pre-surgical evaluation of mandibular third molars, oral surgeon must consider that the inclination of the third molar is biased by a not avoidable distortion, and that this distortion can give rise to a wrong assessment of the degree of difficulty of the surgery.

Histological analysis of bone healing following alveolar preservation technique by deproteinised bovine bone covered by a xenogenic collagen matrix

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Introduction: The aim of the present study was to histologically evaluate the new bone formation and the dimensional changes in tissues following two different healing protocols (16 weeks and 32 weeks) using deproteinized bovine bone mineral (DBBM) covered with a collagen matrix (CM) for alveolar ridge preservation in the aesthetic area frontal before implant placement.
Materials and methods: Sixteen patients (mean age 48.2 years), requiring the extraction of a single mono-radiculated tooth in the frontal area were recruited for the study. The surgical protocol was performed with great care to preserve the buccal plate and surrounding soft tissues. Each selected tooth was extracted using a minimally invasive technique. Subsequently, in each patient, the alveolus was filled with DBBM with 10% collagen (Bio-Oss® Collagen; Geistlich Pharma AG, Switzerland). A xenogenic reabsorbable CM (Mucograft®, Geistlich Pharma AG, Switzerland) was subsequently adapted to marginal soft tissues and positioned to cover the DBBM in order to promote primary tissue healing. A resorbable suture was placed on the wound to stabilize the CM and to allow a flap closure without tension. Following the tooth extraction, the vertical distance from the center of the buccal and palatal/lingual alveolar crest (AC) and the cemento-enamel junction (CEJ) of the adjacent teeth that was recorded using a periodontal probe. The buccal-palatal/lingual alveolar width and thickness was measured at the center of both buccal and lingual walls using a caliper. After the surgical procedure was completed, each patient was randomized for evaluation of short-term (16 weeks) or long-term (32 weeks) healing group protocol for subsequent implant placement. Moreover, after the elevation of the flap, a biopsy was obtained useful for histological analysis; therefore, a 4.0 mm diameter implant was placed into the surgical site. A Student t-test was performed for the analysis of dimensional ridge changes and in changes of the histological parameters between the two groups. A value of $p<0.05$ was set as statistically significant.
Results: Regarding the dimensional alveolar ridge variations, no significant difference were found, between groups, in the thickness of the buccal plate (short term 1.09 ± 0.26 mm vs long term 1.15 ± 0 , 31 mm) and in the CEJ-AC buccal distance change (short term 2.38 ± 0.22 mm vs long term 2.49 ± 0.26 mm) and in the palatal/lingual CEJ-AC distance (short term 2, 41 ± 0.31 mm vs long term 2.37 ± 0.24 mm), respectively. Furthermore, there was no significant difference between groups in the buccolingual alveolar thickness ($P = 0.12$). However, the 32-week protocol resulted in a better new bone formation and fewer tissue dimensional changes ($P = 0.01$) compared to the 16-week protocol. The 16-week group presented a vital bone percentage of 35.58% compared to 47.76% of the 32-week group. Regarding the percentage of residual graft, there was no significant difference between groups (short-term= 34.23%, long-term= 25.43%).
Conclusions: This study indicates that there was significantly greater new vital bone formation by a xenograft protocol for the alveolar socket preservation with DBBM plus CM at 32 weeks compared to 16 weeks before dental implant placement.

Conservative surgical treatment of medication-related osteonecrosis of the jaws with Leukocyte-Platelet Rich Fibrin: preliminary results at nine months

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Background: The optimal treatment of Medication related osteonecrosis of the jaw (MRONJ) remains controversial; leading goals of the surgical treatments are to control the infection and the pain and to slow the progression of the disease and, when it is achievable, to remove all the necrotic bone promoting the complete tissues healing. In the latest years, conservative surgical treatments of MRONJ have been proposed and applied also in advanced stage of the disease. Recently, autologous platelet concentrates, such as Leukocyte-Platelet Rich Fibrin (L-PRF), are increasingly applied as a new approach to regenerate tissues in oral surgery as they release high quantities of growth factors, promoting angiogenesis and bone

