Sealing Ability of Various Materials in Repair of Furcation Perforations in Deciduous Molars - An In Vitro Study

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Introduction

Scientific and technological advances in the past decades have significantly affected every aspect of dentistry. Most empirical treatments have been replaced by proven procedures.

Furcation perforations create problems during the endodontic treatment and may result in permanent damage to the periodontal attachment, proliferation of epithelium and bone loss with eventual loss of teeth. Surgical and non surgical methods have been evaluated for the repair of the perforation. Since surgical approach for the furcation perforation is difficult, a nonsurgical method of repair is preferred.

Cohen and Burns (1980)[10] stated that major difficulty with nonsurgical repair of a mechanical perforation is that the defect acts as a bottomless pit. Hence control of repair material is difficult and extrunsion of the filling material into the periodontal ligament space is common.

Prognosis of an endodontic perforations depends on the size and locations of the defect, the duration of time that the perforations is open to the environment before being sealed,amount of periodontal ligament irritation and the biocompatibility and the ability of the material to provide an adequate seal. Hence the choice of repair material is an important factor in the prognosis of endodontically treated tooth with perforation defect.

Perforation defects have been sealed with different materials like calcium hydroxide[13], dentine chips[1], tricalcium phosphate[14,25,9], zinc oxide eugenol[1], cavit[1,13] and hydroxylapatite[9] with varying degrees of success.