Periodontal Implant Center
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Periodontal News North

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Successful and Esthetic Implant Restorations

Replacing missing or failing anterior teeth with dental implants is often challenging and demanding. These cases require meticulous planning with considerable time devoted to setting realistic expectations for each patient based on their unique circumstances. There are certain surgical criteria, common to every patient, which are critical for an anterior implant to be successful:
1) Correct implant positioning, 2) Adequate hard and soft tissue support and 3) Correct gingival contours that harmonize with the contours of an ideal restoration.

Correct positioning of the implant is crucial for an acceptable esthetic outcome. If placed too shallow, the restoration will appear short or require a restoration with a facial cantilever (leading to difficulties with oral hygiene). If too deep, the interproximal bone along the adjacent teeth can be compromised and lead to bone loss / papillae loss / dark triangles. Deep implants can also be more difficult to clean due to increased sulcus depths. Implants placed too buccal or lingual can lead to restorations that appear too long or too short and may not harmonize with the emergence contours of the adjacent teeth.

For most anterior implants, the goal is to place the fixture 3mm apical to the anticipated gingival margin position and 1-2mm palatal to the facial surface contours of the final restoration at the level of the gingival margin. If these placement parameters cannot be achieved with the available bone and tissue, either an esthetic compromise should be expected or an augmentation is indicated (bone graft, or tissue graft, or both).

Tissue grafting may also be considered for patients with an extremely high esthetic demand and a thin gingival biotype. Even in the best of cases, a slight amount of gingival recession is expected when a natural tooth is replaced with a dental implant. This risk of recession is elevated when the gum and bone housing is thin. When this is the case, a connective tissue graft is often discussed to accompany the transition to an implant and help prevent gingival recession that could possibly result in an esthetic compromise.

The shape of the gingiva around the final restoration is always a critical component of a successful outcome. When possible, we prefer to replace hopeless teeth with implants at the time of extraction and maintain the natural gingival architecture. The utilization of 'customized' or 'individualized' healing abutments to maintain existing gingival contours is key. For cases where implants are placed when teeth are already missing, customized healing abutments are still utilized to develop and shape gingival contours for the best possible esthetic outcome.

Lastly, abutment selection and prosthetic design / contours / shade are critical for excellent end results. Final custom abutments should match the developed gingival contours precisely and have cement margins no deeper than 1.5mm subgingivally. If possible, when angulation allows, screw-retained restorations are preferred over cemented restorations.

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This case was managed with immediate implant placement following trauma and removal of the fractured incisors. The contours of the surrounding gingiva were preserved with customized healing abutments fabricated chairside at the time of implant placement.



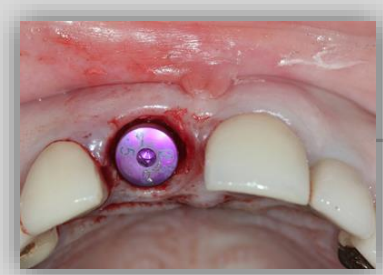
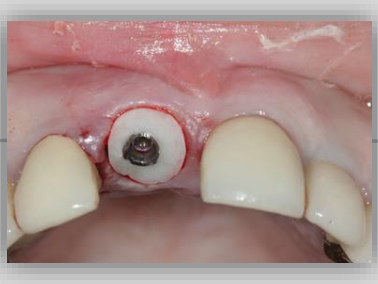
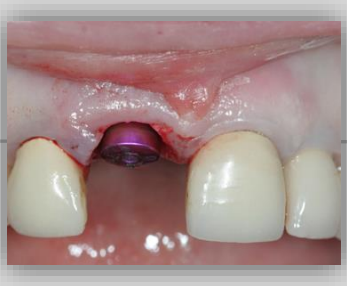



Examples of custom healing abutments showing their proper anatomic contours and emergence profiles.

Abutments such as these are routinely fabricated for anterior cases, both for implants placed at the time of extraction and those placed in healed ridges.




Tooth #8 removed due to periodontal abscess associated with a radicular groove. Dental implant was placed immediately with a customized healing abutment to support the soft tissue contours during healing. A provisional restoration (*shown at right*) was utilized to confirm contours and esthetics before fabrication of the final restoration.


Side-by-side comparisons of stock healing abutment versus customized healing abutment. Note the customized abutment achieves a number of goals superiorly: 1) Supports ideal tissue margin position and shape, 2) Seals more closely against the lateral walls of the socket, and 3) Allows more vertical space for an overlying interim retainer.

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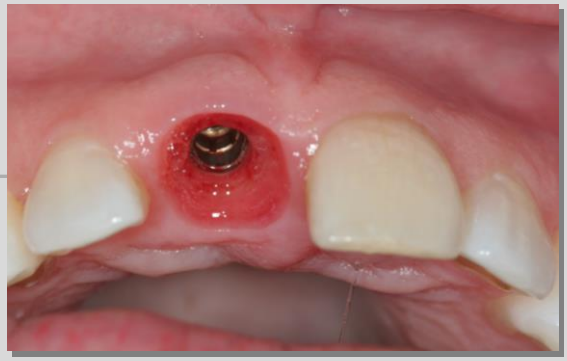
Tooth #8 removed due to progressive root resorption and replaced with a dental implant at the time of extraction. Care is always taken in the presence of resorption or infection to clean and disinfect the socket prior to placement of the implant fixture. Any needed bone grafting is also completed in conjunction with the extraction and implant placement.

Baseline

Immediate Post-Op



14 Weeks

Ready for impression

Implant angled too far to the facial and is non-restorable.

Implant is too deep and lacks adequate gingiva.

Implant is too facial and lacks adequate gingiva.

***Photo on left is pre-treatment (tooth #9 was hopeless due to vertical root fracture). Center photo shows customized healing abutment fabricated at the time of extraction and immediate implant placement to preserve gingival contours during healing. Photo at right is the final restoration supported by a zirconia custom abutment.**

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