E30 Suicidal Hanging: A Prospective Autopsy-Based Study of 650 Cases

Mantaran Singh Bakshi, MBBS, All India Institute of Medical Sciences, C - 78, Defence Colony, New Delhi 110024, INDIA; Sudhir Kumar Gupta, MD, AIIMS, Dept of Forensic Medicine & Toxicology, New Delhi 110029, INDIA; Deepak Prakash, MD, All India Institute of Medical Sciences, Rm No. 605, Masjid Moth Resident Doctors Hostel, New Delhi 110049, INDIA; Piyush Sharma, MD, All India Institute of Medical Sciences, Rm No-302, Dept of Forensic Medicine, New Delhi, Delhi 110029, INDIA; and Shivani Dhaka, MBBS, AIIMS, New Delhi, Deptof Forensic Medicine, AIIMS, New Delhi, Delhi, INDIA*

After attending this presentation, attendees will better appreciate the importance of gross and significant microscopic findings in a case of suicidal hanging and will appreciate the underlying reasons for suicide.

This presentation will impact the forensic science community by presenting cases of fatal pressure on the neck in suicidal hangings. This presentation will add to the relevant histopathological findings as well as introduce new findings and even disprove outdated and doubtful assumptions.

Hanging is the leading method of suicide in India.[1] Of all asphyxial deaths, difficulties most commonly arise in distinguishing cases of suicidal hanging from other forms of ligature asphyxia without any obvious classical external findings.

In this study, 650 cases of suicidal hanging were studied. This study was conducted at a tertiary care center in the capital territory of India, New Delhi. The most common age group involved in this study was 15 years to 30 years of age. It was observed that the majority of the cases were male (63%) and the most common ligature material used was a chunni/saree (Indian female attire, as compared to the rope which was seen in other studies).[2-5] Special attention was paid to the ligature mark produced by the clothing materials, as they produce a faint, broad mark with an intervening normal area. The ligature mark was confirmed with an histopathological analysis for signs of inflammation, such as leucocyte infiltration. On microscopic examination of the neck muscles after layer-wise dissection, hematoma and inflammatory findings were seen in the platysma (17%), sternocleidomastoid (10%), mylohyoid (7%), geniohyoid (2%), stylohyoid (12%), and digastrics muscles (1%). The fracture of the thyroid cartilage was not seen in this study, but, surprisingly, a hyoid bone fracture was found in 3% of the cases, which is comparable with the study done by Feigin et al.[6] Amussets sign, a transverse intimal tear of the carotid artery, was seen in 12.5% of the cases, which is comparable with the findings of Hejna.[7,8] A histopathological examination of the sub-mandibular salivary gland perifollicular congestion, a perifollicular hemorrhage, follicular hemorrhage of the sub-mandibular gland was observed in 30% of cases and capsular and cortical hemorrhage in lymph nodes was observed in 32% of the cases.

The psychological autopsy of cases revealed 320 cases had a history of clinical depression, 126 had family strife and the rest suffered from failure due to poor academic performance.

In conclusion, this study sheds light especially on the gray areas in which difficulty arises in differentiating cases of suicidal hanging from other forms of asphyxial deaths, as well as testing the viability of pre-existing dogmas prevalent in the identification of cases of suicidal hanging. This study also touches upon the socio-cultural impact of the manner involved in cases of hanging, which are vastly different from those existing in the western world, and is thus an attempt to amalgamate this knowledge and introduce a new understanding of hanging at a global level. As suicide rates tend to skyrocket and with hanging being the most prevalent method, it is paramount that practitioners set criteria for identifying such cases to reduce the doubtful opinions which can sometime arise after autopsy in these cases. A psychological inquiry into the inciting cause of such cases will help in discovering trigger factors for such incidents and help in formulating future prevention programs.

*Presenting Author

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Suicidal Hanging, Ligature, Psychological Autopsy