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The thickness of the cortical bone in different maxillaries using medical images

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Abstract

The aim of the present study was to investigate whether there is a relationship between the thicknesses of the cortical bone of mandible human and the age and the sex of patient. In this work the measure of the cortical bone thickness was obtained in different computed tomography (CT) dental of medical images. Different human mandibles were scanned using high resolution micro-CT instrument in which many axial slices were obtained, see figure 1. Pixel by pixel for each slice and using image control system software, different layers were measured. A total of four medical images were studied and observed. Two different groups were characterized. The first one, with two female mandibles (F): an old and a young patient. The second group of two males mandibles (M), with similar age. A comparison between the male and female sex was also obtained. The cortical bone thickness of the mandible may be affected by tooth extraction, age and sex patient. The use of this type of information is useful for complementary diagnostic information and treatment planning.

Key words: mandibles, maxillaries, cortical bone, CT.

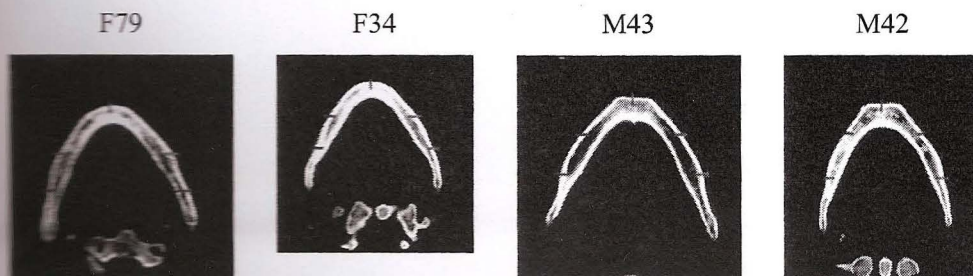


Fig. 1 – 2D scans of mandibles and points for measure the cortical bone.

References

Natali A. N., "Dental biomechanics", Taylor & Francis, 2003.

Polat P., Ceylan G., Suma S., Yanikoglu N., "The effects of tooth extraction on cortical thickness and bone mineral density of the mandible: evaluation with computerized tomography", Turk J Med Sci 31, pp.271-274, 2001.