

Comparative Evaluation of Root Canal Configuration in the Mandibular Left and Right Second Premolars: a CBCT study in an Iranian Population

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Abstract

Background and Aim: Mandibular second premolars show a great diversity in root canal configuration. The aim of this study was to assess the root canal morphology in the mandibular left and right second premolars using CBCT imaging technique.

Materials and Methods: In this descriptive study, 457 CBCT images including human mandibular left and right second premolars were evaluated. CBCT scans were assessed in three orthogonal planes and the differences in the number of roots and root canals were recorded. Data were analyzed by Chi-Square test. The significance level was set at $p < 0.04$.

Result: From 457 mandibular left and right second premolars, on the left side 94.3% of the teeth had one root and 5.7% had two roots. On the right side, 95.6% of the teeth had one root and 4.4% had two roots. On the left side, 77.9% of the teeth had a single canal and 22.1% had two canals and on the right side 83.4% of the teeth had a single canal and 16.6% had two canals. There was a significant difference in the number of root canals between mandibular left and right second premolars ($p=0.036$) but no significant difference existed regarding the number of roots ($p=0.364$).

Conclusion: It seems that the root canal configuration differs between the mandibular left and right second premolars in the studied Iranian population.

Keywords: Cone-Beam Computed Tomography, Mandibular, Premolar, Root Canal, Anatomy