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Biological reinforcement of compromised permanent incisors in children

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Introduction: To date, no commercially available pre-manufactured post-core meets all ideal biological and mechanical properties of tooth structure. Currently, secure methods of sterilization and storage are available to ensure the safety of a tooth or tooth fragment from tooth bank. These methods encourage the use of biological post-core made from natural-extracted teeth represents a feasible option for strengthening of root canal and presents potential advantages.

Purpose: The aim of this study is to evaluate the clinical and radiographic success of biologic primary incisors as intra radicular post-core reinforcement in management of compromised upper permanent central incisors in children.

Materials & Methods: From twelve children aged 10-15 years, compromised upper permanent central incisors were reinforced by human extracted primary incisors. The prepared primary incisors were cemented with resin cement. Both permanent and primary crowns were prepared to receive temporary acrylic jacket crowns. Clinical assessments of jacket crowns, gingival health, reinforced permanent teeth and intra-radicular primary incisors were recorded. The children were followed up clinically and radiographically every 3, 6, 12 and 18 months.

Results: I. Clinical results: Nine out of twelve children (75%) showed clinical success of biologic reinforcement and three patients (25%) showed clinical failure. Two of them showed complete displacement and one showed fracture during follow up period. Gingival health showed that no obvious signs of inflammation in about (83%) at the start of study and decline to about (55.6%) at the end of follow up. There were three cases showed mild gingivitis (33.3%), one case after 3 months and two cases after 6 months, which decline one case at 9 months to become three cases at the end of study. Two cases showed moderate gingivitis during 12 months follow up period and become only one at the end of study. II. Radiological results: It was found that, seven of children patients (77.7%) showed no peri-apical changes during recall time. Two cases showed peri-apical pathosis do not require immediate treatments during recall time and two cases showed peri-apical pathosis with sinus formation that required immediate treatment after 12 months of follow up that showed clinical and radiographic success after 18 months.

Biography

Talaat Mohamed Beltagy has completed his PhD in Pedodontics in 2001. Since 2013 he is an Associate Professor, Pedodontic, Oral Health and Preventive Dentistry Department Faculty of Dentistry, Tanta University, Egypt. He has published more than 20 papers in reputed journals and has been invited as a speaker in many international conferences.

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