

# Coronally Advanced Flap with Site-Specific Application of Connective Tissue Graft for the Treatment of Multiple Adjacent Gingival Recessions Associated With Root Caries and Non-Carious Cervical Lesions

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## **Clinical evaluation/ Diagnosis**

A 53-year old female came for an examination reporting aesthetic demands, and warring about the loss of gingiva, with the exposure of brown part of the teeth. No systemic pathology were reported. A novel treatment-oriented classification (EFP - AAP Workshop 2018) based on the assessment of gingival phenotype, gingival recession severity and associated cervical lesions was used to help the clinical decision process. After a periodontal chart of the patients, the clinician recorded a mucogingival condition with gingival recessions associated with root caries and non-cariou cervical lesions (NCCL). All the teeth were classified with new classification of gingival phenotype and gingival recession recording: interdental attachment level, recession depth, gingival phenotype, root surface condition (presence / absence of NCCL or caries) (step < 0.5 mm or + step > 0.5mm) and the detection (A = detectable, B = undetectable) of the cementum enamel junction (CEJ).

## **Treatment goals**

Mucogingival deformities are a group of conditions that affect a large number of patients. Gingival recession (GR) in particular is a highly prevalent condition that can affect up to 88% of the population over 64 years old. Since life expectancy is rising and people are retaining more teeth it is therefore important to define anatomic/morphologic characteristics of mucogingival lesions and other predisposing conditions or treatments that are likely to be associated with occurrence of gingival recession. Approximately 50% of GR defects present with associated root surface damage, typically from the development of non-cariou cervical lesions (NCCL) When a GR is associated with a NCCL, they form a combined defect, which frequently requires specific treatment protocols. Performing periodontal plastic surgery in combination with restoration can successfully treat gingival recession associated with non-cariou cervical lesion.

## **Description of clinical/surgical procedures**

In all the quadrants, restorative procedure was performed 1 w before surgery and was carried out to reconstruct the NCCL coronal portion. The resin composite restoration was placed, finished and polished and apical margin of restoration was established to be 1 mm apical to the estimated CEJ position. The bilaminar technique adopted consisted of either the multiple CAF proposed by Zucchelli and de Sanctis with or without vertical releasing incision with a site-specific adjunct of CTG. The CTG was harvested from the palat as an epithelial connective graft and subsequently de-epithelialized in an extra-oral modality. The CTG was sutured at the CEJ with interrupted sutures to the base of the de-epithelialized anatomical papillae. The flap (elevated split-full-split-thickness) was then coronally advanced and the insertion of muscles present in the thickness of the flap removed. The flap was than sutured with modified sling sutures anchored around the palatal cingulum of teeth with GR.

## **Clinical outcomes**

Composite restoration of the NCCL combined with MCAF+CTG can successfully treat gingival recession associated with non-cariou cervical lesion. This technique performed similarly in terms of root coverage, provided better gingival margin contour, dentin hypersensitivity reduction, and more harmonious aesthetic results than mucogingival surgery without composite restoration. Based on these concepts, it was reported that a partial restoration, limited to the crown portion of the NCCL, might be performed in association with CAF + CTG to treat B+ class combined defects. At 6 months, the primary and secondary outcomes were to obtain complete root coverage, aesthetic improvement, reduce dentin hypersensitivity, modification of gingival phenotype and resolve cervical lesions (cariou and NCCL).

# Soft tissue augmentation around a dental implant

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[SIdP – 2019 G. Vogel Award Session](#)

## **Clinical evaluation/ Diagnosis**

A woman attended the Master in Periodontology at Complutense University of Madrid complaining about the esthetic appearance of her implant in position 24. After the clinical evaluation, the following periodontal diagnosis was elaborated: - Periodontitis, stage III, generalized, grade A; - Multiple gingival recessions; - Peri-implant mucositis on 24. According to this diagnosis, the patient received oral hygiene instructions, full-mouth scaling and a non-surgical therapy of mucositis on 24 with ultrasonic devices. At the 4-weeks re-evaluation, the peri-implant mucositis was still not completely solved, as 3 out of 6 sites of the implant still were positive to BoP. Moreover, the grey color of the abutment was visible in transparency, together with the presence of 1 mm mucosal recession and mucosal margin mobility.

## **Treatment goals**

According to the clinical recommendations of the Group 1 of the 2nd Consensus Meeting of the Osteology Foundation, the clinicians may consider the use of soft tissue grafting to promote peri-implant soft-tissue health and marginal bone levels at implants with insufficient soft tissue dimensions. Moreover, the patient complains about self-perceived esthetic due to the mucosal recession and due to the transparency of the grey color of the abutment, called for covering the recession and augmenting the soft tissue volume. According to this, an envelope technique was chosen with the following specific objectives: - Increase soft tissue volume; - Remove mucosal margin mobility; - Maintain inter-proximal bone levels; - Covering the mucosal recession; - Improve self-perceived esthetic.

