Paste, wrap, and shimmy: a regimen for the prevention of gum disease

Craig W. Jester, DDS

The body of evidence showing a possible correlation between gum infection and systemic diseases is well documented and growing. At the same time, the prevalence of gum infection is increasing in the general populace. Gum infection and disease are routinely seen in patients who adhere to regular dental hygiene regimens and see their dentists on a regular basis. One of the reasons typical daily dental care does not eradicate gum disease (gingivitis) is that the usual home care regimens do not attack a major underlying cause of gingivitis: the layer of biofilm in the sulcus surrounding the tooth’s root. This biofilm harbors and protects the bacteria that cause gum disease and root decay. Research has shown that there are no “magic bullets” in the form of rinses, pills, or special tools that effectively destroy the bacteria and its protective calyx. Therefore, daily dental regimens must be changed until the absence of gum infection and inflammation becomes the standard of care.

The Paste, Wrap, and Shimmy method is presented in a way that can be understood by all patients. It can be reproduced and used as a teaching supplement by the dental team. The method is conceptually simple and inexpensive, but not intuitive or easy. It must be coached and reinforced; however, if implemented, it can be very effective. The author’s office has increased the length of new patient and recurring hygiene visits so that the method can be properly taught through repetitive practice and visual presentations. Prevention is not insurance-driven, so dentists most often provide it as a free service. The rewards are significant, however, and on initial exposure to this method, patients routinely ask: “Why haven’t I been shown this before?” They will also have an expectation that the learning process will be repeated at each visit until they are free of infection.

Received: February 9, 2012
Accepted: June 20, 2012

Many dental patients exhibit both root decay and gingivitis. These distinct problems frequently occur in tandem. In even the most fastidious people—those who brush and floss twice or more daily—localized areas of gum infection and inflammation can be found. How can this be when these patients are committed to doing what their dentist advises? The reason is that in their cleaning efforts, they miss the area under the cuff of soft tissue—the sulcus or periodontal pocket—that surrounds the base of every tooth (Fig. 1). Even in healthy mouths, there is a 1-3 mm space between the gum and tooth that acts as an undisturbed, protected culture tube for bacteria. Typical daily dental regimens don’t eradicate the layer of biofilm that forms in the sulcus surrounding the tooth’s root. This biofilm acts as a protective structure (calyx) that harbors and protects the bacteria that cause gum disease and root decay. Here, according to Schacter, “the bacterial biofilm is in direct contact with host tissues along an ulcerated epithelial interface,” and releases its metabolic byproducts to infect the gum and decay the roots (Fig. 1). The most highly organized form of the biofilm occurs after 3 to 12 weeks and is capable of causing the most harmful gum infections. Reduced salivary flow (dry mouth) and lowered host resistance also contribute to these infections in the elderly, but all ages are affected. Paquette et al predicted that 75% of the adult population has at least mild gingivitis. The author of this article estimates that the number is closer to 95%.

Conventional flossing and brushing do not vigorously disrupt the organized plaque from the tooth surface (the biofilm attaches to the tooth, not the gum). Many people regularly floss without ever going deeply under this cuff of tissue. They believe their flossing procedure to be incorrect if it causes their gums to bleed: so frequently, the bacteria thrive undisturbed. The biofilm forms an effective protective barrier, a mucopolysaccharide film, which resists rinsing, water jets, ultrasonic brushes, and even harsh antibacterials. How can patients effectively clean under this cuff of tissue and disrupt the biofilm on the roots without damaging their gums?

Materials and methods

Commercial toothpastes contain an abrasive, which is useful in breaking up the biofilm. However, for this pumice to be effective, the toothpaste needs to access the tooth surface under the gumline and be carried onto the root. To do this, the patient should begin by using a soft, rounded bristle brush that is dry (saliva will quickly moisten the brush) and loaded with an ADA-approved toothpaste, which can be found at the ADA MouthHealthy Seal Products website (www.mouthhealthy.org/ada-seal-products).

This pumice must be carried onto the root with very short, choppy movements, tooth by tooth, using the ends of the bristles to move the paste and clean the root surfaces from the cheek side and then the tongue side, with the patient lightly biting the back of the brush to sink the bristles under the gums. The goal is to

Fig. 1. Biofilm in the periodontal pocket. (Illustration courtesy of Dr. Fay Goldstep.)
work around the arch, pushing the pumice down the tooth and under the tissue cuff to clean the root surface (Fig. 2). The brushing can be effectively done with a mechanical or ultrasonic brush as well, but care should be given to hold the brush longer in each area to allow it time to work along the gum line.

