hanging cases as compared to the strangulation cases. Toxicological analyses revealed that ethanol was present in 18 cases with a range 34mg/dl to 334mg/dl. This present study was performed to put forward the prevalence of neck findings in the hanging and strangulation cases that are frequently come across by the forensic medicine specialists, as well as to discuss the results with the information in the literature. **Hanging, Hyoid Fracture, Thyroid Fracture**