COMMENTARY

THE PROCERA MARYLAND BRIDGE: A CASE REPORT

Terry Donovan, DDS*

Authors Holt and Drake should be complimented on their case report regarding the use of the Procera Maryland fixed partial denture in the treatment of a young patient with a congenitally missing maxillary lateral incisor. The article begins with an excellent review of options for the replacement of missing anterior teeth, providing advantages and disadvantages as well as indications and contraindications for the various options.

In this specific patient, it was determined radiographically that growth was continuing to occur, so the use of an osseointegrated implant was not indicated at this time. An esthetic alternative was essential for this patient, and a conventional Maryland fixed partial denture would cause graying of the abutment teeth. Although readers of the case report should clearly understand that there is no clinical evidence base for the Procera Maryland fixed partial denture and the patient treatment must thus be considered experimental, it was an appropriate choice in this situation.

The ultimate restoration for the congenitally missing lateral incisor will be an implant-supported crown. The zirconia prosthesis described will only need to survive a few years until growth has ceased and an implant-supported restoration can be considered. In the meantime, this conservative restoration will provide both esthetics and function at the cost of minimal amounts of tooth structure. The small amount of enamel removed with the conservative preparations can easily be replaced with bonded resin composite.

A few of the details of this rendered patient care should be highlighted. Dentists should understand that zirconia restorations cannot be etched. Adhesion in this restoration was established by firing porcelain onto the internal surface of the lingual wings of the prosthesis. This porcelain was then etched with hydrofluoric acid and bonded to the prepared, etched enamel. One consideration that might have been made would be to include the use of a silane coupling agent to further enhance the adhesive bond to the etched porcelain.

The pontic site was prepared to allow an ovate pontic design, which further improved the final esthetic result. A nightguard was provided after bonding the fixed partial denture and, with good patient compliance, should improve the potential lifespan of the prosthesis.

Another consideration that might have been made would be to use the cuspid as the only abutment and provide a two-unit prostheses. A number of clinical trials of resin-bonded prostheses have reported success rates close to 95% with such prostheses, and it appears that two-unit adhesive fixed partial dentures have higher success rates than three-unit prostheses.[1,2]

Apart from this critique, two other minor criticisms might be made. The preparation design seems quite conservative and did not appear to provide a single path of insertion. These conservative preparations will probably be adequate for the relatively short-term service expected from this fixed partial denture. If longer term service was expected, more retentive preparations would have improved the prognosis and the preparation could have then protected the bond.

It is noted that the master impression was made using polyether impression material and was sent to the laboratory for pouring. Depending on the distance from the office to the laboratory, the ambient relative humidity, and how much time might elapse from impression making to pouring, that might prove to be a slightly risky proposition. Polyether impression materials are quite hydrophilic and can absorb moisture from the air. If the relative humidity exceeds 50%, polyether impressions are unstable and should be poured as soon as possible to achieve maximum accuracy.[3] In general, if impressions are sent to the laboratory for pouring, a totally dimensionally stable impression material like polyvinyl siloxane is preferred.[4]

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**Professor and section head of Biomaterials, Department of Operative Dentistry, School of Dentistry, University of North Carolina, Chapel Hill, NC, USA*