

An evaluation of an intracoronal restorations among people in Sharkhan village

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ABSTRACT

The aim of this study was to evaluate clinically the intracoronal restorations among people in Sharkhan village. A sample of (180) persons was selected randomly for the study. The age range between 18-60 years old. A clinical examination was performed. The restorations were examined for different types of failures. A percentages of failures are observed with expose margins (37%), recurrent caries (27%), over - hang fillings (18%), restoration fractures (11%), open contacts (7%), over filling (7%), corrosion (6%), color failure for anterior restoration (4%) and finally fracture of restored teeth (3%).

Key words: Intracoronal restorations, composite, amalgam filling.

الخلاصة

أن الغاية من هذه الدراسة هي اجراء تقييم سريري لحشوات الاسنان عند سكان قرية الشريخان . اخذت عينة عشوائية مؤلفة من (180) شخص تتراوح اعمارهم من 18-60 سنة. ثم تم اجراء الفحص السريري للعينة ، واطهرت النتائج أن (37%) من الحشوات تعاني من انكسب الحوافي ، وان التسوس تحت الحشوات موجود بنسبة (27%) ، ونسبة الزيادة في الحشوات باتجاه اللثة كانت (18%) اما نسبة الكسر في الحشوات فقد كان (11%) ، ونسبة انفتاح التطابق مع الاسنان المجاورة هو (7%) ، ونسبة الزيادة في الحشوات كانت (7%) ، ونسبة التاكل في حشوات الاملغم (6%) ، ونسبة الفشل في اللون لحشوات الكومبوزيت الاسنان الامامية كانت (4%) ، وكانت نسبة تكسر الاسنان المحشوة هي الاقل بين جميع أنواع الفشل (3%) .

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INTRODUCTION

Many restoration failures occur even though profession has access to improved material and technique. Much time is spent replacing restorations that are failing as a result of recurrent caries, marginal deterioration (ditching), fractures, or poor contour⁽¹⁾.

Fracture of teeth, including cracked tooth syndromes, is a frequent dental problem. Many factors, including large restoration, abnormal stresses and / or carious lesion, have been associated with fracture. Khera et al. Found that as the depth and width of the cavity preparation increase as the rate of fracture of tooth and / or restoration is increase⁽²⁾.

According to Elderton & Nuttall, the clinical diagnosis of secondary caries may be difficult & may present many variations, this is because wall lesions cannot be observed unless they are at an advanced stage in with discoloration & fracture of the tooth structure are present.⁽³⁾

Fractured restoration are important, particularly those where the fractured pieces remain in place. In such conditions, there is often a fault in the cavity preparation, such as too thin a restoration in high - stress-bearing area, or the occlusion may have been incorrectly adjusted⁽⁴⁾.

A study performed by Pimenta et al. Showed that the ditched margins of restoration with recurrent caries is the most important contributing factors to replacement of restoration⁽⁵⁾. Recent research has confirmed that the amalgam alloys with the lowest creep rate have the lowest incidence of marginal. However, ditching may be reduced by attention to detail in cavity preparation⁽⁴⁾.

The amalgam margin angle most exceed 70 degrees, since angle less than this are prone to fracture⁽⁶⁾.

Many other types of failures in restoration may be due to faults in following scientific procedures in cavity preparation and manipulation of restorative materials from the dentist. Such failures like defective contours of restoration (defect in contact and overhanging margins), over filling, under filling and color failure in anterior restoration.

The aim of this study was to evaluate clinically the intracoronal restoration among people in Sharkhan village.

METHOD

A sample of 180 person was selected randomly for the study including males & females of an age group ranged from 18-60 years old. A clinical full mouth examination for each person was performed on a dental unit and good dental light, by using the dental mirror and probe. The restorations were examined for the followings:-

1. Tooth fracture.
2. Restoration fracture.
3. Expose margin.
4. Recurrent caries.
5. Open contact.
6. Overhang filling.
7. Colour filling.
8. Over filling.
9. Corrosion.

