Effect of subgingival scaling during supportive therapy


Abstract
Background, aims: This prospective study was designed to investigate the rôle of root débridement at 3 month intervals for patients with periodontitis whose disease had persisted following the completion of conventional periodontal treatment.

Methods: 39 maintenance patients with at least 4 pockets at least 4 mm deep were assigned to coronal scaling (CS) and subgingival scaling (SS) groups. Probing depths (PD), bleeding on probing (BOP) and relative attachment levels (RAL) were recorded at all eligible sites at baseline and 3, 6, 9 and 12 months later. Plaque index scores were recorded at the 12-month visit. At every visit, following data collection, both groups received a coronal scaling and the SS group, in addition, received a thorough subgingival débridement. In the CS group, subgingival débridement was performed only for ‘loser’ sites which exhibited loss of attachment >2 mm relative to baseline values. Due to low compliance, only 31 patients completed the study. Thus, data analyses were carried out for 130 sites in 17 CS group patients and 146 sites in 14 SS group patients.

Results: During the course of the study, 21 loser sites were identified in each group, but the difference in proportion of loser sites between groups was not significant. Furthermore, although there was a trend toward PD reduction in both groups throughout the study, mean PD, RAL and BOP values were not significantly different from baseline values at any time point, and there were no significant differences between groups with respect to these variables. Mean plaque scores measured at the 12-month visit revealed no significant differences between groups.

Conclusion: These findings call into question the value of performing repeated subgingival scaling at 3-month intervals for patients with persistent disease.

Key words: supportive periodontal care; subgingival scaling; loss of attachment
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It is generally accepted that periodontal treatment should include an initial or hygienic phase comprising plaque control instruction, scaling and root planing, followed, if necessary, by a surgical phase and then by supportive therapy during which patients are recalled, generally at 3 to 4-month intervals: at these maintenance visits, scaling and root planing are carried out at recurrent diseased sites, procedures for which 30 min is usually allocated (Caffesse et al. 1995, American Academy of Periodontology position paper 1998).

Subgingival instrumentation of deep pockets is necessary during the hygienic phase to establish periodontal health (Cercek et al. 1983, Magnusson et al. 1984, Westfelt et al. 1998), but is of limited value unless supported by effective plaque control (Suomi et al. 1973, Magnusson et al. 1984, Sbordone et al. 1990, Westfelt et al. 1998).

Treatment failure is associated with the re-establishment of a pathogenic subgingival microflora (Magnusson et al. 1984), and may be attributed to inadequate débridement (Tabita et al. 1981, Lavanchy et al. 1987, Westfelt et al. 1998) or inadequate oral hygiene (Magnusson et al. 1984). In these circumstances, however, the process of microbial repopulation may continue for several weeks before baseline microbiological values are re-established (Sbordone et al. 1990, Magnusson et al. 1984, Greenwell and Bissada 1984, Lavanchy et al. 1987, Southard et al. 1989, Oosterwaal et al. 1987, van Winkelhoff et al. 1988, Slots et al. 1979). Thus, it might be anticipated that repeated subgingival débridement at 3-month intervals dur-
ing the maintenance phase would help to prevent periodontal deterioration in patients who complete the ‘active’ phase of treatment with persistent disease.

While scaling and root planing is of paramount importance in the treatment of periodontal disease, every time subgingival instrumentation is carried out, there is a risk of instrumentation trauma. Echeverria & Caffesse (1983) demonstrated that root planing within pockets initially ≤5 mm deep caused an immediate loss of attachment amounting to an average of 0.2 mm. Moreover, according to the experimental findings of Claffey et al. (1988), a single episode of root débridement at 1248 sites in 9 patients gave rise to an immediate loss of attachment of 0.5–0.6 mm on average, irrespective of baseline probing depths, followed in most cases by repair. However, when attachment levels were assessed after 12 months, 5% of sites were judged to have suffered permanent loss of attachment, and in half of these, this could be attributed to instrumentation trauma rather than progressive disease. Root planing, furthermore, involves irreversible removal of significant amounts of tooth substance (Gantes 1992) and, if repeated frequently, may eventually compromise or expose the pulp (Zappa et al. 1991). In patients with good oral hygiene, most of these ‘side-effects’ should be an acceptable price to pay for the resolution of inflammation which follows a single course of treatment. However, for patients whose response to treatment has been suboptimal, it has not been unequivocally demonstrated that the benefits of repeated root débridement at maintenance visits outweigh the possible associated morbidity.

