Results: At baseline, the mean PD was 8.04 ± 2.31 mm in test group and 8.34 ± 2.73 mm in the control group. There was no statistical significant difference between them. The root surface area was similar between the two treatment groups (control: 60.13 ± 25.09 mm2, test: 55.86 ± 24.22 mm2, p = 0.197). After treatment the total area covered by plaque and calculus was statistically significantly larger (p= 0.0001) in the control group than in test group. In the control group it amounted to 15.96 ± 13.64 mm2 for plaque and 10.90 ± 7.69 mm2 for calculus, while in the test group it was 5.17 ± 6.69 mm2 and 5.17 ± 8.72 mm2, respectively. In terms of percentage of root surface with soft/hard deposits, the experimental teeth yielded significantly smaller area covered by plaque (p = 0.0001) and by both plaque and calculus (control: 40.99 ± 23.31%; test: 19.53 ± 18.51%) than control teeth.
Conclusion: Within the limitations of this study the additional chemical cleansing with HBX seems to facilitate the removal of biofilm from the root surface in combination with conventional manual and ultrasonic instrumentation.

Alveolar socket preservation: punch technique vs spontaneous healing. A randomized clinical trial

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Aim: Extraction socket management has acquired over the years even more strategic importance within the periodontal treatment plan. Several surgical techniques have been described to approach the alveolar socket immediately after tooth extraction. The aim of this randomized, controlled clinical trial is to determine whether ridge preservation using epithelial-connective tissue graft would counteract the vertical and horizontal ridge resorption compared to spontaneous healing.
Methods: Patients, requiring single tooth extraction, have been consecutively included. According to a randomization list, patients have been selected to receive either ridge preservation via punch technique (test) or extraction alone (control). Briefly, after atraumatic tooth extraction have been carried out and the inner part of the free marginal gingiva was de-epitheliazed, an epithelial-connective tissue punch was harvested from the palate and closely adapted with 5-0 resorbable single stitches to the socket entrance. Control sockets were left heal spontaneously. Before the experimental procedures were performed, one independent and calibrated examiner assessed the following clinical variables: horizontal socket width, gingival thickness, gingival phenotype (de Rouck 2014), buccal plate thickness, keratinized tissue width (GK), alveolar crest height (from the incisal/occlusal margin). Standardized bi-dimensional x-rays were taken and ridge alterations were measured with a linear distance from the adjacent occlusal plane. Clinical and radiographic measurements have been repeated at baseline and after 6 and 12 months. Analogic (irreversible hydrocolloid) and digital (GC Europe, AAdva IOS) impressions were immediately taken after tooth extraction (baseline) and volumetric changes evaluated at 6 and 12 months. Patient centered outcomes were recorded by questionnaires at baseline and 7 and 30 days post-operatevely. Descriptive statistics was performed. All variables were described with mean and standard deviation. Differences between test and control groups at time points were analyzed by Kruskal-Wallis and post-hoc Dunn's test ($p<0.05$).
Results: 9 patients were eligible to be enrolled in the study so far, 7 of them have been included. All sockets healed uneventfully. After 6 months healing, socket diameter, GK and gingival thickness reduced statistically from baseline. No statistical significant differences were detected between group at any time points; nevertheless a tendency toward a smaller reduction was observed in the test group. According to PCO's variable no differences were recorded between the two procedures.
Conclusion: Epithelial connective tissue punch technique for alveolar socket preservation can be considered a feasible procedure in case of single tooth extraction. No statistical significant difference were observed according to horizontal socket dimension changes between test and control groups after 6 months healing. Patient centered outcome also doesn't seem to highlight differences between the two groups. The reduced sample size of the current ongoing study influences the data analysis, leaving much more strongest speculation to a further and future analysis.

