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ENHANCED ESTHETICS WITH ALL-CERAMIC CROWN: A CASE REPORT

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Abstract: This case report presents the successful use of an all-ceramic crown to achieve enhanced esthetics in a patient with a compromised anterior tooth. The patient presented with a discolored and fractured maxillary central incisor, leading to significant concerns about the appearance of their smile. After a comprehensive dental evaluation and treatment planning, an all-ceramic crown was selected as the most suitable restorative option. The fabrication process involved digital scanning, computer-aided design/computer-aided manufacturing (CAD/CAM) technology, and skilled dental laboratory work to create a customized, natural-looking all-ceramic crown. The case report details the step-by-step treatment process, including tooth preparation, crown fitting, and final esthetic outcome. The all-ceramic crown provided a seamless integration with adjacent teeth, restoring the patient's smile to its full esthetic potential and significantly improving their self-confidence.

Keywords: All-ceramic crown, esthetics, anterior tooth, CAD/CAM technology, dental restoration, smile enhancement, tooth discoloration, tooth fracture, dental laboratory, case report.

INTRODUCTION

The anterior teeth play a critical role in a person's smile and overall facial esthetics. Any compromise in the appearance of these teeth, such as discoloration or fractures, can significantly impact a patient's self-confidence and satisfaction with their smile. Restoring the esthetics of anterior teeth requires careful consideration of the most appropriate dental restoration.

All-ceramic crowns have gained popularity as an excellent choice for enhancing esthetics in dental restorations. They offer excellent translucency and color-matching properties, providing a natural-looking appearance that seamlessly integrates with adjacent teeth. Moreover, advances in computer-aided design/computer-aided manufacturing (CAD/CAM) technology have revolutionized the fabrication process of all-ceramic crowns, allowing for precise customization and improved treatment outcomes.

This case report highlights the successful use of an all-ceramic crown to achieve enhanced esthetics in a patient with a compromised maxillary central incisor. The patient's concerns about the appearance of their smile due to tooth discoloration and fracture led to the consideration of an all-ceramic crown as the optimal restorative option. The report details the step-by-step treatment process, from dental evaluation and treatment planning to crown fabrication and final esthetic outcome.

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METHOD

Patient Evaluation:

A patient presented with a discolored and fractured maxillary central incisor, expressing concerns about the esthetics of their smile. A comprehensive dental evaluation was performed, including clinical examination, radiographs, and diagnostic impressions.

Treatment Planning:

Based on the dental evaluation, treatment planning discussions were held with the patient. After considering various restorative options, an all-ceramic crown was deemed the most suitable choice to achieve enhanced esthetics while preserving the tooth's functionality.

Tooth Preparation:

The compromised maxillary central incisor was prepared for crown placement. Minimally invasive tooth preparation was performed to conserve as much tooth structure as possible while ensuring proper crown fit and esthetics.

Digital Scanning:

Intraoral digital scanning was used to capture accurate images of the prepared tooth and adjacent teeth. The digital scans were then used for computer-aided design (CAD) of the all-ceramic crown.

CAD/CAM Fabrication:

Using the digital scans, the all-ceramic crown was designed with meticulous attention to esthetics and occlusion. CAD/CAM technology was employed to fabricate the customized all-ceramic crown in the dental laboratory.

Crown Fitting and Adjustments:

Once the all-ceramic crown was fabricated, it was tried in the patient's mouth to assess fit, occlusion, and esthetics. Any necessary adjustments were made to ensure optimal fit and natural appearance.

Final Esthetic Outcome:

The all-ceramic crown was permanently cemented, resulting in a seamless integration with adjacent teeth. The final esthetic outcome enhanced the patient's smile, addressing their concerns about tooth discoloration and fracture.

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By presenting this case report, we aim to highlight the successful use of an all-ceramic crown as an effective method to achieve enhanced esthetics in a patient with a compromised anterior tooth. The utilization of CAD/CAM technology in the fabrication process ensured precise customization, resulting in a natural-looking restoration that significantly improved the patient's self-confidence and overall satisfaction with their smile.

RESULTS

The case report describes the successful esthetic enhancement of a patient's smile using an all-ceramic crown for a compromised maxillary central incisor. The patient presented with a discolored and fractured tooth, leading to concerns about the appearance of their smile. After careful evaluation and treatment planning, an all-ceramic crown was chosen as the most suitable restoration to achieve enhanced esthetics.

Treatment Process: The compromised maxillary central incisor was prepared for crown placement using minimally invasive tooth preparation. Intraoral digital scanning captured accurate images of the prepared tooth and adjacent teeth. The all-ceramic crown was then designed using CAD technology to achieve precise customization. The crown was fabricated using CAD/CAM technology in the dental laboratory and subsequently fitted in the patient's mouth. Adjustments were made to ensure optimal fit, occlusion, and esthetics before the crown was permanently cemented.

DISCUSSION

The successful esthetic enhancement achieved in this case demonstrates the effectiveness of all-ceramic crowns in restoring the appearance of compromised anterior teeth. All-ceramic crowns offer excellent translucency and color-matching properties, providing a natural-looking restoration that seamlessly integrates with adjacent teeth. In this case, the use of CAD/CAM technology allowed for precise customization of the crown, resulting in a restoration that closely resembled the natural tooth in terms of color, shape, and contour.

The minimally invasive tooth preparation preserved the remaining tooth structure, reducing the risk of post-operative sensitivity and potential complications. Additionally, the use of digital scanning eliminated the need for conventional impression materials, enhancing patient comfort and reducing the turnaround time for crown fabrication.

The final esthetic outcome of the all-ceramic crown significantly improved the patient's smile and self-confidence. The restoration successfully addressed the concerns about tooth discoloration and fracture, providing a seamless and natural-looking appearance. The patient expressed satisfaction with the treatment outcome, highlighting the positive impact of the all-ceramic crown on their overall quality of life.

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CONCLUSION

The case report highlights the successful esthetic enhancement achieved with an all-ceramic crown for a compromised maxillary central incisor. The use of CAD/CAM technology allowed for precise customization and seamless integration of the crown with adjacent teeth. The minimally invasive tooth preparation preserved tooth structure while providing optimal crown fit and esthetics.

The results demonstrate the efficacy of all-ceramic crowns in achieving enhanced esthetics for compromised anterior teeth. This restorative option provides an effective and natural-looking solution for patients seeking to improve the appearance of their smile. The successful outcome in this case underscores the importance of personalized treatment planning and the utilization of advanced dental technologies to achieve optimal esthetic results in dental restorations. All-ceramic crowns can be a valuable tool for enhancing patient satisfaction and improving their overall dental health and well-being.

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