Case Report

Maryland Bridge: A case report.

Introduction
Replacement of missing teeth with fixed artificial ones usually involves the adjacent teeth as abutments. In young patients with young and immature teeth this treatment option is not ideal due to large pulp size and transitory nature of gingiva[1]. Treatment planning for such cases requires restorations with minimal preparation of abutments and an essentially interim or temporary nature of the restoration. Many designs have been advocated, e.g. Maryland bridges, Rochette bridges[2,3]. While these restorations have compromised retention and corresponding life spans, newer self-etch adhesive systems[4] help to ensure that such restorations are retained for reasonably long periods of time. The following case report demonstrates the treatment of such a case.

Case report
Missing #11 and #12 in a fifteen year old female patient had been unrestored for a year. On clinical and radiographic examination, the teeth demonstrated gingival margins much coronal to the cementoenamel junctions, and large pulp chambers. Considering the age of the patient and physical characteristics of the teeth, a conservative adhesive bridge was planned as interim restoration.

Minimal preparation of the abutments (#13 and #21) was performed on the lingual surfaces only[3]. Care was taken to ensure that the preparations were not extended beyond the palato-proximal line angles on the abutments. Parallel retentive grooves were made in each preparation on the surface facing the edentulous space.

Impression procedures were carried out with addition silicone (Express XT, 3M ESPE, Seefeld, Germany).

A metal framework with ‘wings’ [3] extending onto the preparations was fabricated with soft, non-precious alloy, on which retention beads and nailheads were created to retain the veneering material in the Pontic area.

The artificial teeth were fabricated on the framework with heat-curing acrylic resin using a compression-molded technique.

The fitting surfaces of the ‘wings’ were sandblasted with alumina 250µ[5] to create micromechanical retentive surfaces for the cement.

The restoration was cemented in place using a universal self-etch resin cement (Rely X U100, 3M ESPE, Seefeld, Germany).

The occlusion was checked and adjusted.

A patient was followed up at regular intervals. The restoration demonstrated successful retention and function at 1 year post-operative.

Discussion
Large pulp chambers in the abutments, expected transition in the position of the gingiva and age of the patient were factors that precluded the use of conventional fixed prostheses in this case. The restoration planned was considered ideal because of its conservative nature that would allow the tooth and soft tissues to mature before a more conventional and definitive restoration be fabricated[1,3]. Poor retention of these restorations usually is associated with early loss of the restoration, resulting in repeated luting efforts. The new self-etch universal resin cement systems[4] are valuable tools in ensuring longevity of such restorations that allow them to be in service for the intended period. Although a 74% success rate at 4 years[6] is considered satisfactory for adhesive restorations, the uneventful 1-year follow up in this case created much optimism regarding its tenure in service, at the end of which definitive prosthodontic treatment may be rendered. These restorations essentially remain ‘long term provisional restorations’ or interim replacement of missing teeth[7].

Conclusion
Treatment planning compromised by patient factors may be compensated by technology of newly developed products. The self-etch universal resin cement systems are an invaluable aid to this effect.

References

Figures and Legends:
Fig. 1: Pre-operative view.
Fig. 2: Tooth preparations.
Fig. 3: Restoration on cast demonstrating 'wings'.
Fig. 4: Sandblasted fitting surface of 'wings'.
Fig. 5: Self-etch resin cement.
Fig. 6: Restoration in mouth.
Fig. 7: Restoration in occlusion.
Fig. 8: 'Before', 'After' views.