RESULTS

After the collections of the data, the results of this study showed that, the sample consisted from 180 person, 55% of the sample was male & 45% of the sample was female. The age group ranged from 18 – 60 years old, the mean age was 42 years old.

The clinical examination explained that only two types of intracoronal restoration were found in the teeth of the sample, which were the amalgam & composite resin. Ninety six percent of the restoration was amalgam & just 4% of restoration was composite.

The result indicated that the highest percentage of failure was the exposed margins (37%), followed by the recurrent caries at the margins of restoration (27%). The percentage of overhang restoration was (18%), where as the percentage of a fracture of restoration was (11%).

The restoration which have an open contact relations with the adjacent teeth were (7%), the over fillings were also (7%). A (6%) of an amalgam restorations were corroded and (4%) of composite restorations were having a color failure, the lowest failure rate observed in this study was the fracture of the restored teeth (3%). The total percentages of all types of failure was more than 100%, this is because most of the restorations were having more than one type of failure at the same time (See the figure and table of the percentages of failure).

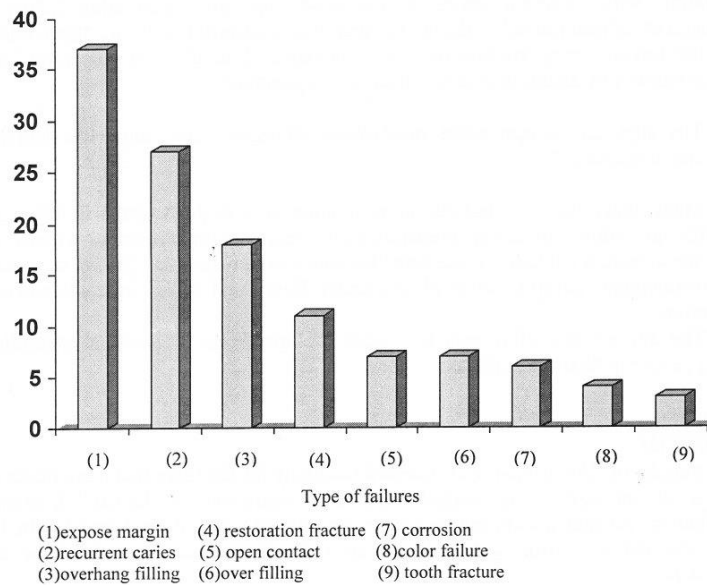


Figure : the percentage of failures of restorations

Table: The percentages of failures of an intracoronal restoration

Type of Failure	%
Expose margins	37.0
Recurrent caries	27.0
Over hang filling	18.0
Restoration fracture	11.0
Open contacts	7.0
Over filling	7.0
Corrosion	6.0
Color failure	4.0
Tooth fracture	3.0

DISCUSSION

A wide epidemiological survey was carried out by the University of Mosul in Sharkhan village. This study was a part of this survey. People in this village having low dental education due to absence of dental office and private dental clinic.

Most of failures selected in this study, are failures related to operative errors. The failures which may be occurred due to trauma or periodontal & pulpal diseases are excluded from study.

This study explained that the highest percent of failure was the exposed margins and the recurrent caries and this result agreed with the result performed by Pimenta et al. ⁽⁵⁾.

Most of the fractured restorations in this study were large, and this supported the result of study by Khera et al. ⁽²⁾ which stated that as the depth and width of restoration increased, their possibility to fracture is increased also.

The high rate of exposed margins, recurrent caries & the fractured restoration explained that operator were not taking a great care for the cavity preparation & the application of an ideal principles of cavity preparation. Other types of failures like the defects in contouring the restorations, color failure & corrosions, are failures which may related to a poor handling & manipulation of the restorative material, the low rate of the restored teeth fracture may be due to exclusion of the traumatized teeth due to sudden heavy trauma from the study.

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