Minimally Invasive Bridge Preparations

Minimally Invasive Esthetic Anterior Bridges: The Lingual Retained Multi Staple and Groove Overlay
The Rainey Bridge
Slide #1 & 2. Genetic maxillary right peg lateral and missing left maxillary lateral incisors restored with minimally invasive crown preparation technique. The “Rainey Bridge.”
Patient # 1.
Maxillary left lateral pontic, lingual retained multiple staple and groove overlays on adjacent central and cuspid. Right peg lateral restored with a minimal prep PVC. Restorations were bonded in place in 1982, Photographed December, 2008
Patient #2.

- This series is the Nephew of Patient #1 with a missing maxillary right lateral incisor and the remnants of a nasal-oral facial cleft. Patient opted not to have the final surgical repair of the remaining fissure in the area of the right lateral, and chose to have an esthetic porcelain prosthesis replacing the missing lateral over the residual cleft following extensive orthodontic treatment.
Pre-operative photographs post orthodontics. Residual cleft is visible in right lateral region. Patients will pre-whiten to a satisfactory shade prior to preparation.
Final Preparations of abutment teeth. Preparations are done in the enamel entirely on the lingual under magnification with exquisite attention paid to maintaining parallel relationship of the interproximal grooves. Author uses 699 taper fissure carbide burrs for preparation.
Impression of Final Preparations. Multi lingual and interproximal grooves combine to form interconnecting “Staples” with maximum enamel surface area. No dentin is involved.
Working Model for dies
Final Prosthesis with stop over incisal edge of central incisor. Stop helps visualize the complete seating of the Lingually Retained Minimally Invasive Bridge.
Final Prosthesis with stop over incisal edge of central incisor at try-in.
Final Bridge Bonded in Place with Panavia® C&B Opaque cement
Patient #3. Daughter of Patient #1. Bi-lateral missing lateral incisors, post orthodontics. Notice also that ortho cement was removed without destroying the natural facial anatomy of the anteriors.
Patient has whitened teeth to the desired shade prior to bridge preparations.
Checking for Clearance at preparation appointment.
Finished lingual multi groove and staple Preparations
Working dies
Minimally Invasive “Rainey Bridges” ready to seat. Left bridge prior to Air-Abrasion, right bridge post Air-Abrasion. Wax on CEJ margin to facilitate cement removal. Note multi grooves forming retentive “Staples” in the “Lingual Retained Multi Staple and Groove Overlays”.
Bridge try-in. Right pontic required slight adjustment before bridge would seat correctly.
Pre Cementation complete seating of Appliances. Metal show-through will be hidden by opaque Panavia® cement.
At the cementation appointment, both the appliance and preps must be Air-Abraded to remove contaminants.
Teeth are etched, primed, and bridges are firmly seated with Panavia 21® Opaque cement protected with Oxyguard II®.
Final appearance of freshly cemented bi-lateral “Rainey Bridges”.
• The Minimally Invasive “Rainey Bridge” technique will predictably deliver long lasting and reliable results spanning decades of use. The patient will be spared the dilemma of subgingival margins causing inflammation of the facial gingiva and subsequent apical migration and exposure of the margin necessitating periodic replacement of the bridge.

• As the natural enamel ages and darkens, the esthetics are easily restored by periodic “Whitening”, re-matching the original shade of the ceramic pontics.