

Pizza Technique in Site 1 Restoration in Lower Second Molar Tooth : A Case Report

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Abstract

One of the techniques that can be used to achieve esthetic and functional posterior teeth is to make correct and accurate occlusal anatomy. The pizza technique is a modelling technique in which one increment is used for each cusp that resembles pizza slice in restoring occlusal cavity in the posterior tooth using direct resin composite. The aim of this case report to describe a novel technique in restoring a site 1 cavity in posterior teeth using direct resin composite that can be used to achieve esthetic and functional posterior teeth and to minimize polymerization shrinkage while at the same time generating a correct and precise occlusal anatomy. A 33 year old female patient came to the dental centre with D5, site 1, size 3 cavities in tooth 37 and the diagnosis was reversible pulpitis. The tooth will be restored using direct nanohybrid resin composite material with the pizza technique. The pizza technique is effective for class I direct composite resin restoration in the posterior tooth with hidden caries and extensive dentin involvement.

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Introduction

According to the World Health Organization (WHO), dental caries are a major health problem worldwide with 60-90% prevalence in school-aged children and adults.^{1,2} Caries are a common oral disease and result in loss of tooth structure and requires restoration to restore the function, form and aesthetic of the tooth.³⁻⁵

Composite resins are the most widely used restorative materials today. Factors contributing to the increased use of composite resin restorations is the introduction of minimally invasive restoration procedures that emphasize the maintenance of sound tooth structures and usage of adhesive materials in the posterior region.^{2,6-8}

However, a composite resin has still drawbacks. This restoration has multiple procedures that are time-consuming and excellent operator skills and ability to achieved harmonious occlusal and cusp-fossa relationships with opposing teeth.⁶

Polymerization shrinkage is the most frequently encountered problem in composite resins. The distance between the monomer units in the polymer are closer than before the polymerization and undergo 2-6% volumetric contraction during the polymerization. This process forms a gap between the cavity wall and the restoration that can cause microleakage. This microleakage gives space for bacteria, liquids, molecules, and ion penetration. Microleakage is thought to be responsible for discolouration of marginal restorations and teeth, secondary caries, enamel fractures, and pulp sensitivity.⁹⁻¹³ The application of composite resins with incremental techniques have been recommended to reduce residual stress at tooth restoration interface. This technique will decrease polymerization shrinkage due to a decrease the volume of the polymerized composite resin material. Several studies have suggested that the incremental technique is an ideal technique for composite resins application.¹⁴⁻¹⁶

Recently, a new technique, pizza technique or sectional technique has been proposed as modification of oblique technique by Manauta J and Salat A (Style Italiano, 2012), which each increment is made cusp by cusp that resembles a pizza slice¹⁷. With this technique, small cavity walls bind to the composite resin and thus has fewer tendencies to cause microleakage. In addition the occlusal anatomy, it can also be

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