

EFFECT OF MARGIN CONFIGURATION ON MARGINAL
ADAPTATION OF ALL CERAMIC CROWNS A LITERATURE
OF REVIEW

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ABSTRACT

All -ceramic restorations are nowadays widely accepted in the anterior and posterior regions. The geometry of tooth preparation has been the subject of many debates without clear evidence that one type of finish line provides consistently superior marginal fit. Therefore, the main interest of the present research was directed toward the influence of margin configuration on marginal adaptation of all ceramic crowns. Articles were selected on the basis of they had sufficient information related to types of the finish line and related factors effect on marginal adaptation of all ceramic crowns. The results of this study revealed that the best finish line chose for all ceramic restorations still remains a difficult goal to be achieved.

تأثير الشكل الحافي على التطابق الحافي للتيجان السيراميكية (مراجعة نظامية)

الملخص العربي

كل التعويضات السيراميكية هذه الايام مقبولة بكثرة في الجهات السنية الامامية والخلفية. الشكل الهندسي للسن المبرية أصبح مادة ذات جدال بدون دليل واضح علي نوع واحد من النهاية الحافية التي تعد بالدوام أفضل تطابق حافي. لذلك.... الاهمية الاساسية لهذا البحث كانت موجهة مباشرة الي تأثير الشكل الحافي علي التطابق الحافي للتيجان السيراميكية. المقالات التي أختيرت علي اساس ان تمتلك معلومات كافية متعلقة بأنواع الشكل الحافي و العوامل المؤثرة علي التطابق الحافي للتيجان السيراميكية. النتائج في هذه الدراسة اظهرت ان أفضل شكل حافي مرتبط بالتعويضات السيراميكية لا يزال هدف صعب الانجاز.

STATEMENT OF THE PROBLEM

All -ceramic restorations are nowadays widely accepted in the anterior and posterior regions. The geometry of tooth preparation has been the subject of many debates without clear evidence that one type of tooth preparation provides consistently superior marginal fit.

INTRODUCTION

Esthetics has become a critical demand on the practice of modern restorative dentistry. The increased demands for improved esthetics have prompted dentists various materials and procedures. All-ceramic materials are the material of choice for esthetic restorations because of their excellent translucency and can survive in the biological environment of the oral cavity if the margins are closely adapted on the finish line of the preparation¹. Therefore, in the present research we tried to be familiar with, which type of finish line give the best results for adaptation of all ceramic restorations?.

MATERIALS AND METHODS

The electronic search in databases (Science Direct, PubMed, and Google databases) provided 1,370 titles and abstracts that were relevant to the effect of finish line on marginal adaptation of all ceramic crowns. The publication year limit option was not used. with combinations of the key words: Margin Configuration, Marginal Adaptation, All Ceramic Crowns 60 articles were closely related and selected. 40 articles were reporting on all ceramic restorations. 40 articles were reporting on marginal fitness. And only 10 articles were reporting effect finish line configuration on marginal adaptation.

RESULTS

A review of the literature revealed that the best finish line chose for all ceramic restorations still remains a difficult goal to be achieved.

DESCUSSION

Still exist the differences between studies about which finish line design is the best. Three different types of crown margin preparations--a chamfer, a shoulder, and a shoulder plus a bevel

tested to determine whether or not the margin preparation could affect micro leakage by Goldman et al.² All crowns demonstrated significant leakage following the path of the dentinal tubules into the pulp.

Studies that examined the influence of finish line design on marginal adaptation yielded contradictory results.

The feather-edge finish line had the highest mean external marginal opening , compared with the chamfer finish line, the 0.8mm rounded shoulder, and the 0.5mm rounded shoulder was evaluated by Lin et al.³ Those results were in contrast to those of Comlekoglu et al.⁴

On the other hand, the marginal gaps were greater for the chamfer finish line specimens than in the shoulder finish line specimens were evaluated by Cho et al.⁵ And in agreement with results of Euán et al.⁶ and Souza et al.⁷. Whereas, Weng et al.⁸ results were in contrast to those who found the marginal design with chamfer is better than shoulder.

No statistically significant difference in the marginal fit of restoration with three different finish line designs (shoulder, rounded shoulder, and chamfer preparations) in agreement with results of Komine et al.⁹, Limkangwalongkol et al.¹⁰ and Baig et al.¹¹

CONCLUSION

An explanation of differences between the marginal gap differences of different investigations may be due to the different methods adopted in studying the marginal discrepancy. The use of different measuring instruments may be factor. Also dimension of the tested samples, number and the degree of accuracy in its fulfillment was another major factor.

Despite the amount of research to find out the type of finish line is best for all ceramic restorations disagreement still exists and is still the research in progress.

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