



A Cross Sectional Study of the Positive Effects of Dental Flossing on Periodontal Tissues

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Abstract

Background and Introduction: Dental floss is used commonly in the dental practice to remove plaque (soft tenacious bacterial material deposited over the tooth surfaces), which, if not removed, might eventually lead to the development of gingivitis, gingival pockets and dental caries.

Dental floss as an adjunct in oral self care has seen a steady rise in usage over the years. Benefits of using a dental floss is well documented. However little has been written about the effect it sets on the soft tissue wall when pressed against the gingival tissues. In this cross sectional study we aimed to highlight the effect of using dental floss on the periodontal tissues.

Aim of the Study: To analyse the effect of dental floss on periodontal tissues.

Material and Method: A total number of 62 patients both male and female in the age range of 20 to 45 years visiting Riyadh elm university were handed a dental floss and advised to floss only mandibular first molar tooth on both right and left side thrice daily following meals. Bleeding index and gingival index were recorded at after 2 weeks. Bleeding on probing and periodontal depth was recorded on buccal, lingual, mesial and distal surface of the molar teeth on either side. Probing depth was measured to the nearest millimeter using a PCP-II periodontal probe. Results were statistically analysed.

Results: Significant improvement in periodontal health was noticed following 2 weeks of flossing.

Conclusion: We attribute improved bleeding tendency and improved periodontal status to the beneficial effects of correct use of a dental floss and are of the opinion that the worsening periodontal health in a small number of patients could be due to improper or overzealous use of dental floss resulting in food accumulation and subsequent inflammatory process in the flossed area.

Keywords: Dental Floss; Periodontal Health; Gingivitis; Periodontal Pocket; Gingival Bleeding

Introduction

Dental floss is used commonly in the dental practice to remove plaque (soft tenacious bacterial material deposited over the tooth surfaces), which, if not removed, might eventually lead to the development of gingivitis, gingival pockets and dental caries [1]. According to American dental association, 80% of the plaque is removed by the flossing method alone [2].

Dental floss as an adjunct in oral self care has seen a steady rise in usage over the years. Benefits of using a dental floss is well documented [3,4]. However little has been written about the effect it sets on the soft tissue wall when pressed against the gingival tissues. In this cross sectional study we aimed to highlight the effect of using dental floss on the periodontal tissues.

Aim of the study

To analyse the effect of dental floss on periodontal tissues.

Material and Method

A total number of 62 patients both male and female in the age range of 20 to 45 years visiting Riyadh elm university for routine dental check up were selected for the study. After taking detailed history, patients were handed a dental floss and trained to use it in a correct manner. Patients were advised to floss only mandibular first molar tooth on both right and left side thrice daily following meals. Any difficulties during flossing was recorded. Bleeding index and gingival index were recorded at an interval of every 2 weeks, for 3 months. Bleeding on probing and periodontal depth was recorded on buccal, lingual, mesial and distal surface of the molar teeth on either side. Patients were recalled after 2 weeks for examination of bleeding and pocket depth. Probing depth was measured to the nearest millimeter using a PCP-II periodontal probe. Results were statistically analyzed.

Results

	Mean	Standard Deviation
IBI_B	1.85	.58
IBI_L	1.82	.60
IBI_M	1.73	.63
IBI_D	1.85	.68
Twowk_BI_B	1.45	.53
Twowk_BI_L	1.52	.62
Twowk_BI_M	1.55	.67
Twowk_BI_D	1.55	.65

Table 1: Surface wise Initial and after two week Bleeding Index score.

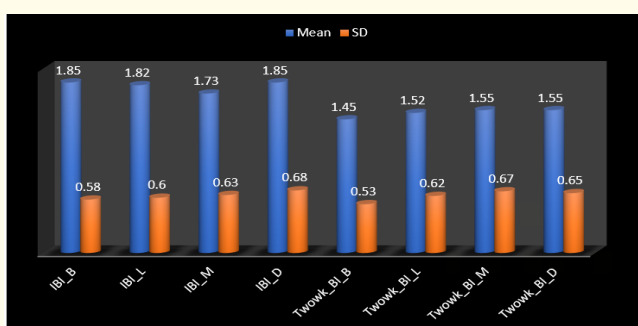


Figure 1: Initial and after two week Bleeding index score (surface).

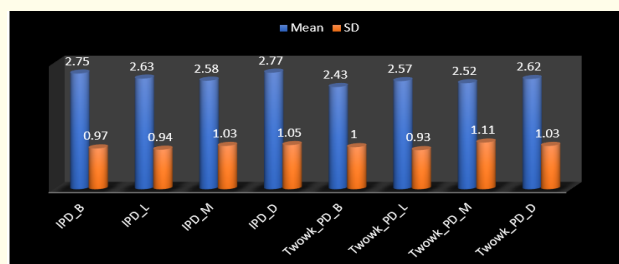


Figure 2: Initial and after two week Pocket depth (Surface).

