

REPLACEMENT OF MISSING TOOTH WITH MARYLAND BRIDGE – A CASE REPORT

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Abstract

One may opt for removable or fixed treatment options to replace a missing front tooth. Patient acceptance is always better with fixed options. But these options are expensive and may not be practically feasible in all situations. Proper abutments are required for conventional FPDs and adequate bone is needed for implant placement. Maryland bridge is another conservative treatment option where minimum amount of tooth reduction is required. The dual cure resin cements have significantly improved the performance and survival of Maryland bridge. In this case report, a missing lower incisor has been replaced by a Maryland bridge.

Key Words: Maryland bridge, periodontally compromised abutment

INTRODUCTION

For a missing incisor, there are a number of treatment options available. But any prosthodontic treatment in the anterior region should fulfil the aesthetic demand as well as functional requirement of a patient. Although acrylic removable dentures or flippers are commonly used, most of the patients do not appreciate this treatment modality. Conventional bridges are better treatment option, but may not be appropriate in younger age group. There are more chances of pulpal damage during tooth preparation because of larger pulp chambers. Many adult patients also do not prefer reduction of the abutment teeth. Implant placement is not possible everywhere as adequate bone support is essential for successful implant placement. Implant placement is not possible during growing phase as well. In children and young adults, Maryland bridge is used as an appropriate conservative and interim treatment modality. Maryland bridge can be used as an interim prosthesis before restoring with a more permanent treatment option. Conventional bridges are not good treatment options where abutments are periodontally compromised. Because of its rigid framework, Maryland bridge can act as a splint to stabilize mobile or periodontally compromised abutment teeth. Maryland bridge preparation can be done in medically compromised patients because of its non-invasive and simple procedure. A number of studies have shown that metal-cast resin-bonded fixed prosthesis like Maryland bridge, can give excellent result with clinically acceptable survival rate.¹

CASE REPORT

A 21 year old male patient came to the Department of Prosthodontics and Crown & Bridge with missing lower right central incisor. The tooth was extracted nearly one year ago because of poor periodontal health and mobility. Patient wanted replacement of the missing tooth with fixed prosthesis. But periodontal health of lower left central incisor was poor. There was 7 mm gingival recession in lower left central incisor. It was advised to extract lower left

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Figure 1: Pre-operative view



Figure 2: Gingival recession in lower right central incisor



Figure 3: Pre-operative radiograph

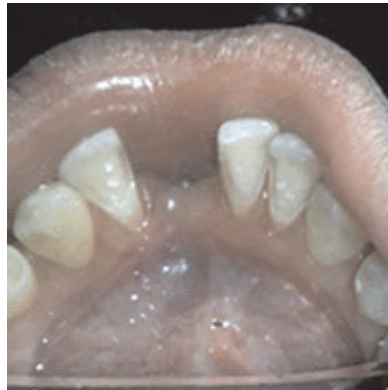


Figure 4: Preparation

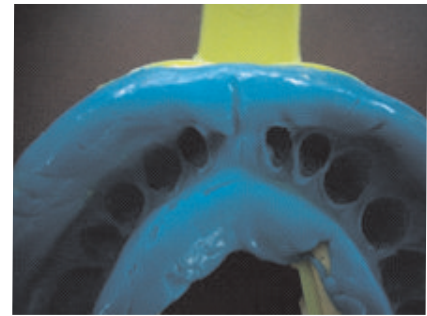


Figure 5: Final Impression



Figure 6 : Final prosthesis (before cementation)



Figure 7: Final restoration (after cementation)

central incisor, followed by replacement with conventional fixed bridge. But the patient was not willing to sacrifice that tooth. So, instead of a conventional bridge, it was decided to go for the Maryland bridge involving lower right lateral incisor and lower left central and lateral incisors. After oral prophylaxis, conservative preparation was done on the lingual surfaces only. Tooth reduction was done without local anaesthesia to ensure that the preparations were entirely restricted to the enamel layer. Counter sinks were made to provide better retention. Impression was taken in polyvinyl

siloxane impression material. After fabrication of the cast, a metal framework with wings extending into the preparation was fabricated. As the space was more, so two pontic were placed in place of the single missing tooth. After ceramization of pontic, the fitting surfaces were sandblasted with alumina oxide to provide better micromechanical retention. The occlusion was checked and adjusted. Prepared tooth surfaces were etched with phosphoric acid and then the restoration was cemented with dual cure resin cement. The patient was recalled at a regular interval.

DISCUSSION

A 16 year retrospective study¹ on metal-cast resin-bonded fixed prosthesis has shown that these have an acceptable clinical survival rate, though lower than conventional FDPs and single implants. Several authors reported higher survival percentages of RBFDPs with a modified or extensive preparation of the supporting teeth compared to a minimal or simply no preparation. For long term survival of a RBFDP, luting cement is extremely important. The luting agent should have less solubility, good strength, and proper film-thickness. The dual-cure resin cements have improved the performance and survival of Maryland bridge. The exposed cement at restoration-tooth margin can be adequately and quickly cured with dual cure system. Although acceptable, the survival of Maryland bridge is hardly predictable. It is better recommended as interim prosthesis or in medically compromised patients because of the simplicity of the procedure. Because of its conservative and minimum preparation, it is recommended for children and adolescents. It can be used in patients where the amount of bone loss impedes the use of dental implants.¹ Because of its rigid framework, Maryland bridge can be used as a splint to stabilize mobile or periodontally compromised abutment teeth. As only lingual or palatal preparation is done, it is highly aesthetic treatment option. So, Maryland bridge is an

appropriate cost effective interim treatment modality in selected cases where other treatment options are not possible or cannot provide good treatment outcome.

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