

R. Sarig, A.D. Vardimon, C. Sousan, L. Benny, O. Sarne, I. HersHKovitz, N. Shpack

Pattern of maxillary and mandibular proximal enamel thickness at the contact area of the permanent dentition from first molar to first molar. *Am. J. of Orthodontics and Dentofacial Orthopedics*, Vol. 147(4), pp. 435-444, 2015

Introduction: Proximal enamel thickness (PET) at the mesial and distal contact areas of the complete permanent dentition has not been previously reported. Anatomic investigation of PET is essential for interproximal reduction treatment. Our objectives were to measure the PETs of the complete maxillary and mandibular dentitions at the contact areas, to compare the PETs of adjacent teeth, and to evaluate the vertical position of each contact area. Methods: We evaluated 720 extracted teeth; of these, 109 intact teeth were selected. The mesial and distal contact areas were demarcated, and each tooth was embedded in transparent epoxy resin. Blocks were prepared so that the 2 demarcated contact areas were exposed, and 6 measurements were taken and statistically analyzed. Results: Both jaws showed the same PET pattern characterized by 5 features: PET increased progressively from incisor (0.63 mm) to first molar (1.48 mm). Per tooth, mesial and distal PET did not differ. Total maxillary (26.86 mm) and mandibular (24.52 mm) PETs were similar. Paired PETs at the interproximal interface were similar, with the exception of the lateral incisor-canine interfaces. From incisor to first molar, the contact area becomes located farther gingivally. Conclusions: The existing guideline of maximal 0.5-mm interproximal reduction per 2 adjacent teeth should be kept in the anterior region and could be increased to 1 mm in the posterior region, when an equal amount is removed.