Oral surgery

Case report: sinus lift vs tilted implants in HIV-infected patients under HAART

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Aim: Evidence suggest that well-controlled HIV-infected patients are possible candidates to receive dental implants. However, literature regarding dental implant therapy in HIV-infected patients is still scarce and mostly based on case reports and pilot studies. Even more limited is literature regarding patients complex surgical procedures, like GBR or sinus lift, in HIV-infected. We present two clinical cases of different rehabilitation of two important posterior maxilla atrophy in HIV-infected immunologically stable.
Methods: The first case shows a middle-aged patient, under HAART, presented to the Department of Dentistry and Dental Prosthetics of the University Vita-Salute San Raffaele with a large defect in the posterior maxilla, as a consequence of pneumatized sinus as shown by CBCT. The only way to allow implant placement was sinus lift. A simultaneous approach was planned and implants were placed at the same time of sinus floor elevation. Deproteinized bovine bone matrix (Bio-Oss®, Geistlich) was used to augment the sinus and a collagen membrane (Bio-Gide®, Geistlich) placed over the lateral window used to access the sinus membrane. Two implants in site 14 and 16 were placed and stabilized in the residual alveolar crest achieving low primary stability. Therefore, a longer healing period was necessary and patient waited 9 months to re-entry. The second case reported is a male patient, 55 years old, under HAART, presented to the Department of Dentistry and Dental Prosthetics of the University Vita-Salute San Raffaele willing to replace teeth 24, 25, 26, which have been extracted more than 2 years ago. Because of the poor bone volume as shown bypanoramic x-ray, applying tilted implant in position 24 allowed implant placements without sinus lifting. This also reduced the treatment time, surgical procedures, and biological cost. Antibiotic coverage was used in both cases.
Results: Various studies are available regarding success rate of angulated implant placement at various time intervals. There are no differences in clinical performance between implants that are placed in an axial position when compared with implants that are intentionally tilted toward the distal aspect of edentulous jaws. The use of tilted implants promotes greater comfort for the patient rather than sinus lift. Moreover the insertion of fixture in the basal bone gives better outcomes and it provides better results than the insertion of bone grafts, as confirmed by the literature. Several types of complications may occur during and after the sinus elevation procedure. Although most short-term studies report similar results for HIV-infected and healthy patients when it comes to implant survival rates, evidence suggest that HIV-infected patients present higher risk of post surgical complications.
Conclusion: Considering all these things, when it is possible, placement of an angulated implant avoiding both invasive procedures like sinus lift and bone augmentation procedure should be the first choice of treatment, in particular for special needs patients.

Use of PRF to promote the healing of post-extraction sites in a patient undergoing bisphosphonate: a case report

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The swelling relapsed in about 7 days, Ultrasound scan was able to exclude a plunging ranula beyond the mylohyoid muscle and surgical marsupialization was scheduled. Healing was uneventful and the patient is free of disease (last follow-up visit performed 1 year after marsupialization).
Discussion: The present case show effectiveness and safety of marsupialization in an iatrogenic ranula. According to the literature, large ranulas are usually associated with damaged sublingual gland with a recurrence rate exceeding 50% for treatments not including the sublingual gland removal. Nevertheless, the not negligible risk of damage to adjacent structures justify at first the choose of less invasive therapeutic options. Marsupialization and micro-marsupialization represent a first-line option frequently chosen aiming to avoid invasive surgery. Such techniques imply interventions characterized by reduced surgical time and fast healing.
Conclusion: Even facing potential failure rates reported in the literature, in the presence of large ranulas marsupialization represents a reasonable first-line approach when considering a cost benefit ratio.

Analysis of systemic and oral complications in patients underwent kidney transplantation

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Aim: Evaluate the relation between the possible presence of oral infectious foci at the moment of the transplantation and the systemic complications in the post-transplantation period. It is also given an analysis about the logistic aspects of the management of these patients in the period before and after the transplanta
Methods: It was analyzed a sample of 70 patients underwent kidney transplantation, divided into two groups:

- Group A: 50 (71%) patients underwent kidney transplantation without oral infectious foci
- Group B: 20 (29%) patients underwent kidney transplantation despite the presence of at least one oral infectious focus.

The patients belonging to these groups, during the pre-transplantation period, followed at Dental School, were treated following the most conservative protocol; for some patients elective treatments, like endodontic retreatment, have been used when necessary following a careful planning on the base of the clinical and radiological analysis. To evaluate the timing for dental treatment it was analyzed the time between the diagnosis of kidney pathology, the transplantation, the first and the last dental visit. At last fever, number of fever episodes, pneumonia, mucositis, urological complications, other complications, acute rejection and death were analyzed as possible complications in the post transplantation period and a correlation of these events and the presence of infectious oral foci was done.
Results: from data's analysis have been highlighted no significant differences between the two groups about the complications; the only exception was for the patients with urological complications, where an improvement of this condition was seen after 6 months from transplantation in the group treated for the infectious foci. Moreover, in the same group, the decrease of the fever in the first 6 months after transplantation was almost significant. In the first 6 months after transplantation it has been seen that the complications were less in the group treated for the infectious foci, except the urological ones, which have no significant relation with the oral infectious foci. The time for dental treatment was of about 20 months, while the time between the diagnosis and the transplantation was about 100 months.
Conclusions: in the patients underwent kidney transplantation there is no significant difference about the post-transplantation complications comparing the group in which the oral infectious foci were treated and the other one in which remains at least one oral infectious focus. Considering the dentist as a dental-care provider, in order to avoid possible complications and to improve the psychological impact of the oral component on these subjects, it is suggested to treat all the infectious foci in the most conservative way in the pre-transplantation period.

