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Short Communications

Evaluation of the general dentists' problems during and after posterior composite filling in Babol

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Abstract

Introduction: Posterior composites are one of the most popular filling materials. The aim of this study was to evaluate the problems of general dentists during and after posterior composite restorations in city of Babol.

Materials &Methods: In this study, data were collected using questionnaire about the problems during and after posterior composite filling. Then data were analyzed by chi square test.

Results: The highest complains of patients after posterior composite filling were related to the food impaction (33.4%), the most clinician's problem during posterior composite filling was inadequate proximal contact (37.2%) and most of dentists used pressing matrix band for proper proximal contact (31.2%). Most of dentists used incremental technique for composite filling (49.3%) and two-step total etch adhesives (68.7%) according to the manufacturer's instructions (44.2%) and applied wet polishing technique (75.6%) and major criteria for choosing composite as restorative material in posterior teeth were the ability of isolation (41.8%).

Conclusion: Increasing the knowledge of dentists about these restorations may reduce the associated problems during and after composite filling.

Keywords: Composite resins, Isolation, Dentists

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بررسی مشکلات دندانپزشکان شهر بابل حین و پس از استقرار ترمیمهای کامپوزیت خلفی

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چکیده

مقدمه: کامپوزیتها از پرطرفدارترین مواد ترمیم هستند. هدف از این مطالعه بررسی مشکلات دندانپزشکان عمومی شهر بابل حین و پس از استقرار ترمیمهای کامپوزیت خلفی است.

مواد و روش ها: در این مطالعه داده ها به کمک پرسشنامه ای جمع آوری شد که شامل سوالاتی در مورد مشکلات حین و پس از ترمیمهای کامپوزیت خلفی بود. داده ها توسط تست کای مربع بررسی شدند.

یافته ها: بیشترین شکایت بیماران پس از استقرار ترمیمهای کامپوزیت گیر غذایی (۳۳/۴٪)، شایعترین مشکل دندانپزشکان حین استقرار ترمیمهای کامپوزیت خلفی، تماس پروگزیمال نامناسب بود (۳۷/۲٪)، بیشتر دندانپزشکان از فشار دادن نوار ماتریکس به دندان مجاور برای برقراری تماس پروگزیمال مناسب استفاده می کردند(۳۱/۲٪). بیشتر دندانپزشکان از روش استقرار لایه لایه (۴۹/۳٪) و چسبهای عاجی دو مرحله ای توتال اچ (۶۸/۷٪) طبق دستور کارخانه سازنده (۴۴/۲٪) برای قرار دادن کامپوزیت استفاده می کردند. بیشتر آنها از روش پالیش مرطوب (۷۵/۶٪) استفاده می کردند و ملاک اصلی انتخاب کامپوزیت به عنوان ماده ترمیمی در دندانهای خلفی، توانایی در ایجاد ایزولاسیون و ایجاد ترمیم مناسب بود (۴۱/۸٪).

نتیجه گیری: به نظر می رسد افزایش دانش دندانپزشکان در مورد این مواد ترمیمی و آموزش مناسب می تواند سبب کاهش مشکلات حین و پس از استقرار ترمیمهای کامپوزیت شود.

واژگان کلیدی: کامپوزیت های رزینی، ایزولاسیون، دندانپزشکان

Introduction

posterior composite restorations have become a routine procedure in dental practices in recent years because of its esthetic and minimally invasive technique.[1]

Clinical investigations confirmed that these materials provide acceptable performance in posterior teeth.[2]

In spite of several advantages, composite also has some disadvantages like postoperative sensitivity, food impaction, time-consuming procedure, higher cost compare to amalgam and occlusal wear. [3]

The efficiency of dental restorations depends on restorative material and the clinician's level of experience. [4] Generally, posterior composite restorations are technique-sensitive. [5,6] However, there are few data about direct effects of dentist's function on efficiency of composite restorations. The aim of this study was to evaluate these problems during and after posterior composite filling among dentists of Babol city.

