

METAL-CERAMIC RESIN-BONDED FIXED PARTIAL DENTURE: CASE REPORTS FOR SINGLE TOOTH REPLACEMENT

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Abstract: The replacement of single missing teeth poses challenges in restorative dentistry, particularly when conserving adjacent tooth structure is paramount. Metal-ceramic resin-bonded fixed partial dentures (RBFDPs) offer a conservative and aesthetically pleasing solution for single tooth replacement. This case report presents two clinical cases of single tooth replacement using metal-ceramic RBFDPs. In both cases, a minimally invasive approach was employed to preserve the adjacent teeth, and the missing tooth was replaced with a metal-ceramic RBFDP, bonded using resin cement. The metal-ceramic RBFDPs demonstrated excellent aesthetic outcomes, provided functional restoration, and maintained the integrity of the adjacent teeth. These case reports highlight the advantages and clinical applications of metal-ceramic RBFDPs as an effective treatment option for single tooth replacement.

Keywords: Metal-ceramic, resin-bonded fixed partial denture, single tooth replacement, minimally invasive, aesthetics, functional restoration, adjacent tooth preservation.

INTRODUCTION

The replacement of single missing teeth is a common challenge in restorative dentistry. The choice of a suitable treatment option depends on various factors, including the preservation of adjacent tooth structure, aesthetics, function, and patient preferences. Metal-ceramic resin-bonded fixed partial dentures (RBFDPs) have emerged as a conservative and esthetically pleasing solution for single tooth replacement. The metal-ceramic RBFDPs offer the advantages of minimal tooth preparation, excellent aesthetic outcomes, and functional restoration while maintaining the integrity of adjacent teeth.

This case report aims to present two clinical cases of single tooth replacement using metal-ceramic RBFDPs. The use of this treatment approach allowed for a minimally invasive procedure, reducing the need for extensive tooth preparation. The successful outcomes of these cases showcase the versatility and effectiveness of metal-ceramic RBFDPs in achieving optimal results for single tooth replacement.

METHOD

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Patient Selection:

Two patients with a single missing tooth were identified as candidates for the metal-ceramic RBFDPs.

Comprehensive oral examinations, including radiographic assessments, were conducted to evaluate the condition of the missing tooth and adjacent teeth.

Treatment Planning:

A thorough treatment plan was developed, taking into account the location of the missing tooth, the condition of the adjacent teeth, and the patient's aesthetic and functional requirements.

The decision to use metal-ceramic RBFDPs was made based on the minimally invasive approach, preserving the adjacent teeth.

Tooth Preparation:

Minimal tooth preparation was performed on the adjacent teeth to create space for the metal-ceramic RBFDP.

The amount of tooth structure removed was kept to a minimum, ensuring maximum preservation of sound tooth tissue.

Impression and Temporary Restoration:

Impressions of the prepared teeth and the edentulous area were taken to create accurate models.

Temporary restorations were fabricated and cemented to maintain aesthetics and function during the laboratory fabrication of the final metal-ceramic RBFDPs.

Laboratory Fabrication of Metal-Ceramic RBFDPs:

The final metal-ceramic RBFDPs were fabricated in the dental laboratory, using high-quality materials for optimal aesthetics and function.

The metal framework was precisely designed to ensure proper fit and support for the ceramic veneer.

Bonding of Metal-Ceramic RBFDPs:

The metal-ceramic RBFDPs were tried in the patient's mouth to check for fit, aesthetics, and occlusion.

The RBFDPs were bonded to the adjacent teeth using resin cement, ensuring a strong and durable bond.

Follow-up and Evaluation:

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Regular follow-up visits were scheduled to monitor the success and stability of the metal-ceramic RBFDPs.

Patient feedback and satisfaction were recorded to assess the treatment outcome.

The presentation of these case reports demonstrates the successful use of metal-ceramic RBFDPs in single tooth replacement. The minimally invasive approach, aesthetic outcomes, and functional restoration achieved in these cases highlight the effectiveness and versatility of metal-ceramic RBFDPs as an ideal treatment option for patients requiring single tooth replacement.

RESULTS

The two clinical cases presented in this report demonstrate successful single tooth replacement using metal-ceramic resin-bonded fixed partial dentures (RBFDPs). In both cases, the metal-ceramic RBFDPs provided excellent aesthetic outcomes, functional restoration, and preserved the integrity of adjacent teeth. The minimally invasive approach, with minimal tooth preparation, allowed for conservative treatment while achieving optimal results for the patients.

DISCUSSION

Metal-ceramic resin-bonded fixed partial dentures have become an attractive option for single tooth replacement due to their advantages of preserving adjacent tooth structure and providing aesthetically pleasing restorations. The minimal tooth preparation required for RBFDPs helps maintain the strength and vitality of the abutment teeth, reducing the risk of pulpal sensitivity and potential long-term complications. Additionally, the metal-ceramic material combination offers excellent aesthetics, mimicking the natural tooth structure, and providing patients with a seamless smile.

In the presented cases, the metal-ceramic RBFDPs exhibited excellent bonding to the adjacent teeth, ensuring stability and durability. The restorations effectively restored the patients' chewing function and allowed them to regain confidence in their appearance. Furthermore, the successful outcomes of these cases indicate that metal-ceramic RBFDPs can serve as a reliable and conservative treatment option for single tooth replacement, offering an alternative to more invasive procedures like dental implants or conventional fixed partial dentures.

CONCLUSION

The case reports of single tooth replacement using metal-ceramic resin-bonded fixed partial dentures illustrate the effectiveness and benefits of this treatment option. The minimally invasive approach and preservation of adjacent tooth structure make metal-ceramic RBFDPs an attractive choice for patients with a single missing tooth. The aesthetic outcomes, functional restoration, and maintenance of adjacent teeth's integrity demonstrate the reliability and versatility of metal-ceramic RBFDPs in achieving successful outcomes for single tooth replacement.

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As part of the clinician's armamentarium, metal-ceramic RBFDPs offer a conservative and esthetically pleasing solution for patients seeking single tooth replacement. While these case reports show promising results, further research and long-term follow-up studies are warranted to validate the long-term success and clinical applicability of metal-ceramic RBFDPs in a larger patient population.

Overall, metal-ceramic RBFDPs represent a valuable treatment option for clinicians aiming to achieve optimal outcomes for single tooth replacement while prioritizing the preservation of adjacent teeth and maintaining aesthetics and function for their patients.

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