

Clinical and radiographical evaluation of guided bone regeneration for peri-implantitis

Presenter: Yoon H-M

Samsung Medical Center, Seoul, Republic of Korea

Co-authors: Yoon H-M

Samsung Medical Center, Seoul, Republic of Korea

Background: Results from recent publications indicate that peri-implantitis are common disorders. The history of chronic periodontitis may pre-dispose to the development of peri-implantitis. Therapies proposed for the management of peri-implant diseases appear to be based on the evidence available for treatment of periodontitis. From the reports available, it can be concluded that treatment of peri-implantitis lesions with guided bone regeneration may lead to fill of the defects and improved soft tissue conditions.

Aim: Evaluate clinical and radiographical results of guided bone regeneration for peri-implantitis.

Methods: In peri-implantitis patients, guided bone regeneration therapy was done. After incision and flap elevation, granulation tissue was removed thoroughly. Saline soaked gauze swabbing and then saline and chlorhexidine irrigation was done. In one case, regenerative therapy was done after detoxification using tetracycline solution. FDBA and anorganic bovine bone mixture or anorganic bovine bone alone was grafted on defect site. Then, resorbable collagen membrane was applied on the grafts. Suture was done. Oral hygiene instruction and periodic supportive periodontal therapy was done. During follow-up period, clinical and radiographic evaluation was done up to 1–2 years.

Results: In all cases, the radiograph indicate increased radiopacity and bone fill from the initial pre-operation radiograph to the 1–2 years postsurgical radiograph. Probing depth was reduced, bleeding on probing was negative.

Conclusions and clinical implications: From the cases, it can be concluded that treatment of peri-implantitis lesions with the combination of grafts and resorbable membranes may lead to bone fill and improved soft tissue conditions.

Maxillary sinus floor augmentation with anorganic bovine bone: histologic evaluation

Presenter: Yoon H-M

Samsung Medical Center, Seoul, Republic of Korea

Co-authors: Yoon H-M

Samsung Medical Center, Seoul, Republic of Korea

Background: Sinus augmentation is routine procedure for implant surgery of maxillary posterior area. Many grafts materials were used for maxillary sinus augmentation. Among the grafts materials, xenograft (especially anorganic bovine bone) is used in many cases. Osteoconductive properties is expected in xenograft materials for maxillary sinus augmentation.

Aim: The aim of this report is to investigate the efficacy of anorganic bovine bone xenograft at maxillary sinus floor augmentation in humans.

Methods: Two male patients who missed maxillary posterior teeth were included. They were performed maxillary sinus floor augmentation using anorganic bovine bone xenograft. After 10 or 13 months, the regenerated tissues were harvested using trephine drills with 2 or 4 mm diameter and non-decalcified specimens were made. The specimens were examined histologically and histomorphometrically to investigate graft resorption and new bone formation.

Results: Newly formed bone was in contact with anorganic bovine bone xenograft particles directly without any gap between the bone and the particles. The proportions of newly formed bone were 23.4–25.3% in patient 1 (Pt.1) and 28.8% in patient 2 (Pt.2). And the proportions of remained anorganic bovine bone xenograft were 29.7–30.2% in Pt.1 and 29.2% in Pt.2. The fixtures installed at augmented area showed good stability and the augmented bone height was maintained well.

Conclusions and clinical implications: Anorganic bovine bone xenograft has high osteoconductivity and helps new bone formation, so that it can be used in maxillary sinus floor augmentation.

Sinus floor elevation with platelet-rich fibrin

Presenter: Houel C

Ardentis Clinique Dentaire, Swiss Dental Clinics Group, Le Mont-sur-Lausanne, Switzerland

Co-authors: Houel C¹, Nurdin N², Bischof M^{2,3}, Reeners N⁴, Nedir R^{2,4}

¹Ardentis Clinique Dentaire, Swiss Dental Clinics Group, Le Mont-sur-Lausanne, Switzerland, ²Ardentis Clinique Dentaire, Swiss Dental Clinics Group, Vevey, Switzerland, ³Ardentis Clinique Dentaire, Swiss Dental Clinics Group, Lausanne, Switzerland, ⁴Ardentis Clinique Dentaire, Swiss Dental Clinics Group, Yverdon-les-Bains, Switzerland

Background: Sinus grafting with delayed implant placement is indicated when the maxilla is severely atrophied and/or when no period without denture is requested. Many grafting materials are used to gain bone volume for implant placement. Autogenous bone grafting has been widely used despite increased morbidity. Bone substitutes avoid problems related to bone harvesting at secondary surgical sites but are reported to undergo a slow regeneration process. Until now, platelet-rich fibrin (PRF) has been proposed as substitution grafting material with simultaneous implantation (Diss et al. 2008, Mazor et al. 2009).

Aim: A patient asked for maxillary implant placement to support a full prosthesis with the least invasive shortest treatment; he requested no period without denture during the treatment. Sinus grafting was performed with only PRF through a crestal approach and implant placement was delayed. The 1-year clinical performance of implants was assessed.

