Debanding Day

The final step in creating simply spectacular smiles

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F or the aesthetic-driven practice, the debanding appointment includes more than simply braces removal. Adjunctive cosmetic procedures such as enamelplasty, soft-tissue laser recontouring, bleaching, and cosmetic retainers can dramatically enhance smile aesthetics. This article will provide a comprehensive overview of the debanding protocol in our office, and highlight how simple aesthetic steps can produce spectacular smiles.

Smile Design

A successful debanding appointment begins with proper smile design. A beautiful smile 1) addresses the patient’s chief concerns; 2) is broad, with prominent exposure of the first bicuspids and minimal black shadows present in the buccal corridors; 3) displays a gentle smile–arc consonant with the lower lip; 4) has artistic finishing and minimal central incisor prominence, 5) and reveals 1 to 4 mm of gingival splay (Figure 1).

Smile breadth is determined by the intra-arch width and axial inclination of the cuspids and first bicuspids (considered by many cosmetic dentists as one of the “eight anterior teeth”).1 Smile consonance is achieved with proper bracket placement of the canines and incisors, and can be improved at the detailing phase of treatment by stepping down the incisors. Often a slightly deep occlusion (3 mm of overbite) produces better smile consonance.

Informed Consent and Debanding Technique

In my office, I ask all patients to complete a debanding consent form (see page 66) prior to having their braces removed. The purpose of this document is to eliminate any misunderstanding. Our debanding consent informs the parent that braces will be removed upon their approval and reviews the patient’s responsibility during the retention phase.

Before I remove the braces, I want the parent’s approval that they are fully satisfied with their child’s smile, and I want the child to understand the importance of retention and the cost of lost retainers. This is the time to scrutinize every aspect of the patient’s smile to ensure perfect results.

Without removing the elastics or archwire, I first loosen the bands and then debond the brackets. The bands, brackets, and wires are removed in one piece. When debonding ceramic brackets (which often requires more torque), I use finger pressure to stabilize the tooth. Alternatively, I may instruct the patient to bite down on a cotton roll or bite-registration wax.

For removing Incognito brackets (the new generation of 3m Unitek’s iBraces), I recommend using either a posterior debonding plier, an angulated ligature cutter, or the Ormco ETM lingual debonding plier, which is effective for removing anterior lingual brackets though a bit cumbersome to operate.

Hard-Tissue Aesthetics: Enamelplasty and Smile Rejuvenation

Well-aligned teeth do not make a perfect smile. In my office, with our patient’s approval, aesthetic enamel recontouring is a part of most debanding procedures.

Enamelplasty consists of flattening unsightly mammelons, recontouring misshapen or fractured incisal edges, improving facial transitional line angles, creating balanced incisal embrasures, and reducing thick marginal ridges on mongoloid incisors (Figure 2, page 66).

Proper aesthetic enamel recontouring should follow two basic principles of cosmetic dentistry. First, the width of maxillary central incisors should be approximately 80% the height.3 Second, the widths of the anterior teeth should follow the “golden proportion.” That is, the width of the lateral incisor should be 2/3 the width of the central incisor, and the width of the mesial half of the canine should be 2/3 the width of the lateral incisor.

While the need for enamelplasty is a result of tooth shape, the
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extent of incisal reduction is often guided by the amount of overbite and the length of the incisors. In patients with small incisors or large incisal fractures, enamelplasty is enhanced by the addition of soft-tissue laser surgery.

**Soft-Tissue Aesthetics: Gingival Architecture Recontouring**

Aesthetic soft-tissue laser surgery aims to produce an acceptable gingival splay with proper gingival shape and contour, while incorporating the cosmetic principles of proper tooth size and proportion mentioned above. Recommended gingival shape (or curvature of the gingival margin) has the gingival zeniths of the maxillary lateral incisors and mandibular incisors coinciding with the long axes of the teeth. Alternatively, the gingival zeniths of the maxillary central incisors and canines are distal to their long axes (Figure 3). Ideal gingival contour (or 3D gingival topography) is characterized by balanced, knife-edge interdental papillae.

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* Under normal patient use.
** Supporting article: Lovitts, Chabon, et al. JCO Feb 2005 "Enhanced Retention of a Retainer Using a "Homogeneous Base"
space consolidation, I perform papilla-flattening by operating the laser at approximately 1W and moving the laser tip quickly side-to-side over the selected region. In my office, I use the EZlase 940 diode laser from Biolase with a disposable 400-μm-diameter tip.

In patients with low clinical crown height, impacted teeth, transpositions, or poor oral hygiene resulting in gingival hypertrophy, edematous gingival margins, or bulbous papillae, soft-tissue laser surgery during treatment not only aids patient home care, but also allows for better bracket repositioning and final detailing. When strictly enhancing soft-tissue architecture, I prefer to perform laser surgery one visit prior to the debanding appointment (if the tissue is healthy) or 1 month after debanding (if the tissue was edematous).

Retention and Tooth Whitening

One of the greatest challenges is maintaining aesthetic tooth position after debanding; after all, as an orthodontist your business partner is only 13 years old. In my office, I place U2112 and L321123 bonded retainers using twisted 0.010 ligature or Ortho Flex Tech from Reliance Orthodontic Products with overlay Hawley or A+ Essix retainers. I instruct patients to wear their removable retainers 22 hours per day for the first year followed by “night-time for lifetime.” (Figure 4)

I place bonded retainers one visit prior to debanding (except in lingual cases) to ensure proper bond strength and patient home care. I see patients in retention at the following times after debanding: 1 month, 3 months, 9 months, and 1 year. Our office retention protocol and commitment to our patients after debanding has maintained the longevity of our beautiful smiles and created remarkable positive recognition throughout the South Riding community.

The retention phase is not only a critical time in maintaining smile aesthetics, but an opportunity to provide smile enhancement. In our office, adult patients can purchase bleaching gels to be used in their Essix retainers at night (the proceeds of which go to the school charity of their choosing). Additionally, adolescent patients with edentulous anterior space are given cosmetic flippers (from AOA Laboratories) at no additional cost.

Capturing the Final Photograph

Professional photography provides the finishing touches on a spectacular smile. You only need see the beautiful photographs from the practices of David Sarver, DMD, MDS, and Moody Alexander, DDS, MS, that grace the cover of the AJO-DO to understand the dramatic effect of great photography. In my office, I use the Canon 40D with a macro ring flash, a white-background flashbox from CliniPix with child and adult “V”-shaped check and lip retractors from Orthopli. I take all photographs myself and e-mail patients smile montages with a personal message at the end of treatment.

Debonding day is a celebratory moment for our patients and family. As an orthodontist committed to providing the best possible smiles, consider implementing adjunctive cosmetic procedures at the end of treatment to dramatically enhance smile aesthetics as well as the overall treatment experience in your office. No matter how you read it, “orthodontics” should mean more than simply straight teeth.

References for this article can be found with the online version at OrthodonticProductsOnline.com.

Neal D. Kravitz, DMD, MS, is in private practice in South Riding, Va, and White Plains, Md. He is a diplomate of the American Board of Orthodontics, and is on the faculty at the University of Maryland and Washington Hospital Center. He can be reached at nealkravitz@gmail.com.
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