

Knotted Floss Technique

Aaron F Gomes^{*}, Meru S^{**}, Amit Rekhi^{***}

Abstract

Whenever a patient finds gingival embrasures that are too wide for use of a regular dental floss and too thin for insertion of an interdental brush, a dental floss can be modified by tying a simple knot on it and using the knotted area for hygiene of such wide Type-I gingival embrasure.

Keywords: Dental floss, Embrasures, Oral hygiene.

Introduction

In spite of a better understanding of the role of microorganisms in plaque-associated gingivitis, a scientific basis for intercepting the development of gingival inflammation by targeting specific microorganisms has not yet emerged.¹ Therefore, in preventing and treating plaque-associated gingivitis in the majority of patients, we currently have to rely on a non-specific model, aiming for regular plaque removal and elimination of plaque retaining factors.¹

Tooth brushing may be effective in removing plaque on buccal and lingual surfaces, but it will not reach interdental plaque. To accomplish this, there are available a number of other oral hygiene devices. These include dental floss or tape, interdental brushes and tooth picks.²

Choice of these interdental aids in particular areas depends upon the manual dexterity of the patient, as well as upon the type of interdental embrasure. Perry³ has classified interdental embrasures, depending upon the filling of the gingival embrasure by the interdental papilla. Hence, in Type-I, floss is used, and in Types-II and III the incrementally wider proxybrush and unitufted brushes are used respectively.³

Many clinical patients have complained that there are gingival embrasures which are too wide for effective use of dental floss, and too narrow for proper atraumatic use of proxbrush. Patients complain of these embrasures when a tooth with substantial cervical

constriction like molars, has tipped mesially, or chronic food impaction has caused minor distal movement of the distal tooth and slight mesial adjustment of the mesial tooth. Perry³ has recommended that coronoplasty accompanied with restorative therapy should be utilized to correct the wrong contours of the tooth and treat food impaction. Recurrence of food impaction is noticed especially during chewing of fibrous (non-vegetarian) food and thus a source of major discomfort to the patient.

Such food lodgment in the confines of the embrasure can lead to gingival/periodontal inflammation in its vicinity and its deleterious outcomes. Patients usually resort to use of toothpicks for effective removal of tightly lodged (impacted) food as dental floss and proxbrush are ineffective for their respective reasons, i.e., the former is too small and the latter is too wide for effective removal. Commonly, the patient complains that a dental floss is unable to fully engage and remove all of the food lodged in-between such wide Type-1 embrasures. Moreover, wrong angulation of toothpick with respect to the gingival margin can lead to gingival trauma. A dental yarn and a powered flossing device may be useful in such conditions,³ but these aids are not so easily available across many provinces of developing countries.

The dental floss can be made effective to clean such wide Type-1 embrasures by tying a knot on the dental floss of 12-18 inch length.

^{*}Professor & Head, Department of Periodontics & Oral Implantology, Uttaranchal Dental and Medical Research Institute, Mazri Grant, Dehradun, Uttarakhand, India.

^{**}Professor & Head, Department of Oral Medicine, Diagnosis & Radiology, Uttaranchal Dental and Medical Research Institute, Mazri Grant, Dehradun, Uttarakhand, India.

^{***}Senior Lecturer, Department of Public Health Dentistry, Uttaranchal Dental and Medical Research Institute, Mazri Grant, Dehradun, Uttarakhand, India.

Correspondence to: Dr. Aaron F. Gomes, Professor & Head, Department of Periodontics, Uttaranchal Dental and Medical Research Institute, Mazri Grant, Haridwar Road, Dehradun, Uttarakhand, India. **E-mail Id:** aarongomes@hotmail.com

The increased cross-sectional width of the floss at the knot will be sufficient to dislodge the food entrapped, resulting in an effective plaque control. The floss will easily go across the contact points in the unknotted area (Fig. 1_top) while the knotted area can easily engage and dislodge the food that has got stuck in the wider

Type-1 embrasure. (Fig. 1_middle and bottom). A different section of the floss is used in different areas of the mouth and similarly a new knot created and used if a second wide Type-1 embrasure exists, hence, an easy alternative to “tooth picking”.

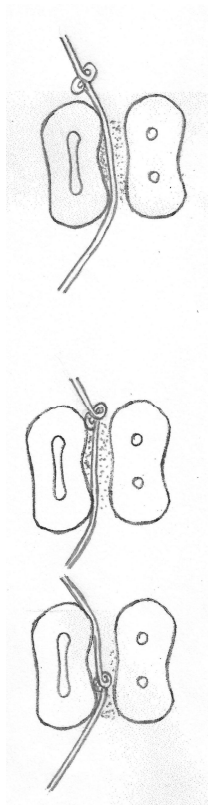


Figure 1. Schematic showing Floss with Knot Placed between Two Teeth (Top), Knotted Area Entering the Embrasure (Middle) and Exiting the Embrasure (Bottom)

The dental therapist should monitor the areas which have been prescribed for the knotted floss technique at regular frequency of 3-4 months, so that overzealous flossing may not cause dental abrasion, gingival grooving, or gingival col ablation. An over eagerness by the patient to remove the food lodged may result in such disadvantages, which may be evident with any other interdental cleansing aid used.

Further, longitudinal studies are recommended for documenting the usefulness, patient acceptability and disadvantages of this technique. A *knotted floss technique* can be a useful and effective aid in hygiene maintenance in wide Type-1 gingival embrasures.

Source of funding: None

The authors hold no financial interests with any company or source.

Conflict of Interest: None

References

1. Steffensen B, Sottosanti J. Treating plaque-associated gingivitis. In: Wilson TG, Kornman KS (Eds.). *Fundamentals of Periodontics*. 1st Edn. Chicago: *Quintessence Publishing Co Inc*, 1996: 319-47.
2. Frandsen A. Mechanical oral hygiene practices: State-of-the-science review. In: Loe H, Kleinman DV (Eds.). *Dental Plaque Control Measures and Oral Hygiene Practices*. 1st Edn. Oxford: *IRL Press*, 1986: 93-116.
3. Perry DA. Plaque control for the periodontal patient. In: Newman MG, Takei HH, Klokkevold PR et al. (Eds.). *Carranza's Clinical Periodontology*. 10th Edn. St Louis: *Saunders Elsevier*, 2006: 728-48.

Date of Submission: 18th Feb. 2016

Date of Acceptance: 12th Apr. 2016