The comparison of the proteomic profile of periodontal pocket and of corresponding gingival crevicular fluid to study periodontal disease biomarkers: feasibility study. biomarkers: feasibility study

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Aim: Periodontitis is a set of inflammatory disorders characterized by periodontal attachment loss by periodontal pocket development, leading to tooth loss if remain untreated. The etiology and progress of periodontal disease is complex and remains mostly unknown. So, periodontal disease therapy has considerable limitations. The easy, reliable and correct early detection and control of the disease, markedly reduces biological and social costs. However, the diagnosis of periodontitis is established exclusively by clinical criteria based on probing to assess periodontal pockets, which are the pathognomonic expression of periodontal disease. The -omic sciences acquired substantial significance of late years and, in particular, proteomic seemed to be the more promising in this initial stage. Most proteomic analysis regarding periodontal diseases have been performed on saliva, crevicular fluid samples, peripheral blood or periodontal plaque samples which are more easily to harvest than the tissue of the periodontal pocket. However, they failed to provide reliable results for clinical applications. On the contrary, very few studies were directly performed on the periodontal pocket.
So, the aim of this study was to compare the proteomic profile of interproximal pocket tissues with that of GCF, and to analyze if they show a significant similarity in the proteomic profile.
Methods: in this preliminary study, we enrolled 3 healthy subjects affected by severe periodontitis needing of periodontal surgery. Immediately before the surgery, GCF samples were taken by means of filter paper strips positioned in the gingival sulcus correspondent to periodontal pockets. Then, periodontal pocket tissue, harvested during surgery, was adequately stored for proteomic analyses. All samples were immediately frozen at –80°C and maintained until further analysis. Tissue samples were mechanically disrupted and incubated in lysis buffer, while GCF was obtained incubating the collecting paper in phosphate buffered. In both cases, after centrifugation, the supernatant was precipitated in cold acetone overnight and protein content were pelleted by centrifugation and then dissolved in a rehydration buffer. Mono-dimensional gel electrophoresis was used to separate protein content. After staining gel images were acquired and compared. Liquid chromatography coupled to mass spectrometry (LC-MS/MS) analysis was performed to allow protein spot identification.
Results: 1-DE gels from periodontal pocket tissue and the correspondent GCF was analyzed by software Quantity One. Almost the same qualitative protein expression profile in pocket tissue and GCF was found from each patient. However, no statistical significant correlation between the quantitative proteomic profile of pocket tissue and GCF was found. Only one band (that of K immunoglobulin) resulted statistically significant between GCF and pocket tissue proteome in all patients.
Conclusion: To date, this is the first study comparing the proteome of periodontal pocket tissue and corresponding GCF. The periodontal pocket and the GCF are similar as proteomic networks, but the protein network of the periodontal pocket does not influence significantly the GCF protein network and the other way around. So, with the limitations of this study, the preliminary results seem to indicate that the GCF does not seem suitable to study on the pathogenesis of periodontal disease explaining the reason for the failure of studies based only on GCF to control the periodontal disease in real-time.

Systemic inflammation after periodontal surgery with the adjunctive use of enamel matrix derivative

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Aim: The aim of this study was to compare the acute-phase responses after surgical treatment with and without the adjunct of enamel matrix derivative (EMD).
Methods: Thirty-eight periodontitis-affected subjects were randomized to test (surgical periodontal treatment + EMD) and control group (surgical treatment only). Periodontal parameters were recorded at baseline and 6-months. Serum samples were collected at baseline, 1, 7 and 180 days after treatment.
Results: Both treatment modalities resulted in an increase of inflammatory biomarkers at 24-hr. CRP values were higher in the control group at day 1 ($P=0.004$). Also the fibrinogen was higher for control group at day 1, when compared to its baseline values ($p<0.05$ vs. baseline). Better periodontal healing was observed for test group, the clinical attachment level gain was 4.26 ± 2.182mm compared to 3.26 ± 2.207 mm of the control group.
Conclusion: The adjunction of EMD for surgical periodontal treatment was associated with lower increase of CRP and fibrinogen in test group after 24-hr. These results suggest a possible systemic anti-inflammatory effect of EMD. The use of EMD can be