

## Brazilian Oral Research

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### Abstract

[CONSTANTE, Isa Geralda Teixeira](#); [DAVIDOWICZ, Harry](#); [BARLETTA, Fernando Branco](#) and [MOURA, Abilio Albuquerque Maranhão de](#). Study of the areas and thicknesses of mesiobuccal root canals prepared by three endodontic techniques. *Braz. oral res.* [online]. 2007, vol.21, n.2, pp. 118-126. ISSN 1806-8324. doi: 10.1590/S1806-83242007000200005.

The purpose of this study was to compare, *in vitro*, by means of computerized analysis of digital radiographic images, the anatomic alterations produced in the mandibular molar tooth dentinal walls of mesiobuccal canals with severe curvature by three different endodontic techniques: Progressive Preparation, Staged and Serial Preparation. A selection was made of 45 extracted, human, mandibular molars, with root curvatures greater than 25°. They were divided into three groups for every technique studied, which were then sub-divided into three sub-groups in accordance with the position of the curvature along the root: cervical, median or apical. After access surgery and tooth length determination, the canals were filled with 100% Barium Sulphate radiological contrast and the teeth were then radiographed with a direct digital radiography system, using a special apparatus capable of keeping the samples in the same spatial position during the different radiographic takes. After the above-mentioned endodontic techniques had been performed, the teeth were again filled with Barium sulphate and were also radiographed under the same previously mentioned conditions. The pre- and post-operative digital images were then analyzed in two computerized programs, AutoCAD 2004 and CorelDraw 10, to assess, respectively, the areas and the horizontal alterations which occurred in the internal and external walls of the root canals. The results indicated that although no significant differences among the techniques were shown in the statistical analysis, in a descriptive analysis the Progressive Preparation technique was shown to be more regular, uniform and effective.

Keywords : Root canal therapy; Root canal; anatomy & histology; Digital radiography; Contrast media.

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