The present study was designed to test the hypothesis that subgingival root débridement at 3-month intervals over a 12 month period can compensate for continuing inadequate oral hygiene in patients with pockets which have persisted following conventional periodontal treatment.

Materials and Methods

Patient recruitment and selection of study sites

Prior to commencement of the study, ethical approval was granted by the Greater Glasgow Area Dental Ethics Committee and informed consent was obtained from patients. Patients were selected from the pool of those who had completed conventional periodontal treatment and had commenced the maintenance stage of disease management at Glasgow Dental Hospital and School. At a screening visit, a full periodontal examination was carried out including the measurement of relative attachment levels with a Florida disc probe. Thereafter, full-mouth suprag- and subgingival débridement was carried out by an experienced clinician in 1 or 2 visits, and patients were given an appointment to return 3 months later (the baseline visit) when a final decision on their suitability was to be made. To be eligible to participate, these patients had to have a record of persistent bleeding an probing throughout their treatment and during their maintenance programme, and had to have, at the baseline visit, at least 4 pockets ≥4 mm deep. Patients with a history of systemic disease likely to influence periodontal health, and patients taking drugs likely to affect the periodontal tissues were excluded. Pregnant women and patients on antibiotics 3 months prior to the baseline visit were also excluded. 39 patients were recruited and stratified according to age, sex and smoking status (Gantes 1992) and, if repeated frequently, patients who complete the ‘active’ phase of treatment with persistent disease.

The present study was designed to test the hypothesis that subgingival root débridement at 3-month intervals over a 12 month period can compensate for continuing inadequate oral hygiene in patients with pockets which have persisted following conventional periodontal treatment.

Experimental protocol

At each visit, after the above measurements were made, oral hygiene instructions were given and supragingival scaling was carried out according to individual patient needs. Subgingival scaling was carried out for all SS group patients and for any site in the CS group which, at 3, 6, or 9 months, exhibited loss of attachment ≥2 mm relative to baseline values.

Subgingival débridement was carried out gently with due regard to the condition of the pocket: those pockets which bled on probing or contained obvious microbial deposit or other debris were cleaned most thoroughly. A var-
iety of hand instruments and, where appropriate, a Cavition scaler with a P-10 insert (Dentsply®) were used. Care was taken to clean the entire root surface using overlapping strokes but also avoiding, as far as possible, traumatizing the base of the pocket. Local anaesthesia was used only occasionally for isolated sites at the patient’s request and the work was undertaken in a washed aspirated field.

7 patients were withdrawn from the study at various time points, because they failed to attend at the prescribed intervals. One further patient could not tolerate repeated probing. Data were, therefore, analysed for the 31 patients who completed the study. These comprised 14 in the SS group (5 males, 9 females, average age=45.7 years, age range=37–64 years) and 17 in the CS group (9 males, 8 females, average age=46.1 years, age range=34–67 years). There were 5 smokers in each group.

Statistical analysis
Sites without a complete set of attachment level data (due to discomfort on probing) were excluded from all analyses. These comprised 10 sites from the SS group and 5 sites from the CS group.

The site values within each patient were averaged and a single figure was produced for each patient at each time point. A multivariate analysis of variance (MANOVA) was used to take into account the repeated measures design. The 2-sample t-test was used for group comparisons of baseline probing depth, change in probing depth, change in attachment level and the percentage of sites which bled or exuded pus on probing. This analysis was carried out in 2 different ways: by first of all excluding from the analysis any site in either group which demonstrated ≥2 mm loss of attachment; and then by including such sites using a ‘last observation carried forward (LOCF)’ approach for the sites in the CS group which were subjected to subgingival scaling for ethical reasons. These 2 analyses were performed to reveal any differences which may have resulted from the statistical methodology employed to account for withdrawn loser sites. A chi-square ($\chi^2$) analysis was performed to test for associations of sites which demonstrated attachment change ≥2 mm, and a Fisher-exact test was used where the numbers were small. All statistical procedures were performed using Minitab statistical soft ware (version 9.2) and SPSS (version 5.02).

Results
Initially, the SS group comprised 14 patients with 140 sites (mean and standard error of the mean: 10 ±1.03 sites per patient), while the CS group comprised 17 patients with 151 sites (8.88 ±0.83 sites per patient). There was no difference in the number of eligible sites per patient ($p=0.41$, 2-sample t-test). Therefore, the reservoir of periodontal infection was similar in both groups. By excluding all sites without a complete set of attachment level measurements, data analysis was based on 14 SS group patients (130 sites) and 17 CS group patients (146 sites). During the study, several sites demonstrated loss of attachment ≥2 mm at the 3-, 6-, 9- or 12-month time points. There were 21 such sites in the SS group and 21 such sites in the CS group (Table 1), but the difference between groups was not significant ($\chi^2=0.167$, $p>0.1$). The 21 ‘loser’ sites in the SS group and the 21 loser sites in the CS group were distributed among 9 and 12 patients respectively.

