

16th International Symposium on Dental  
Morphology (ISDM)

1st Congress of the International Association for  
Paleodontology (IAPO)

# **Programme & Book of abstracts**

August, 26 – 30, 2014

Zagreb, Croatia

### **Is the palatal rugae pattern as unique as a fingerprint?**

Senad Muhasilović (1), Goran Batinjan (2), Marin Vodanović (3)

1 – Private Dental Practice, Sarajevo, Bosnia and Herzegovina

2 – Private Dental Practice, Zagreb, Croatia

3 – Department of Dental Anthropology, School of Dental Medicine, University of Zagreb, Croatia

[dr\\_muhasilovic@yahoo.com](mailto:dr_muhasilovic@yahoo.com)

Determining an individual's identity can be a difficult task in cases of traffic accidents, mass disasters, wars, natural disasters, etc. The information collected from victims for accurate identification must be precise and include all objective findings. If the accident results in a full or partial loss of the jaw and teeth, identity establishing becomes considerably more complex, thus it is necessary to look for alternative identification options. The palatal rugae patterns are widely considered to remain unchanged during an individual's lifetime. Given the invariance and stability of the rugae pattern, the palatal rugae themselves are equivalent to fingerprints and thus considered relevant for the identification of victims. Uniqueness, postmortal resistance and stability of the palatal rugae represent an ideal parameter for forensic identification. The rugae pattern has the potential to remain intact by virtue of their internal position in the head when most other anatomical structures are destroyed or burned. The aim of the study is to establish, individual identity using palatal rugae patterns. The research consisted of 80 study models, 51% were females and 49% were men, separated into three age groups: 10 to 20 years (42%), 21 to 40 years (33%) and over 41 years old (25%). This study treats the shape, length and width of the rugae as well as their distance from both palatine raphe and incisive papilla. Each individual had different rugae patterns including fraternal twins and the rugae patterns were not symmetrical, both in number and in their distribution regardless of the gender and age. This preliminary study has shown that there are no two identical palates in terms of their rugae pattern. The palatal rugae possess unique characteristics as they are absolutely individualistic and therefore, can be used as a personal oral print for identification in forensic cases.

Keywords: palatal rugae; personal identity; rugae pattern