and mucosal healing, improving the post-surgical wound healing. These properties of L-PRF appear particularly useful in MRONJ surgical therapy, as the lack of vascularization represents one of the major factors on pathogenesis of MRONJ. The aim of this study was to evaluate efficacy and safety of L-PRF in conservative surgical approaches of ONJ in osteometabolic patients.
Methods: Two osteometabolic women were referred to our Sector of Oral Medicine (AUOP "P. Giaccone" of Palermo) for facial swelling; severe pain and lip paresthesia. Both patients were already treated with drugs related to MRONJ; subsequently, a computed tomography scan (CT) was requested to confirm the suspect of MRONJ. Applying the PROMaF protocol (http://www.policlinico.pa.it/portal/index.php?option=displaypage&Itemid=264&top=page&SubMenu=), pre- and post-operative antibiotic systemic treatment was given (ampicillin/sulbactam im and metronidazole per os) as well as the use of chlorexidine mouthwashes and sodium-hyaluronate gel topically. The surgical PROMaF protocol expected: 1) anesthesia without adrenaline; 2) full-thickness mucoperiosteal flap (when needed); 3) curettage of the necrotic bone, by mean of a piezo-surgery device; 4) irrigation with rifamycin sodium; 5) L-PRF application; 6) tension-free suture. Post-operative instructions were given. Follow-up visits were scheduled 10 days after to remove the suture, then at 1,3,6 and 9 months.
Results: Two ostemetabolic patients were 64 and 59 years old respectively. One patient was treated with alendronic acid and was diabetic; the second one was treated with ibandronic acid. The mean cumulative dose of BPs therapy was 15075± 4425mg. The intraoral examinations showed a suppurating mucosal fistula in the left side of the mandible in both patients, associated with swelling, lip paresthesia and pain. The CT scan showed sequestration of necrotic bone and involvement of the inferior alveolar nerve; both lesions were classified as Stage III (SICMF-SIPMO staging system). Ten days after the surgery, the wound showed a central depression covered by granulation tissues; still, the complete mucosal healing was achieved before the next control in both patients. Nine months after surgery, at the last follow-up visit, there were no clinical signs related to ONJ and a slow recovery of nerve function.
Conclusions: The combination of conservative surgical procedures and L-PRF application in MRONJ treatments in osteometabolic patients could offer a practical and useful protocol, avoiding more complex procedures for the clinicians and demanding surgery for the patients. Although with the great limitation of this report, these preliminary results suggest that L-PRF can act as local regulators of wound healing, improving mucosal healing and reducing the surgical time during bone sequestrectomy. More prospective studies are needed to confirm this statement with a larger patients' sample.

Dental autotransplantation for the replacement of lost teeth

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Introduction: The replacement of an irremediably compromised tooth requires an implant rehabilitation or a traditional fixed partial denture. In well-selected cases, a further therapeutic possibility is represented by tooth autotransplantation. Although dental transplants are poorly understood and practiced, the international literature agrees that it is considered the first choice therapy when applicable. The main indication is represented by the cases in which a "sacrificable" donor tooth is available and is compatible with the receiving site. For sacrificable we mean an element whose extraction does not determine a significant biological cost. The advantages of the technique are numerous: use of an autologous element, maintenance of tissue trophism, aesthetic and functional restoration, cost reduction.
Purpose: The aim of the present work was to rertrospectively analyze 20 cases performed from 2003 to 2008 in 19 patients to evaluate their survival rate and success rate with an average follow-up of 10 years. Elements that have not been extracted after transplantation are considered survivors. The elements, even survivors, that have developed any problem in the root have been considered among the failures; the total of the surviving elements that have not developed root pathologies determines the success rate.
Materials and methods: All the re-evaluated patients received a transplant using a third molar as a donor tooth repositioning it in place of a first or a second compromised molar. The donor teeth were impacted or without antagonist; for these reasons they were perfect candidates because their extraction had a reduced biological cost. The procedure was highly recorded according to the dictates of the literature and provided for: avulsion of the lost tooth, avulsion of the donor tooth, adaptation of the receiving alveolus and flexible splinting for 2 weeks. After 15 days the endodontic treatment of the transplanted tooth and the composite restotation of the access cavity were performed.nNo teeth received a prosthetic restorations.
Results: The 19 patients were aged between 25 and 47 years, with an average of 37 years. The cases have a