Gain of attachment ≥2 mm was also evident at some sites at the 3-, 6-, 9- or 12-month time points: at 13 sites in the SS group and at 14 sites in the CS group, and again the difference between groups was not significant ($\chi^2=0.013$, $p>0.9$).

Table 1 also shows the distribution of baseline probing depths in both groups and the proportion of such sites which subsequently suffered a loss of attachment ≥2 mm. Thus, in the SS group, 28.6% of those sites, initially ≥6 mm in depth, and 11.6% of those sites, initially 4.0–5.9 mm in depth, exhibited attachment loss at or above the 2 mm threshold level. Corresponding figures for the CS group were 20.5% and 11.8%. Although the risk of attachment loss in either group was greater if the baseline probing depth was ≥6 mm, the difference reached statistical significance only in the SS group ($\chi^2=5.45$, $p<0.05$). Similar comparisons were made for attachment gain ≥2 mm. This revealed that, in both groups, the chances of attachment gain were greater, although not significantly, in pockets 4.0–5.9 mm deep ($p=0.29$ for the CS group and $p=0.263$ for the SS group, Fisher-exact test).

Because the loser sites in the CS group were subjected to subgingival instrumentation as soon as the 2 mm threshold was reached, those which were identified before the 12-month visit (17 sites) were not included in the longitudinal analysis of attachment level changes illustrated in Table 2. In addition, to balance the groups, similar loser sites (20 sites) were removed from the SS group calculations. Thus, in Table 2, which does not include loser sites, minor and inconsistent mean...
changes in attachment level were observed in both groups relative to baseline values. Both groups ended the study with a slight gain of attachment, but attachment levels were not significantly different from baseline values at any time point. Furthermore, there were no significant differences between the groups with respect to attachment level change at any time point.

Table 3 illustrates a further analysis of attachment level changes, this time with the loser sites restored but, in the CS group, an LOCF adjustment was made. Once again, attachment levels in both groups were not significantly different from baseline and there were no significant differences between the groups at any time point. Because all the loser sites were included, this analysis demonstrated a minor net loss of attachment in both groups.

Table 4 illustrates the changes in probing depth at different time points with loser sites excluded from both groups, while Table 5 illustrates the probing depth data with loser sites included and the last observation carried forward for the CS group loser sites. Both sets of data reveal a progressive reduction in mean probing depth but these differences did not reach statistical significance with respect to baseline values. The SS group finished the study with a mean reduction in probing depth of 0.45±0.18 mm (Table 4) or, using LOCF, 0.37±0.15 mm (Table 5). The CS group finished the study with a mean reduction in probing depth of 0.65±0.14 mm (Table 4) or, using LOCF, 0.59±0.13 mm (Table 5), but there were no significant differences between the groups at any time point with either method of analysis.

Table 6 illustrates the mean proportion of sites which bled an probing in both groups at all time points with loser sites excluded from both groups, while Table 7 illustrates the bleeding data with loser sites included and the last observation carried forward for the CS group loser sites. These mean bleeding scores ranged from 0.42 to 0.58 (Table 6) and from 0.43 to 0.6 (Table 7). However, there were no significant differences in bleeding on probing between the groups at any time point.

Plaque index scores were recorded only at the 12-month visit for all sites including the loser sites. Mean plaque scores in the SS and CS groups were 0.58 (±0.1) and 0.53 (±0.13) respectively with no significant difference between the groups (p=0.78). There was great individual variation. Three patients had no discernible plaque at their study sites at this last visit while one patient had a mean plaque score of 2.

