

## بررسی آزمایشگاهی چند روش در استحکام بخشی دیواره‌های نازک ریشه دندانهای سنترال پس از درمان روت کانال

دکتر کاظم خسروی<sup>†</sup> - دکتر محمد رضا مالکی پور<sup>\*\*</sup> - دکتر فرزانه شیرانی<sup>\*\*\*</sup>

\*دانشیار گروه آموزشی ترمیمی و مواد دندان‌دانی دانشکده دندانپزشکی دانشگاه علوم پزشکی و خدمات بهداشتی، درمانی اصفهان

\*\*استادیار گروه آموزشی ترمیمی و مواد دندان‌دانی دانشکده دندانپزشکی دانشگاه آزاد اسلامی واحد خوراسگان اصفهان

\*\*\*استادیار گروه آموزشی ترمیمی و مواد دندان‌دانی دانشکده دندانپزشکی دانشگاه علوم پزشکی و خدمات بهداشتی، درمانی اصفهان

**Title:** Comparative evaluation of different methods of strengthening in endodontically treated maxillary central incisors with thin root walls

**Authors:** Khosravi K. Associate Professor\*, Malekipour MR. Assistant Professor\*\*, Shirani F. Assistant Professor\*

**Address:** \*Department of Operative Dentistry, Faculty of Dentistry, Isfahan University of Medical Sciences

\*\*Department of Operative Dentistry, Faculty of Dentistry, Khorasgan Azad University

**Background and Aim:** The structural rehabilitation of a pulpless tooth is critically important to ensure a successful restorative outcome following endodontic treatment. A post and core is often indicated for the retention and reinforcement of the final restoration. But, the clinical situation is significantly challenging if the root exhibits immature development or there is a thin root wall that can compromise the prognosis for a long-term successful treatment. The purpose of this in vitro study was to evaluate different methods of intraradicular reinforcement in structurally compromised roots.

**Materials and Methods:** In this experimental study, seventy two extracted intact maxillary central incisors with similar size, shape and root anatomy were selected. After root canal therapy in 60 teeth, an acrylic laboratory bur was used to thin the cervical area and simulate the thin dentinal walls of immature teeth. The preparation was performed through the palatal access and extended 5mm apical to CEJ. The remaining 12 teeth remained unprepared to serve as positive control group. Cases were randomly divided into six groups of 12 teeth each and restored as follows. In the 12 cervically unprepared teeth (positive controls) the composite resin with dentin bonding agent (DBA) was placed in access cavity and cured for 120 seconds. This technique was also applied to other groups when the access was restored with composite. In the second group, the access cavity was restored with composite only to the level of CEJ. In the third group the cervically prepared teeth were reinforced with cement resin (Enforce) and a prefabricated post was placed in 5mm apical to the CEJ. In the fourth group, the cervically prepared teeth were reinforced with composite resin and DBA by a clear plastic post. In the fifth group the cervically prepared teeth were reinforced with composite resin and dba and a cast post. In the sixth group the cervically prepared teeth were restored with composite resin and dba with a prefabricated post. All of the specimens were mounted by rubberized technique and tested in the Instron universal testing machine. The fracture loads in samples were analyzed with ANOVA and Duncan tests with  $p < 0.05$  as the limit of significance.

<sup>†</sup> مؤلف مسؤول: نشانی: اصفهان - دانشگاه علوم پزشکی اصفهان - دانشکده دندانپزشکی - گروه آموزشی ترمیمی و مواد دندان‌دانی

تلفن: ۰۹۱۳۱۱۶۱۰۰۰ نشانی الکترونیک: k\_khosravi@dnt.mui.ac.ir