MEASURMENT OF MAXILLARY ALVEOLAR BONE DENSITY AT 13-15 YEARS AGE USING SPIRAL COMPUTERIZED TOMOGRAPHY

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Abstract

Bone density is a major factor that affect mini implant primarily stability. No Iraqi studies had been evaluated bone density related to mini-implant placement for orthodontic anchorage at age 13 -15 years.

The present research aims to evaluate gender, side and site differences in the bone density at various orthodontic implant sites for the maxillary alveolar bone (cortical; buccal and palatal and cancellous).

The sample of this study consisted of CT images for patients who were attending Al. Shaheed Ghazi Al-Hariri Hospital/the Computerized Tomography department from January 2014 until May 2014. Twenty nine individuals (16 males and 13 females) had subjected to clinical examination, then 64-multislice computed tomography scan data were evaluated and bone density was measured in Hounsfield unit at **21** points (**9** points for each side and **3** points between the right and left central incisors).

The results obtained showed that there were no significant differences in bone density between males and females and between the left and right sides. There are no significant differences in bone density between the maxillary buccal cortical bone and the palatal cortical bone except at lateral incisor and canine point where the palatal side had higher bone density than buccal side. The mean bone density of the cancellous bone in the anterior part was higher than that in the posterior of the maxilla.

These differences in bone density between and within regions of the maxilla must be considered when placing mini implants and may provide valuable information when selecting sites, size, angle and placement methods for mini implant in the dental arch.