### Discussion

Prior to entering the study, all patients had attended on numerous occasions and had been provided with a course of

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**Table 3.** Change in attachment levels (AL) in the coronal scaling and subgingival scaling groups at different follow-up time points; mean and SEM are shown in mm; all sites are included with the last observation carried forward for the CS group loser sites

<table>
<thead>
<tr>
<th>Groups</th>
<th>Baseline mean PD</th>
<th>AL change at 3-months</th>
<th>AL change at 6-months</th>
<th>AL change at 9-months</th>
<th>AL change at 12-months</th>
</tr>
</thead>
<tbody>
<tr>
<td>coronal scaling</td>
<td>5.57±0.15</td>
<td>-0.05±0.08</td>
<td>-0.27±0.10</td>
<td>-0.38±0.12</td>
<td>-0.13±0.19</td>
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<td>(n=17)</td>
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<tr>
<td>subgingival scaling</td>
<td>5.53±0.14</td>
<td>-0.15±0.07</td>
<td>-0.30±0.09</td>
<td>-0.30±0.10</td>
<td>-0.04±0.18</td>
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<td>(n=14)</td>
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**2-sample t-test**

<table>
<thead>
<tr>
<th></th>
<th>MANOVA p-value=0.620, Pillai's value=0.093</th>
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<tbody>
<tr>
<td></td>
<td>p=0.84 p=0.33 p=0.85 p=0.62 p=0.74</td>
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</table>

**Table 4.** Decrease in probing pocket depth (PD) in the coronal scaling and subgingival scaling groups at different follow-up time points; mean and SEM are shown in mm; loser sites excluded

<table>
<thead>
<tr>
<th>Groups</th>
<th>Baseline mean PD</th>
<th>Decrease in PD at 3-months</th>
<th>Decrease in PD at 6-months</th>
<th>Decrease in PD at 9-months</th>
<th>Decrease in PD at 12-months</th>
</tr>
</thead>
<tbody>
<tr>
<td>coronal scaling</td>
<td>5.51±0.15</td>
<td>0.44±0.16</td>
<td>0.49±0.13</td>
<td>0.54±0.14</td>
<td>0.65±0.14</td>
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<tr>
<td>(n=17)</td>
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<tr>
<td>subgingival scaling</td>
<td>5.45±0.14</td>
<td>0.21±0.15</td>
<td>0.23±0.17</td>
<td>0.36±0.19</td>
<td>0.45±0.18</td>
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<td>(n=14)</td>
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**MANOVA p-value=0.801, Pillai's value=0.059**

<table>
<thead>
<tr>
<th></th>
<th>p=0.76 p=0.30 p=0.22 p=0.43 p=0.38</th>
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</thead>
</table>

**Table 5.** Decrease in probing pocket depth (PD) in the coronal scaling and subgingival scaling groups at different follow-up time points; mean and SEM are shown in mm; all sites are included with the last observation carried forward for the CS group loser sites

<table>
<thead>
<tr>
<th>Groups</th>
<th>Baseline mean PD</th>
<th>Decrease in PD at 3-months</th>
<th>Decrease in PD at 6-months</th>
<th>Decrease in PD at 9-months</th>
<th>Decrease in PD at 12-months</th>
</tr>
</thead>
<tbody>
<tr>
<td>coronal scaling</td>
<td>5.57±0.15</td>
<td>0.42±0.16</td>
<td>0.45±0.11</td>
<td>0.50±0.14</td>
<td>0.59±0.13</td>
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<tr>
<td>(n=17)</td>
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<tr>
<td>subgingival scaling</td>
<td>5.53±0.14</td>
<td>0.20±0.15</td>
<td>0.19±0.16</td>
<td>0.26±0.16</td>
<td>0.37±0.15</td>
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<td>(n=14)</td>
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**MANOVA p-value=0.779, Pillai's value=0.063**

<table>
<thead>
<tr>
<th></th>
<th>p=0.84 p=0.32 p=0.20 p=0.27 p=0.27</th>
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</thead>
</table>

**Table 6.** Bleeding on probing (BOP) in the coronal scaling and subgingival scaling groups at different follow-up time points; mean % and SEM are shown; loser sites excluded

<table>
<thead>
<tr>
<th>Groups</th>
<th>% BOP at baseline</th>
<th>% BOP at 3-months</th>
<th>% BOP at 6-months</th>
<th>% BOP at 9-months</th>
<th>% BOP at 12-months</th>
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</thead>
<tbody>
<tr>
<td>coronal scaling</td>
<td>44±8</td>
<td>42±0.07</td>
<td>50±0.04</td>
<td>54±6</td>
<td>57±7</td>
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<td>(n=17)</td>
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<tr>
<td>subgingival scaling</td>
<td>49±6</td>
<td>50±0.06</td>
<td>48±0.04</td>
<td>58±5</td>
<td>0.54±7</td>
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<td>(n=14)</td>
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**2-sample t-test**