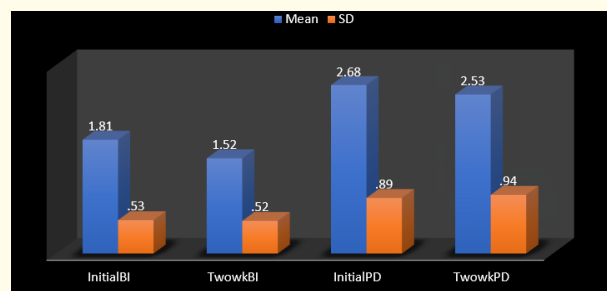


Figure 3: Initial and after two week BI and PD.

Data was analyzed using SPSS Pc+ 19.0 version statistical software. Paired t-test was used to compare the initial and after 2 week responses of categorical variables, among the study subjects. A p-value of <0.05 was used to report the statistical significance of the results.

		Mean	N	SD	SEM	T	Significance
Pair 1	InitialBI	1.8125	60	.53208	.06869	5.233	0.001
	TwowkBI	1.5167	60	.52048	.06719		
Pair 2	InitialPD	2.6833	60	.88522	.11428	3.429	0.001
	TwowkPD	2.5333	60	.93594	.12083		

Table 2: Paired Samples Statistics for initial and after two weeks BI and PD.

Analysis of bleeding index during the initial visit and follow up 2nd week visit of the patient

There is statistically significant difference of p = 0.001 in bleeding index during initial and 2nd follow up week following dental floss use and paired t-test value of 5.2 for initial visit and 3.3 for 2nd week. This shows that bleeding from gums is decreased following the use of floss.

Analysis of periodontal depth during the initial visit and follow up 2nd week visit of the patient

During 1st and 2nd week of dental flossing, the periodontal depth compared using t-test was 3.4 and 2.9 respectively and p value 0.001, which is statistically significant. That is, periodontal depth after 2 weeks use of dental floss was reduced.

Discussion

Daily removal of plaque is an important factor in maintaining periodontal health. As with the development of dental plaque, there is colonization of pathogenic micro organisms that release various endotoxins which contribute to inflammatory process in the gingiva.

In the present study, 24 patients out of the 64 included in the study had mild to moderate periodontitis with significant pocket depths measured prior to starting the study. Following the use of dental floss for 2 weeks, periodontal pocket depth of 17 patients showed improvement while pocket depths of 5 patients increased and 2 showed no changes. Among the otherwise healthy patients there was an overall significant improvement in the gingival health. We believe multiple factors are involved in these changes. Firstly, when used in a correct manner, a floss is extremely effective in removing the plaque which is otherwise inaccessible. However when used in an incorrect manner the fine threads of the floss can be traumatic to the gingival tissues as also the tendency for

overzealous use can initiate an inflammatory process which would have been otherwise absent, or make the matter worse in an already existing periodontal disease [5,6]. Numerous other methods have been tried by authors to improve the efficiency of flossing such as impregnation of chlorhexidine in dental floss which has shown evidence of reduction of supragingival film [7]. Another factor is the frequency of use. Since the patients use the floss at home at their convenience, one cannot be certain that the patients have followed the protocol suggested to them appropriately. However since there was an overall improvement of the gingival health of the flossed areas following 2 weeks it would be appropriate to infer that dental floss has indeed more of a beneficial effect on the periodontal tissues.

Conclusion

We attribute improved bleeding tendency and improved periodontal status to the beneficial effects of correct use of a dental floss and are of the opinion that the worsening periodontal health in a small number of patients could be due to improper or overzealous use of dental floss resulting in food accumulation and subsequent inflammatory process in the flossed area.

Bibliography

1. Darby ML. "Comprehensive review of dental hygiene". 5th ed., mosby co. st. louis (2002): 478-510.
2. Warren PR and Chater BV. "An overview of interdental cleaning methods". *Journal of Clinical Dentistry* 7.3 (1996): 65-69.
3. Gjermo P and Flötra L. "The effect of different methods of interdental cleaning". *Journal of Periodontal Research* 5 (1970): 230-236.
4. Mauriello SM., et al. "Effectiveness of three interproximal cleaning devices". *Clinical Preventive Dentistry* 9 (1987): 18-22.
5. Graves RC., et al. "Comparative effectiveness of flossing and brushing in reduction of interproximal bleeding". *Journal of Periodontology* 60 (1989): 243-247.
6. Husseini A., et al. "The efficacy of oral irrigation in addition to a toothbrush on plaque and the clinical parameters of periodontal inflammation: a systematic review". *International Journal of Dental Hygiene* 6.4 (2008): 304-314.
7. Muniz Fwmg., et al. "Efficacy of dental floss impregnated with chlorhexidine on reduction of supragingival biofilm". A randomized controlled study". *International Journal of Dental Hygiene (INT J DENT HYG)* 13.2 (2015): 117-124.

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