

PC-II-6. Thickness of posterior palatal masticatory mucosa : The use of computerized tomography

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Background

Periodontal plastic surgery is used to fulfill both the esthetical and functional demands of patients. The palatal masticatory mucosa is the main donor site for connective tissue, and the thickness of the graft tissue obtained is an important factor for the success of this technique. The aim of this study was to measure the thickness of masticatory mucosa in the posterior palatal area using computerized tomography (CT).

Materials and methods

The thickness measurements were performed on CT images of one hundred adult patients who underwent CT on the maxilla for implant surgery. Twenty-four standard measurement points were defined in the hard palate according to the gingival margin and the middle palatal suture. The radiographic measurements were utilized after calibration. The data was analyzed to determine the differences in the mucosal thickness according to gender, age, tooth positions and depth of the palatal vault.

Results

The overall mean thickness of the palatal masticatory mucosa was 3.83 ± 0.58 mm ranged from 2.29mm to 6.25mm. Females had significantly thinner mean masticatory mucosa (3.66 ± 0.52 mm) than males (3.95 ± 0.60 mm) ($p < 0.0001$). The thickness of the palatal masticatory mucosa increased with age. The mean thickness according to teeth site were 3.46mm (Ca), 3.66mm (P1), 3.81mm (P2), 3.13mm (M1), 3.31mm (Mi) and 3.39mm (M2). There was an overall increase in the thickness of the palatal masticatory mucosa as the distance from the gingival margin to the middle palatine suture increased with the exception of the Ca-d region. There was no significant difference in the thickness of the palatal masticatory mucosa between the high and

low palatal vault group.

Conclusion

The palatal masticatory mucosa thickness increased from the canine to premolar, but decreased at the first molar and increased again in the second molar region, with the thinnest area at the first molar region and the thickest at the second pre-molar region. Within the limits of the present study, the canine to premolar region appears to be the most appropriate donor site which contains a uniformly thick mucosa. Using computerized tomography can be considered as an alternative method for measurement of palatal soft tissue thickness.