Methods

Data were gathered using questionnaire in this analytic-descriptive study. Validity of the questionnaire was confirmed by some specialists and experts of Medical Education Development Center (EDC) and the tests and retests were performed for reliability of the questionnaire (Retest method). The questionnaire was revised by 15 experts and finally the correlation coefficient was acceptable (r=0.7). 160 general dentists were randomly chosen. After gathering the questionnaires, each of questions was evaluated using descriptive statistics. Chi square test was performed to compare the equality of answers.

1. Which one of the following complains does your patient have after posterior composite filling? (One or more choices are possible)

a. Dental sensitivity to heat changes

b. Dental sensitivity while chewing

c. Dental sensitivity which doesn't get better by occlusion adjustment while chewing

d. Sensitivity to sugar

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e. Food impaction
2. What difficulties do you have with composite filling? (One or more choices are possible
a. isolation
b. appropriate proximal contact
c. appropriate tooth anatomy
d. occlusion adjustment
e. polishing gingival restorations
f. color selection
3. what do you do in order to make proper proximal contact ? (One or more choices are possible)
a. prewedging
b. precontoured thin metal matrix band
c. shaping wedge
d. pressing matrix band toward adjacent tooth
4. Which of the following options do you observe during posterior composite filling? (One or more choices are possible)
a. using flowable composite liner
b. using an incremental technique
c. using resin modified glass ionomer (RMGI) base in deep cavities
5. Which one is observed while using the bonding? (one or more choices are possible)
a. etching time
b. drying with cotton pellet
c. manufacturer's instruction
6. Which type of bonding do you use most often?
a. three step total etch
b. two step total etch
c. two step self etch
d. one step self etch
7. Which polishing do you use for composites?
a. wet
b.dry
8. What is your criterion for selecting composites as restorative material?
a. patient's demand
b. extension of cavity
c. patient's occlusion
d. esthetic demands
e. possibility of isolation

Results

A number of 160 dentists participated in this study. Answer distribution of participants is shown in table 1.

Table 1. Answer distributions of the participants

Choices	Questions							
	1	2	3	4	5	6	7	8
a	72(33.4)	68(29.8)	44(18.5)	53(17.7)	96(31.6)	4(2.5)	121(75.6)	22(13.7)
b	56(26)	85(37.2)	68(28.6)	147(49.3)	73(24)	110(68.7)	39(24.3)	9(5.6)
c	49(22.7)	14(6.1)	51(21.5)	98(32.8)	134(44.2)	38(23.7)		19(11.8)
d	13(6)	10(4.3)	74(31.2)			8(5)		43(26.8)
e	25(11.6)	17(7.4)						67(41.8)
F		34(14.9)						
P value	0.001	0.001	0.01		0.001	0.001	0.001	0.001

Discussion

The major problem of dentists in this research was making proper proximal contact during performance of posterior composite restorations. On the other hand, the most prevalent method in posterior composite restorations is pressing metal matrix band during polymerization. Noticing that dentists had the possibility of selecting instruments and other methods simultaneously, and according to 3rd question, they didn't act wisely in recognizing during posterior composite filling. Choosing different instruments methods can be considered as the main reason of not being successful in making proper proximal contact. This problem can cause further problems such as food impaction, pain and discomfort while chewing and can cause periodontal and decay in long-term. Most of the complains of patients in this research was food impaction which was predictable noticing difficulty of dentists in making proper proximal contact. According to second question the other one was sensitivity to heat change which could be related to improper isolation.

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The most prevalent method among dentists was incremental method which was good for reducing side effects of polymerization shrinkage. According to 6th and 7th questions, studied dentists used two-step total etch dentin bonding and wet polish method. Unemori et al showed that newer generations of dentin bonding make obvious lower sensitivity after the procedure in comparison to older generations. [7] And usage of self etch bonding may be one of the causes of dental sensitivity after treatment of patients. Statistical analysis of available data showed that most of the dentists represented the possibility of isolation as the criterion of choosing composite as a restorative material. In the study of Gilmour et al, 89% of studied dentists represented beauty demand and 76% of them represented assurance of composite function in posterior restorations as the criterion for choosing composite. [8]

Conclusion

we concluded that the problems with which the studied dentists encounter after the treatment were due to unawareness and insufficient precision during steps of pore cavity restoration.

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