After spitting out excess saliva, the patient moves to the second, and more important, part of the routine: flossing the toothpaste under the tissue cuff and onto the roots (Fig. 3). Since the brush bristles will only reach a third of the depth into a healthy sulcus, more root surface can be pumiced with the floss than with the brush. Have the patient apply toothpaste to his/her finger and rub the toothpaste along the base of their teeth on the cheek side, a quarter of the mouth (quadrant) at a time. Reloading of the paste for each quadrant will be necessary, due to the dilution of the toothpaste by the saliva (Fig. 4). Then, wrap 18-24 inches of floss around the last 3 fingers of each hand (with the index fingers and thumbs free), leaving 0.5 in between the opposing fingers (Fig. 5). If the index fingers are further apart than 0.5 in, the floss cannot be properly controlled. Moving their index fingers inside the mouth, the patient should slide the floss through the contact point between the first 2 teeth, wrap the floss around 1 of the teeth and shimmy the toothpaste up and down, 2 to 3 times on the first root, then move to the next tooth—over the mound of gum between the 2 teeth (papillae)—and clean the adjacent root in the same way. The mantra is paste, wrap, and shimmy.

In between each set of tooth contacts, the patient should push forward when wrapping around 1 root and pull back in order to wrap around the next tooth. The patient should pumice 2 roots in each interdental space, and then release 1 end of the floss and pull it through rather than popping up through the contact and doing any damage to crowns, inlays, or fillings. The patient should work his/her way down the quadrant. Thoroughness is the key.

All commercial toothpastes have 3 important ingredients: a pumice, a bactericidal, and fluoride. Of these, the abrasive is the most important. The most common pumices are hydrated silica (H₄SiO₄). The antibacterials are usually some form of sodium, and the fluorides can be either stannous or sodium.
fluoride. The pumice physically disrupts the biofilm's mucopolysaccharide covering, increasing both the bactericide's and fluoride's effectiveness. The patient should expect a little tingling as these elements are carried down the root into the sulcus, and there may be some bleeding in the most inflamed areas due to ulcers in the lining of the sulcus. Both the tingling sensation and bleeding resolve quickly. The patient should expect an overall decrease in bleeding after 2 to 3 weeks of this daily treatment.\textsuperscript{17} Areas of bulky or bulbous tissue should shrink as well. If some of the more difficult areas continue to bleed, the patient should spend more time on these isolated areas at each cleaning, and usually these areas will cease to bleed. Breath odor issues should also improve. In periodontal pockets greater than 4 mm, you may not touch bottom with the floss, and these pockets may require professional help. Scaling and root planing in the dental office is still the standard of initial care.\textsuperscript{18}

Be aware that many toothpastes are so heavily laden with flavorings and astringents that when first contact is made with the tongue and taste buds, the mouth may feel clean before any removal of bacteria from the teeth. Key techniques for patients to effectively remove bacteria using the Paste, Wrap, and Shimmy method can be found in the table.

**Conclusion**

In 5 years of teaching this technique, the author and his staff have had some very satisfying results. The staff schedules an extra 15 minutes at every new patient's first appointment to teach the regimen, and additional hygiene time is allotted at every recall appointment to reinforce it. The techniques are demonstrated in the patient's mouth, and the staff uses intraoral images and presentations for reinforcement. Approximately 20% of the people accept it and use the technique after their first exposure to the regimen. Another 20% never master it due to lack of interest. For the 60% who make some attempt at brushing and flossing in this manner, we see very steady improvement. In teaching events around the country, the author finds that many dentists practice this technique themselves in some form—but don't believe their patients will put forth the effort to master it. However, when first introduced to it, almost every patient asks, “Why hasn't anyone shown me this before?”

It is a fair question, and it deserves an answer. In 1972, Dr. Robert Barkley wrote a popular book of the period, *Successful Preventive Dental Practices.*\textsuperscript{19} He did not have intraoral cameras or PowerPoint presentations to help him teach his patients, nor did he have a complete understanding of biofilms. But he did have a passion to educate his patients to become independently healthy. He proclaimed a need for the dental team to become educators, or watch the profession “dilute...toward mediocrity.” Our patients deserve this self-help and health-centered dental approach. To paraphrase a popular marketing theme, "Paste, Wrap, and Shimmy...you can do it; we can help."
So much begins with a smile........

From making new friends to making a great first impression, so much begins with a smile. Every day, our smiles touch many people. A smile conveys confidence, warmth, and friendship. It is a vital part of our everyday lives.

It is our mission at Jester and Saldivar Dental Associates to ensure each of our patients have a smile of which they can be proud. By providing our patients with a variety of dental services, from Esthetic Dentistry to Orthodontics to Implantology, Drs. Jester and Saldivar are able to address each patient’s individual needs to help him or her achieve and maintain a smile that is both healthy and beautiful.