Morphological variability of the human mandible canal: a Cone-Beam Computed Tomography evaluation

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ABSTRACT

Objective: To evaluate regional variability in neurovascular structures of human mandibles from different geographical origins.

Materials & methods: The anatomical variability of neurovascular canals and their relation to the tooth roots of 96 human mandibles deriving from
different geographic regions. They were collected and analysed using CBCT.

Results: Geographical analyses indicated that the neurovascular mandibular canals and the distance to tooth roots vary significantly amongst geographical
areas. Discriminant analysis showed that Greenlandian mandibles could be differentiated from other geographically distributed human mandibles, while
Brazilian and Belgian mandibles showed no distribution overlapping with Indian and Congolese mandibles.

Conclusions: Specific neurovascular canal features may characterize specific geographic populations, which would assist in determining geographical
origin of unidentified human beings, and in preventing the potential surgical and pathological risks.