CASE REPORT

MARYLAND BRIDGES - AN INTERIM PROSTHESIS FORREPLACEMENT OF MISSING ANTERIOR TOOTH : A CASE REPORT

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ABSTRACT

Restoring the missing anterior tooth in young patient possess a challenge, especially in the mandibular arch. As the anterior tooth loss is associated with a psychological impact, there is also a restorative challenge. As the adjacent abutment teeth are small in size, planning a conventional fixed prosthesis in young patient may possess tooth hypersentivity and also, pulpal exposure. In such cases, a resin bonded Fixed partial Denture such as a Maryland Bridge fulfills the requirements of an ideal interim restoration. A Maryland bridge requires minimum tooth preparation; the abutment tooth preparation is usually limited to enamel, hence the chances for pulpal exposure is less. Also, the finish line is usually supra-gingival, easy to maintain the gingival hygiene for patients. Also easy to prepare, locate and make impression for dentists.

KEY WORDS

Resin bonded fixed partial denture, Maryland bridge, missing anterior tooth, Self-adhesive resin cement

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INTRODUCTION

Resin bonded or resin retained bridges (RBBs/RRBs) are minimally invasive fixed prostheses which rely on composite resin cements for retention. These restorations were first described in the 1970s.The first type of RBB was the Rochette Bridge, which relied on the retention generated by resin cement tags through a characteristic perforated metal retainer. The term 'Maryland Bridge' resulted from the development of a type of electrochemical etching at the University of Maryland.[1] More recently bridge retention has been enhanced by the development of resin cements which bond chemically to both the tooth surface and the metal alloy. Removable partial denture may be used as interim prosthesis for initial esthetics but may cause psychological trauma to the patient as the prosthesis needs to be removed when not in use also, during repeated wearing and removal the parts of an RPD may cause irritation to the abutment teeth and the gingiva. Conventional bridge requires adequate amount of tooth preparation of all the surfaces of the abutment tooth which may lead to the pulpal trauma and also may cause hypersensitivity where there is slight gingival recession (P.D.Miller's class II classification) present in the abutment tooth`.[2]

CASE REPORT

A 26 years old male patient had visited the dept. of prosthodontics and crown & bridge at Haldia Institute Of Dental Sciences And Research with the complaint of missing anterior tooth and he wanted replacement of the same. On examination his right central incisor was found to be missing (41). Also, his intraoral examination revealed less tooth structure on left central incisor.

Hence, a full coverage three unit fixed partial denture carried chance of dentinal hypersensitivity and more over a risk for pulpal exposure in relation to the left central incisor (31). Dental implant prosthesis option was eliminated after the patient revealed his financial constraint.

A Maryland bridge was planned where the left central and the right lateral incisor were used as abutments. Minimum tooth preparation (about 0.5







mm) was done on lingual surface of the abutment teeth (31 and 42). Care was taken to limit the preparation until the linguo proximal line angles of the abutments. Parallel retentive grooves were made in each preparation on the surface facing the edentulous space, a supragingival chamfer finish line was given.

Impression was made using condensation silicone. Shade selection was done using Vita 3-D Master shade guide. The prosthesis was cemented using Kerr Maxcem Elite Self Adhesive Resin Cement. The occlusion was verified in centric and eccentric mandibular positions and it was made sure that there were no interferences. Post cementation instructions were given and patient was followed up at regular intervals.

DISCUSSION

Replacement of missing teeth with conventional fixed partial denture usually involves the conventional tooth preparation of all the surfaces of the adjacent teeth as abutments which requires significant tooth reduction. Also involves increased pulpal response during tooth preparation and later the possible exposure of the crown margins as natural apical migration of the epithelial attachment proceeds with age, may also act as deterrents.[3]

Removable partial dentures are the cheapest and the most easily fabricated options but they are often unacceptable to the patient because they are bulky, uncomfortable and not very aesthetically pleasing, often leading to papillary hyperplasia if proper oral hygiene is not maintained.

Among the most acceptable and conservative options available currently for replacement of missing teeth are implants but financial constraint of patient necessitates for another treatment option- Maryland Bridge which offers minimal tooth preparation, with good aesthetic outcome at an affordable cost with minimum chair-side time.[4,5] Other merits are easy impression making due to supragingival margins and avoidance of any interim restoration.

In the pontic design, vertical grooves are the particular feature which has been identified as reducing stresses on the cement bond and increasing resistance to debonding forces. Also, as the labial side is not involved in the tooth preparation, it provides a natural esthetic appearance. However, the three most common complications associated with resin-bonded prosthesis are debonding (21%), tooth discoloration (18%) and caries (7%),[6,7] but it is still the best choice as an interim prosthesis for the replacement of missing anterior teeth.

CONCLUSION

Resin bonded bridges can be highly effective in replacing missing teeth, restoring oral function and aesthetics and result in high levels of patient satisfaction.

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