<table>
<thead>
<tr>
<th></th>
<th>p=0.60 p=0.40 p=0.73 p=0.59 p=0.73</th>
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</thead>
</table>

**Table 7.** Changes in bleeding on probing (BOP) included with the last observation carried forward for the SS group loser sites

<table>
<thead>
<tr>
<th>Groups</th>
<th>% BOP at baseline</th>
<th>% BOP at 3-months</th>
<th>% BOP at 6-months</th>
<th>% BOP at 9-months</th>
<th>% BOP at 12-months</th>
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<tbody>
<tr>
<td>coronal scaling</td>
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<td>(n=17)</td>
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<tr>
<td>subgingival scaling</td>
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<td>(n=14)</td>
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**2-sample t-test**

<table>
<thead>
<tr>
<th></th>
<th>p=0.58 p=0.50 p=0.73 p=0.73 p=0.73</th>
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</table>
periodontal treatment which included plaque control instruction, scaling and root planing, and some patients had also been subjected to periodontal surgery. What the patients had in common was a disappointing response to this treatment with persistent bleeding on probing and persistent or recurrent deep pockets. These patients could not, however, be described truly as refractory cases because their plaque control was not consistently adequate during their treatment and maintenance programmes.

Continuing care of these patients is problematical. A traditional 3-monthly maintenance visit incorporates reassessment, oral hygiene reinstruction and subgingival instrumentation of diseased sites. However, when there are many deep pockets, thorough instrumentation may not be achievable within the allotted time. There is, furthermore, a theoretical risk that, if the same pockets are instrumented, say, every 3 months, the benefits of disturbing the subgingival flora may be out-weighed by the accumulated traumatic effects of these procedures.

Scrutiny of the literature reveals few studies which address this problem. Morrison et al. (1979) showed that the rate of attachment loss in beagle dogs with naturally occurring periodontal disease could be reduced if scaling and root planing was carried out at 3-month intervals, thus suggesting that subgingival instrumentation could, to some extent, compensate for lack of daily plaque control. Ramfjord et al. (1982) showed that, following an 8-year programme of supra- and sub-gingival scaling at 3-month intervals, the periodontal status of maintenance patients with initially poor oral hygiene was comparable to those with good oral hygiene. However, oral hygiene was assessed only at the one-year observation interval and not subsequently reassessed, and the statistical analysis failed to take account of site level variations in plaque control and attachment loss.

Lindhe et al. (1984) analysed the results of a 5-year treatment and maintenance study, in the last 3 years of which the only treatment provided comprised coronal scaling and oral hygiene reinforcement. Patients entered the study with advanced periodontal disease and, after 5 years, the annual incidence of attachment loss ≥2 mm at sites with initial probing depth ≥4 mm was 1.2% or 3.4% depending on the initial treatment modality. However, when the patients were divided into 2 groups based on their prevailing plaque levels during the study, the incidence of attachment loss was 3 times greater in those with consistently poor oral hygiene. While this study of 11 subjects reinforces the relationship of plaque control to the final periodontal treatment outcome, the data do not necessarily support the withdrawal of subgingival scaling during an extended maintenance period except, perhaps, in patients whose plaque control is good enough to prevent subgingival reinfection.

In a later study, Westfelt et al. (1998) followed 12 patients with advanced periodontal disease, for 3 years. 2 quadrants in each patient initially received thorough subgingival instrumentation and coronal scaling, while the other 2 quadrants received only coronal scaling. All patients continued to attend at 3-month intervals during which plaque control instruction and coronal scaling were carried out. The annual incidence of attachment loss ≥2 mm relative to baseline values at sites with probing depths initially 4–6 mm was 4.3% in the coronal scaling group and 1.3% in the subgingival group. For pockets ≥6 mm, the annual incidence in the coronal scaling group was 11% and in the subgingival group was 0.9%. Low plaque scores were maintained for the duration of the study. This study demonstrates that following an initial course of thorough subgingival débridement, the incidence of periodontal breakdown can be maintained at low levels with a programme of 3-monthly coronal scaling and oral hygiene instruction, and that without an initial course of subgingival instrumentation, such a maintenance programme will not prevent significant periodontal breakdown from taking place.

The present study differs from those described above in the following respects: the sites selected for observation were those which had failed to respond adequately to periodontal therapy; unsatisfactory plaque scores were considered to be one reason, if not the main reason for the initially poor treatment response; all the sites had been thoroughly instrumented during initial therapy and were reinstrumented 3 months before baseline; and, the purpose of the study was to observe the effect of withdrawing subgingival instrumentation from a 3-monthly maintenance programme.

