



F27 Study of the Palatal Rugae Patterns Among the Indians and Chinese at Manipal, India

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After attending this presentation, attendees will: (1) gain knowledge about the existing problem of identification in mass disasters and the role of a forensic odontology in relation to this; (2) be briefed on the various comparative data and techniques that are useful in establishing the identity of an individual with specific stress on the upcoming field of palatoscopy or rugoscopy; and, (3) gain information on the various palatal rugae patterns in an individual and application of this knowledge in a given population to aid in establishing identity.

This presentation will impact the forensic science community by shedding new light on the less explored field of rugoscopy. It provides sufficient information of the biological diversity present in this part of the Indian subcontinent. It may prove useful in comparison to other studies of a similar nature and can be applied to various other populations. This research will arouse an interest in others to conduct a similar study in their respective countries which may go a long way in aiding the establishment of the identity of an individual. In other words, we, the medical community, will be better prepared in facing mass disasters to help mankind.

In this world of natural and man-made disasters, identification of an individual becomes an important task for any Disaster Victim Identification team. In almost every disaster, there is an urgent and pressing need to identify the victims on behalf of the next of kin. Comparative data/techniques play a vital role to aid in identification.

Palatoscopy or palatal rugoscopy is the name given to the study of palatal rugae in order to establish a person's identity.¹ Despite the ongoing problem of describing palatal rugae pattern, qualitatively and quantitatively, their uniqueness to individuals has been recognized as providing a potentially reliable source of identification.²⁻⁴ Rugae patterns have been studied for various purposes mainly in the fields of anthropology, comparative anatomy, genetics, forensic odontology, prosthodontics, and orthodontics.⁵ The present study is an attempt to compare the palatal rugae patterns among the Indians and Chinese students at Manipal from a small part of peninsular India.

Maxillary dental casts of 63 Indian (32 males, 31 females) and 61 Chinese (31 males, 30 females) students of the age group 17 – 23 years were assessed for the length, shape, and unification of rugae based on the classification by Thomas and Kotze (1983).⁶ Association between rugae forms, ethnicity, and gender were tested using 2-way ANOVA (Univariate Analysis of Variance) and contingency tables.

Statistical analysis showed the total number of rugae on the right side of the palate was greater among the Indians than the Chinese. Females had a larger number of curved and straight rugae whereas males had more wavy rugae in both races. The incidence of rearward-directed rugae was greater among the Chinese females and Indian males than their respective counterparts. There was no significant difference in the converging and diverging type of rugae among the Indian and Chinese populations of both sexes.

The statistical analysis of the data revealed significant differences among the Indians and Chinese. Rugae patterns are complex and are so open to individual interpretation that a very careful observation is essential. These patterns are highly individualistic and could form a useful tool to aid in identification, especially in cases of mass disasters.

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