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THE ROOT CANAL ANATOMY OF MANDIBULAR INCISORS

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Relevance. The goal of chemomechanical preparation is to remove the inner layer of the dentin while allowing the irrigant to reach the entire length of the root canal. Unfortunately, canal preparation results are adversely affected by the highly variable root canal anatomy. The presence of additional canals or deviations of the main root canals need to be recognized in order to avoid incomplete instrumentation. Usually, teeth with single roots present single canals as in mandibular and maxillary anterior teeth. However, particular tooth types, such as mandibular incisors, are recognized as exhibiting a distinct range of variations in the morphology of their root canal system. In mandibular incisors, often a dentinal bridge is present in the pulp chamber dividing the root into 2 canals. The 2 canals usually join and exit through a single apical foramen, but they may persist as 2 separate canals.

Aim: to describe the anatomy of mandibular central and lateral incisors using cone-beam computed tomographic imaging.

Materials. Cone-beam computed tomograms (CBCTs) of 45 patients with 180 healthy, well-developed mandibular incisors were studied. Radiographic examination by CBCT was conducted as part of their treatment planning. The following observations were made using CBCT: the number of roots; the number of canals; canal configuration.

Methods. 45 cone-beam computed tomograms (CBCTs) of dental patients were examined. The analysis of the results was carried out using Microsoft Excel software.

Results and their discussion. 1 root was found in all examined teeth. The frequency of occurrence of 2 root canals was 26,6%. The prevailing configuration of the root canal in the transversal cuts in all teeth examined was oval.

Conclusion: CBCT is clinically useful for detection of two canals and determines the configuration of root canal in mandibular incisors.