In fact, there was no statistically significant difference between the 2 groups at any time point in terms of attachment loss, probing depths, bleeding on probing or plaque scores, suggesting that subgingival instrumentation at 3-month intervals for this group of patients made no difference to the outcome one year later. There were 21 loser sites in each group representing 16.2% of SS group sites and 14.4% of CS group sites, rather higher than the % values reported by Lindhe et al. (1984) and Westfelt et al. (1998), but probably a reflection of their baseline status as non-responding sites and the unsatisfactory level of plaque control.

The proportions of loser sites are closer to that reported in an earlier study within our department, in which 11 maintenance patients were monitored for 1 year at 2-month intervals without treatment other than coronal scaling, and a 10% incidence of attachment loss was observed at sites with probing depths ≥4 mm (Jenkins et al. 1988).

In common with other longitudinal studies (Haffajee et al. 1991, Grbic and Lamster 1992, Westfelt et al. 1998), loss of attachment occurred more frequently at probing depths initially 4–6 mm than at probing depths initially 4.0–5.9 mm. The frequencies of breakdown at these sites were 20.5%–28.6% and 11.6%–11.8% respectively.

An interesting observation was the reduction in mean probing depths, clin-

Table 7. Bleeding on probing (BOP) in the coronal scaling and subgingival scaling groups at different follow-up time points; mean % and SEM are shown; all sites are included with the last observation carried forward for the CS group loser sites

<table>
<thead>
<tr>
<th>Groups</th>
<th>% BOP at baseline</th>
<th>% BOP at 3-months</th>
<th>% BOP at 6-months</th>
<th>% BOP at 9-months</th>
<th>% BOP at 12-months</th>
</tr>
</thead>
<tbody>
<tr>
<td>coronal scaling</td>
<td>47±7</td>
<td>43±6</td>
<td>52±5</td>
<td>55±6</td>
<td>58±6</td>
</tr>
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<td>(n=17)</td>
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<tr>
<td>subgingival scaling</td>
<td>48±0.06</td>
<td>54±0.05</td>
<td>49±0.04</td>
<td>60±6</td>
<td>56±6</td>
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<tr>
<td>(n=14)</td>
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<tr>
<td>2-sample t-test</td>
<td>p=0.92</td>
<td>p=0.18</td>
<td>p=0.62</td>
<td>p=0.56</td>
<td>p=0.91</td>
</tr>
</tbody>
</table>
Subgingival scaling and supportive care

The method of attachment level determination in this study was suboptimal. Duplicate RAL measurements would have been preferable at all sites, but were contraindicated due to the discomfort experienced by patients during Florida probing: by the time relative attachment level measurements were recorded with the Florida disc probe, replicate probing depth measurements had already been made. Thus, baseline relative attachment levels were based on a single measurement unless it differed by 1 mm or more from the pre-baseline value, in which case a repeat measurement(s) was made. Likewise, at later time points, repeat RAL measurements were made only if the first recording differed by more 1 mm from the baseline visit recording.

While the study failed to show that repeated subgingival scaling of persistently diseased sites can help to prevent periodontal breakdown during a 1-year maintenance programme, it is conceivable that the coronal scaling and plaque control instruction which each patient received, by creating a subjective impression of oral cleanliness, motivated the patients to maintain or improve for a short while their home care. There is some evidence that, in pockets of moderate depth, the composition and pathogenicity of the subgingival flora can be influenced by supragingival plaque control (Dahlén et al. 1992, McNabb et al. 1992, Sato et al. 1993, Hellström et al. 1996, Rosling et al. 1997). Therefore, these findings should not be interpreted as a failure of maintenance care, but they merely call into question the value of repeated subgingival scaling at 3-month intervals and, in view of its potential for harmful pulpal and periodontal effects, further evaluation of its rôle and frequency appears to be warranted.

References


Grbic, J. T. & Lamster, I. B. (1992) Risk indicators for future clinical attachment loss in adult periodontitis. Tooth and site vari-

ically but not statistically significant, which occurred in both groups. Since this occurred in the absence of attachment gain, it must be attributed to gingival recession, perhaps reflecting a Hawthorn effect, whereby the trial participants improved their toothbrushing practices beyond what they had achieved during their earlier treatment.

Subgingival scaling and supportive care

Rationale and frequency appears to be warranted.

References


Grbic, J. T. & Lamster, I. B. (1992) Risk indicators for future clinical attachment loss in adult periodontitis. Tooth and site vari-


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