



## Revascularization of immature permanent teeth with apical periodontitis

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In the infected immature tooth with periapical involvement, the pulp is considered to hardly exist in the canal and periapical area. Such a tooth receives apexification procedure, because revascularization of the pulp chamber is in principle not expected. Apexification is beneficial to induce further development of an apex to close the foramina, but does not promote the thickness of the entire canal wall dentin. It may be possible for the pulp to be only partially necrotic and infected when an extremely large communication from the pulp space to the periapical tissues exists with a very young tooth. If this were the case, vital pulp in the apical part of the canal could proliferate new pulp into the coronal pulp space by the successful removal and disinfection of the necrotic infected coronal pulp.

In this case report, immature teeth with periapical involvement were treated: 1) a mandibular second premolar in a 13-yr-old patient, and 2) a mandibular central incisor in a 7-yr-old patient. Instead of the standard root canal treatment, either antimicrobial agents or calcium hydroxide compound was dressed in the canal without any mechanical debridement of the root canal in order to maintain any residual pulp tissue along the canal and to encourage revascularization. The tooth favorably responded to the treatment, and a successive root development with an apical closure was confirmed by radiographic examination. These cases indicate healing potential of the young permanent tooth pulp.

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