بسم الله الرحمن الرحيم

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بقسم التوثيق الإلكتروني بمركز الشبكات وتكنولوجيا المعلومات دون أدنى مسئولية عن محتوى هذه الرسالة.

ملاحظات: لا يوجد

Effect of Cervical Margin Relocation and Haemostatic Agent Contamination on Margin Adaptation and Microleakage of Indirect Ceramic Restoration.

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Dedication

This work is dedicated to My dad's soul and my dear mother,

My beloved husband and sons

My precious sister and brother

Introduction

The success of tooth-colored restorations, whether direct or indirect, using composites and ceramics, greatly depends on the quality and stability of their marginal adaptation [1].

Direct composites are indicated and effective for small and medium sized class I and II cavities. In larger cavities, the use of indirect porcelain or resin composite restorations is still the most common approach for reducing the adverse effects of bulk polymerization contraction in large cavities as the volume of composite resin is strictly limited to the cementing gap [2].

One of the problems that appear during restoring a large cavity with an indirect restoration is that the proximal box is often located sub-gingival below the cementoenamel junction (CEJ). Sub-gingival margins may complicate impression-making and adhesion of the restoration during final cementation. cervical margin relocation is a conservative approach by which the subgingival margin can be elevated more occlusally by applying a resin composite material.

Absence of enamel in the cervical margin results in areas of weak bonding. Even with a highly adapted restoration, Bonding to dentin is not as stable as bonding to enamel and associated with higher risks of micro leakage, patient sensitivity and recurrent caries.

Although it is a challenge to perform an adhesive restoration in this region, CMR as a single procedure is still better controlled and contamination is more easily avoided, even when the rubber dam placement is not feasible [3].

After relocating the cavity margins to a supra-gingival position, a sufficient rubber dam application with dry conditions that needed for adhesive cementation becomes feasible. Moreover, this approach avoids bulky restorations.

Another problem with the deeply located subgingival cavities is the difficulty of bleeding and the crevicular fluid control. Application of haemostatic agents in deep subgingival cavities helps in bleeding control in these areas for better isolation.

However, use of haemostatic agents raised the question whether or not contamination with these materials affects bonding to the dental surface, such agents have acidic pH values and may interfere with the bonding procedure to dentin by removing the smear layer [4]. With subsequent effect on the marginal integrity of the tooth restoration interfac

Review of literature

1-Indirect tooth-colored intra-coronal restorations

During the past decade, most dental procedures have moved toward a more conservative approach, today whatever the depth of the cavity, pulp capping and peripheral seal concepts have replaced automatic root canal treatment, partial preparations and morphologically oriented preparations are replacing the peripheral preparations and post and core treatments are less frequently indicated.

However, a major difficulty of this conservative approach is determining its limits. Knowing exactly when to go for peripheral preparation instead of partial preparation and when to extract, not restore a tooth [5].

The Recently introduced computer aided design/ computer aided manufacturing (CAD/CAM) materials have overcome volume defects and voids found in conventionally sintered porcelain which allow them to have better tensile strength [6]. Moreover, this evolving technology has opened new horizons to provide more accurate, highly esthetic, and low time consumption restorations.

Though proven to be a very effective modality of restoration marginal accuracy is of principle concern [7]. Due to the multiple factors involved during CAD/CAM procedure – as scanning process, designing the restoration, milling and firing- marginal accuracy is inevitably affected [8,9].