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Anterior hard palate for orthodontic miniscrew insertion

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Background: Informative data about both hard and soft tissues of a patient's palate are crucial before insertion of a miniscrew.

Methods and Materials: This study consisted of 37 adult patients (21 females and 16 males) aged between 20 to 50 years with the mean age of 34. 81 (±9. 52) years. Hard tissue and soft tissues of the anterior hard palate was assessed using a CBCT device. Two anterio-posterior reference lines at 4 and 8 mm distal to the posterior wall of incisive foramen and 5 parallel medio-lateral lines at the suture with 3mm intervals on the sides were selected and measurements were performed at the intersecting points in ninety-degree paracoronal reconstructed views. Reliability of the method was assessed using an interclass correlation coefficient (ICC) and a P<0. 05 considered significant.

Results: A great variability was discovered between the individuals. The overall ICC was 0. 99. Total vertical bone height decreased posteriorly and laterally. Mucosal thickness decreased posteriorly, but increased laterally. Men had thicker bone than the female patients. Age had site- and gender-specific effect on bone thickness. Age and gender had no effect of mucosal thickness. Palatal cortical thicknesses were higher than the nasal cortical thicknesses. Generally, right and left side had no clinically significant difference, but some site-specific statistically differences were found between the palatal sides.

Conclusion: Within the limits of the study, palatal miniscrews may be placed best 4mm posterior to the incisive canal and 3mm to the paramedian in terms of balanced low mucosal thickness and high vertical bone depth.

Biography

Arash Poorsattar Bejeh Mir was born and educated in Iran. He started medicine at the age of 18 in 2001, and entered internship in 2007. He continued his education in the field of dentistry from 2008 to 2013. He is currently a researcher at Babol University of Medical Sciences (Dental Materials Research Center) and also at AJA University of Medical Sciences (Photodynamic Therapy, Laser Research Section). He has published 45 national and international papers and two handbooks in various fields. Also, he served as a reviewer of more than 10 prestigious international dental Journal. His in-depth interest is orthodontics and dentofacial orthopedics, seeking higher education in this discipline.

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