Methods: A 69-year-old woman presented for maxillary full rehabilitation. Posterior to the maxillary bicuspid, the residual bone height was ≤ 5 mm. PRF grafting was prepared from the patient's centrifuged blood (Choukroun et al. 2001). Through crestal sinus floor elevation, osteotomy sites were enlarged and

the membrane integrity was controlled. PRF pieces were introduced, and flaps sutured. Twelve weeks later, Bone Level[®] (sites #13, 14, 23 and 24; Ø4.1 mm, length 10 mm, Straumann AG) and TE[®] implants (sites #16 and 26; Ø4.8–6.5 mm, length 10 mm, Straumann AG) were placed without tapping in a submerged manner. The 4-month healing period was uneventful. After exposure, implants were restored with an overdenture relying on six implants connected with two bars. Computed tomography scans and radiographs were performed before surgery and during the 1 year follow-up after loading.

Results: All implants achieved primary stability although bone density was poor. They were successfully loaded. After 1 year, they were clinically stable with a functional load. In the sinuses, newly formed mineralized tissue was visible but regenerated bone volumes were limited. Implants #26 and #16 showed a residual protrusion into the sinus of 2 and 4 mm, respectively.

Conclusions and clinical implications: This case report has shown that sinus grafting via a crestal approach can be managed within duration of 3 months using PRF. The introduction of PRF has contributed to maintain space for bone regeneration; however, bone density was poor and peri-implant bone formation was low.

331 | Topic – Tissue Augmentation and Engineering

Autologous wedge-shape ramus graft prior dental implant treatment. Case report

Presenter: Olivera JL

Dent Olivera, Lima, Peru

Co-authors: Olivera JL, Correa E

Dent Olivera, Lima, Peru

Background: There are some implant treatment requirements that must be achieved in order to get a successful complete case. They are both, appropriate functional and aesthetic pattern. However, most patients have distinct residual bone conditions, not only vertical but also horizontal dimensions show resorption result of trauma, periodontal disease, traumatic extractions, etc. These factors sometimes make impossible the immediate implant placement, so we use techniques to recover lost bone dimensions for a long term.

Aim: This case reports a treatment of autologous wedge-shape ramus graft in the alveolus of 2.2 with the aim of increasing the residual alveolar ridge vertical and horizontally, in order to achieve a suitable bone support for the implant, that comply with the appropriate biomechanical functions and satisfy the aesthetic that patient requires.

Methods: A partially edentulous 25-year-old patient without any systemic compromise had a recent extraction socket at 2.2 sites because of several crown destruction. There were a 6 mm and 4 mm-deep defects in the bucal and palatal bone, respectively, that did not allow the placement of the implant and the restoration in a proper position. After expose the affected area a mucosal incision and a total thickness flap elevation was performed in the left retro-molar area, and the autologous wedge-shape ramus graft was harvested by using a 5 mm-diameter round trephine bur. It was necessary to reshape the graft

according to the vertical and horizontal dimensions of the defect. Then, fixed the bone graft in the socket with an osteosynthesis microscrews. When 6 months had passed, we reopened the site and notice a ridge totally consolidated, it means with qualities and dimensions proper to an implant treatment. Finally, we were able to place the implant in the correct position and restore it.

Results: We achieved a significant increase in the height and width of the residual alveolar ridge, approximately 5 mm vertically and 4 mm horizontally, which allowed implant placement 2.2 without any complications.

Conclusions and clinical implications: The use of autologous wedge-shape ramus graft is a predictable choice to regenerate recent extraction sockets with small and moderate plate defects. The regenerated bone has good quality and brings acceptable biomechanical properties to the future implant.

332 | Topic – Tissue Augmentation and Engineering

Osteogenesis distraction, block grafts and periodontal plastic surgery, powerful tools combined

Presenter: Olivera JL

Vanident Especialized Oral Center, Tacna, Peru

Co-authors: Olivera JL

Vanident Especialized Oral Center, Tacna, Peru

Background: Regenerative techniques has become in such powerful tools in implant dentistry that it makes possible to place implants at almost any site in the dental arch. Osteogenesis distraction, onlay and inlay grafts, and GBR provide help to recover lost dimensions, either hard or soft tissues. However, for a correct practice we must focus in so important issues, biomechanics and aesthetics.

Aim: The aim of this case is to show a combination of osteogenesis distraction, block graft for horizontal increasing, blocks graft for vertical increasing and periodontal plastic surgery at 2.1 and 2.2 sites in order to improve the shape, contours and the aesthetics of the residual alveolar ridge.

Methods: A 46-year-old patient with absence of 2.1 and 2.2 with a severe resorption of residual alveolar ridge (Seibert 3) was undergone to an osteogenesis distraction using KLS Martins distractor to increase vertically. After 12 weeks that was the consolidation period, we removed the device and put on an onlay J-shape block graft harvested from the chin with GBR to increase vertical an horizontally. Six months later reopened the site and realized that it was not enough, consequently another chin block graft obtained with a trephine bur with GBR was performed for vertical increasing al 2.1 and 2.2. Once the ridge got the optimal dimensions, we were able to place two implants at those sites. Finally, to improve the contour and aesthetics it was made a connective tissue grafts from the palate and then the individual ceramic restorations.

Results: It was found a significant and progressive gain in height and width with all of the techniques. Osteogenesis distraction improved 4 mm vertically approximately. J-shape block graft improved 4 mm horizontally and 3 mm vertically. The second chin block grafts showed an improvement of 3 mm