Histological evaluation of bone regeneration with concentrated growth factors

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Aim: Tissue regeneration is one of the most studied aspects of modern medicine and the development of platelet concentrates is included in this context. This paper aims to evaluate the possible benefits deriving from the use of Concentrated Growth Factors in regenerative bone surgery or alveolar ridge preservation. The effects on soft tissues and hard tissues are analyzed, from the clinical point of view and from the histological point of view through the analysis of bone coring.
Methods: Adopting certain exclusion criteria, two healthy and adult patients were selected. The CGF

protocol for membrane formation and for the achievement of Sticky Bone was applied. Raised a full-thickness flap, it is placed on the recipient sites the Sticky Bone which is covered by the membranes of CGF; the flaps are then closed by first intention. Six months after the intervention and after CT evaluation of the regenerated sites the surgical re-entry is programmed during which, at the same time of the implant insertion, a bone carrot is taken for the histological analyzes. A total of 4 bone coring were taken. Two colors are made in the laboratory: hematoxylin-eosin for the general evaluation of the morphology of the samples and Masson-Goldner's trichrome for quantitative analyzes. In particular, the percentages of vital bone, non-mineralized tissue and medullary spaces containing or without the biomaterial have been calculated.

Results: Clinically, it has been observed that the application of CGF positively influences the healing of soft tissues, at 4 days it showed no signs of inflammation and appeared pink at 7 days. Healing appeared complete at 15 days without signs of wound dehiscence. Patients reported no pain or swelling exceeding normal parameters and there were no post-operative complications. From the histomorphometric analysis it was found that the vital bone constituted 51 ± 13%, the 12 ± 2% was represented by non-mineralized tissue, while the medullary spaces with the presence or absence of the biomaterial employed 37 ± 5%.During coring the perception of consistency was comparable to a grade IV of the Misch scale; the four coring picked up presented some critical points during the various processing steps due to a different consistency in the different parts of the sample. This fragmentation has made the evaluation and orientation of the samples more difficult. The vases are recognizable and well represented, especially in non-mineralized tissue. The presence of inflammatory elements was not observed.

Conclusion: From the clinical point of view it was observed how the CGF intervened significantly in soft tissue healing. From the histomorphometric analyzes, different signs of bone regeneration emerged: the presence of neovascularization and the percentage of neoformed vital bone, some of which showed a non-homogeneity that could be interpreted as a sign of active bone renewal; furthermore, the still present biomaterial was surrounded by tissue being formed. However, these aspects do not allow, at the moment, to sustain that the process has been accelerated and improved by the addition of CGF. In fact, the study has several limitations: the small number of the sample and the difficulties encountered during the processing of the bone coring do not allow to conduct a statistical analysis. Therefore, studies are still needed to develop precise clinical protocols that make it possible to exploit the CGF's potential.

Biological evalutation of autologous bone samples taken with various methods

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Aim: Autologous bone sampling is a well documented procedure in oral and maxillofacial surgery, therefore there are various methods of sampling bone and particulate blocks. It is suggest that small bone particles exhibit a larger total area, but that mechanical manipulation reduces the number of viable cells taken with greater damage to small particles. The aim of the present work is to determine the number of viable cells in mandibular and maxilla bone chips, evaluating whether there is a significant difference between different methods of sampling and collection.

Methods: The bone-chips were taken using the following methods: scraper (Savescraper®), microscraper (Micross®), implant, piezoelectric scalpel OP3 (Piezosurgery®) and round burs surgical drill 3.5mm. For the surgical drill and piezo scalpel method, the bone chips were conveyed by the surgical suction device connected with collecting systems with a basket or piston filter. The samples were seeded in Dulbecco's Modified Eagle's Medium (DMEM) of 5 cm diameter and incubated at 37 ° C in 95% air and 5% carbon dioxide. The osteoblast survival curves were evaluated in the 30-day time unit, highlighted in microscopy by Burker's chamber. The results were compared with the survival curves of block-section samples of mandible, maxilla and cranial theca.

Results: The study investigated 18 methods of sampling, for each method 3 samples were taken for a total of 54 samples. Among these, 5 samples taken by surgical suction were excluded for bacterial superinfection. The osteoblastic survival curve was higher with bone-chips taken with implantation method (over the 95% at the 30th day) followed by the scaper technique (about 90% at the 30th day) and by the piezoelectric scalpel method and with round burs surgical drill with (close to the 50%). The block-section samples have already produced stratification over the 95% at the 25th. The diversification of the maxillar versus mandibular site did not provide significant results.

Conclusion: The use of one sampling method depends essentially on the surgical occasions. Bone chips produced by drilling the implant site preparation protocol are the most performing, above all because the bone marrow and cortical components are removed. Otherwise the use of the scraper should be preferred. In fact, the scraper is a method of picking