

Case Report

Pink and White Aesthetics: Successful Maxillary Anterior Rehabilitation with Integrated Gingival Porcelain Restoration

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Abstract: This case report presents the successful aesthetic rehabilitation of the anterior maxilla using a fixed partial denture with integrated gingival porcelain to address both white and pink aesthetics in a patient with significant ridge defects. A 23-year-old patient presented with missing maxillary left central and lateral incisors (21,22) and mobile right central and lateral incisors (11,12), along with a Siebert's Class III ridge defect characterized by both vertical and horizontal bone loss. Following extraction of the compromised mobile teeth and complete tissue healing, maxillary canines (13,23) were prepared as abutments for a fixed partial denture. Gingival porcelain was incorporated into the prosthetic design to compensate for the ridge defect and achieve optimal aesthetics. The prosthesis successfully masked the ridge defect while providing natural-appearing tooth contours and gingival architecture. Post-operative evaluation revealed good tissue response and patient satisfaction. Fixed partial dentures incorporating gingival porcelain represent a viable and cost-effective alternative to implant-supported prostheses for anterior maxillary rehabilitation when significant ridge defects are present. This treatment modality can achieve predictable aesthetic outcomes through meticulous treatment planning and precise clinical execution.

Keywords: Gingival porcelain, Anterior maxillary rehabilitation, Fixed partial denture, Ridge defect, Pink aesthetics, Siebert's Class III defect, Aesthetic prosthodontics, Dental ceramics.

INTRODUCTION

Back in the days dentists were the fixers and still are but in a more innovative way. Going through the history the process of rehabilitation was usually done with teeth made of gold, bones and other earth materials. However, as the technology advanced the materials however changed to metal, porcelain, lithium disilicate etc. now the prosthesis is practically printed and milled which has been a complete boon in the field of dentistry. The practice of dentistry is demanding, and aesthetic dentistry elevates the complexity by requiring advanced techniques and a deeper psychological understanding of patient desires and expectations. Dental esthetics is not only based on “white component” of the restoration but also on the “pink component.” Many authors suggested that fixed prosthesis with gingival colored porcelain is an alternative option for soft tissue defect. This presented case report describes steps involved in the aesthetic rehabilitation of maxillary anterior teeth with the use of gingival porcelain.

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CASE REPORT

A 23-year-old patient reported to the Department of Prosthodontics and Crown & Bridge with the chief complaint of an unaesthetic appearance due to a missing front teeth. Intraoral examination revealed the absence of the maxillary left central and lateral incisors (21,22) and mobility present in right central and lateral incisors (11,12) (fig. 1). The edentulous ridge exhibited a Siebert's Class III ridge defect, characterized by both vertical and horizontal loss of bone in the facio-lingual dimension.

Considering the extent of the defect, various treatment options were presented to the patient, including a removable partial denture (RPD), a fixed partial denture (FPD), and an implant-supported FPD. The implant option was accompanied by the recommendation of bone grafting to address the ridge defect. However, due to financial constraints, the patient opted for an FPD. To compensate for the ridge defect aesthetically, gingival porcelain was incorporated into the prosthesis. The remaining maxillary right central and lateral incisors (21,22) presented with grade 2 mobility and were advised to be extracted for better prognosis of the prosthesis. After complete healing of the periodontal tissue and extraction sockets (fig. 3), tooth preparation was done in maxillary canines (13 & 23), gingival retraction was done using gingival retraction 000 cord (fig. 2). Later to which the prepared site was air dried and final impression was taken using addition silicone putty and light body. Temporization was done w.r.t 11-21, 12-22, 13-23 after final impression (fig. 4). Coping trial was carried out to rule out any hinderance present during the excursive, lateral and functional movements (fig. 5). The extensions present in the coping were marked and corrected. Final prosthesis try-in was done before glazing of the prosthesis. After careful evaluation of final prosthesis, the bridge was glazed and delivered to the patient (fig. 6). Following cementation, comprehensive post-operative instructions were provided to the patient. The patient was specifically advised to avoid direct biting forces with the anterior teeth to prevent potential dislodgement of the prosthesis.

A follow-up appointment was scheduled for seven days post-cementation to evaluate the patient for any signs of inflammation, occlusal interferences, or discomfort. This recall visit allows for assessment of tissue response and necessary adjustments to ensure optimal prosthetic function and patient comfort.



Fig. 1: Shows missing 11, 12 & Siebert's Class III defect



Fig. 2: Shows occlusal view of the bone defect and edentulous ridge



Fig. 3: Shows edentulous site w.r.t 11-12, 21-22 and prepared 13 and 23



Fig. 4: Temporization of the edentulous site and prepared teeth



Fig. 5: Coping trial



Fig. 6: Final cementation of the prosthesis

DISCUSSION

The aesthetic rehabilitation of the anterior maxilla presents unique challenges, particularly when significant ridge defects are present following tooth loss. In this case, the patient presented with a Siebert's Class III ridge defect, which involves both vertical and horizontal bone loss, creating substantial aesthetic and functional concerns [1].

The use of gingival porcelain in fixed prosthetic rehabilitation has been well-documented as an effective solution for masking soft tissue defects and achieving optimal pink aesthetics [2, 3]. This approach allows for the creation of artificial gingiva that closely mimics natural tissue contours and color, compensating for areas where bone and soft tissue loss would otherwise compromise the aesthetic outcome.

While implant-supported prostheses with bone grafting procedures represent the gold standard for replacing missing anterior teeth, financial considerations often necessitate alternative treatment approaches [4]. Fixed partial dentures incorporating gingival porcelain offer a viable and cost-effective solution that can achieve satisfactory aesthetic results when properly executed [5].

The decision to extract the remaining mobile central and lateral incisors (11, 12) was crucial for the long-term success of the prosthesis. Teeth with Grade II mobility present compromised periodontal support and would likely have resulted in prosthetic failure if retained as abutments [6]. The use of canines as abutment teeth provides superior biomechanical advantage due to their robust root structure and favorable crown-to-root ratio [7].

The incorporation of gingival porcelain requires meticulous attention to detail during the fabrication process, including accurate impression techniques, proper shade selection for both dental and gingival components, and careful contouring to achieve seamless integration with the existing tissues [8]. The success of such restorations depends heavily on the collaborative effort between the clinician and dental technician.

CONCLUSION

This case demonstrates the successful aesthetic rehabilitation of the anterior maxilla using a fixed partial denture with gingival porcelain. When implant therapy is not feasible due to financial constraints or extensive bone loss, conventional fixed prosthetics incorporating gingival porcelain can provide predictable aesthetic outcomes. The key to success lies in proper case selection, meticulous treatment planning, and precise execution of clinical and laboratory procedures. Regular follow-up appointments are essential to monitor tissue health and ensure long-term prosthetic success.

This treatment modality remains a valuable option in the prosthodontic armamentarium for managing complex anterior aesthetic challenges.

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