## **Description of clinical/surgical procedures**

Following local anesthesia, a split-thickness (supra-periosteal) bed was prepared on the implant 24 on a single plane, far beyond the mucogingival line, by means of a micro-blade. This bed was extended laterally through the papillae of 23 and 25, up to reach a plane which was extended 5 mm in all directions from the mucosal margin of 24. The exposed implant surface was then decontaminated by means of ultrasonic devices. Then, a sub-epithelial connective tissue graft (15 mm x 6 mm x 1.5 mm) was harvested using the single-incision technique proposed by Hurzeler & Weng (1999). After suturing the palate with interrupted sutures, the connective tissue graft was placed into the split-thickness bed and sutured according to the technique described by Allen 1994. With these 2 sutures, the graft was bitten on both ends with vertical mattress sutures, which entered on the buccal side of the graft. Thanks to the split-thickness bed preparation, a part of the graft was intentionally left exposed.

## **Clinical outcomes**

At the 6 days control, the graft was completely integrated in the receiving tissue. At the 14 days appointment, before suture removal, it was almost impossible to distinguish the CTG from the surrounding tissue. At the 7-months follow-up, the mucosal recession was completely covered, and a clear gain in soft tissue volume was visible. The soft tissue margin was firm, the abutment was not visible in transparency, and the patient was really happy for the esthetic result. The peri-implant mucositis was completely solved (achieving disease resolution), and the marginal bone levels of the implant were maintained. So that, all the pre-treatment goals were accomplished.

# Coronally Advanced Flap with Site-Specific Connective Tissue Graft

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## **Clinical evaluation/ Diagnosis**

A 38 years old woman attended the Master in Periodontology at Complutense University of Madrid worried about the self-perceived esthetic appearance of her lower teeth, associated with dentinal hypersensitivity. After the clinical evaluation, the following periodontal diagnosis was elaborated: - Periodontitis, stage I, localized, grade A; - Multiple gingival recessions. According to this diagnosis, the patient received oral hygiene instructions, full-mouth scaling and oral hygiene compliance re-evaluation at 2 weeks. At the re-evaluation, according to the insistent patient request for gingival recessions treatment, 3 separate root coverage procedures were planned for the lower arch. The present surgery case will focused on the first operated part, the VI sextant. From 43 to 47, four RT1 gingival recessions of 2 to 4 mm were present. The gingival margin was very thin and the amount of KT of less than 1 mm on 43-44. Non carious cervical lesions of type B- were present on teeth 44-45-46.

## **Treatment goals**

For the VI sextant, a coronally advanced flap with site-specific connective tissue graft was chosen. The treatment goals of this surgery were to: - Obtain complete root coverage on all the gingival recessions of the involved teeth; - Improve self-perceived patient esthetic; - Reduce the dentinal hypersensitivity; - Augment the tissue thickness on 43-44.

## **Description of clinical/surgical procedures**

Three days before the surgery, the CEJ of the teeth 44-45-46 was reconstructed. The day of the surgery, following local anesthesia, a split-full-split thickness flap was elevated with a vertical releasing incision mesial to the 43. After flap mobilization, the root surfaces were scaled and planed with curettes, and the papillae de-epithelized. Then, a free gingival graft (16 mm x 4 mm x 1 mm) was harvested from the palate. After suturing the palate with external mattress sutures, the free gingival graft was de-epithelized. The connective tissue graft was then sutured with single 7-0 resorbable suture (PGA). Finally, the flap was sutured with 7-0 resorbable (PGA) sling sutures on the papillae and with interrupted, periosteal-anchored, sutures on the vertical releasing incision.

## **Clinical outcomes**

At the 7 days control, complete primary intention healing was visible on the papillae, and the suture was removed from the palate. At the 14 days appointment, before suture removal from the flap, complete root coverage was visible, which was still present at the 3-months follow-up. The patient was happy for the esthetic result, reported reduced dentinal hypersensitivity and called for treatment of the other sides of the lower jaw.

# Periodontal regenerative procedures with a follow-up 6 years on

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## **Clinical evaluation/ Diagnosis**

Spartaco, a 45 years old healthy man, a former smoker who quit more than 10 years ago. He came to my office knowing several of his teeth have to be extracted because of periodontitis, thus he wanted to replace those teeth with implants. His wife's dentist, indeed, told him there is no solution for his disease. Spartaco already had 2 implants in his lower jaw but was not satisfied with the outcome and he was right. After my examination I gave him my diagnosis: he had an advanced form of periodontitis and actually he would have lost his teeth in a short time. However, extracting teeth and replacing them with implants was not the right choice. So I outlined the treatment plan suitable for curing his periodontal disease.

## **Treatment goals**

The first target of the periodontal treatment is to stop the periodontal disease and to avoid further loss of support. After 3 months from the Non-surgical phase, I re-evaluated Spartaco's periodontal tissue and I found a great improvement: the probing depth was generally reduced although the Sextants 1, 3 and 5 needed surgical treatment.

## **Description of clinical/surgical procedures**

Sextant 1 and 3: I opened a flap preserving the papillas according to Cortellini's SPPT (1999) and removed the infra-bony granulation tissue, finding very deep angular defects. After debridement, Pref-gel was placed on the roots and left to act for 2 minutes and then removed with saline. A thin layer of EMD was placed in contact with the roots. Thus, the huge angular defects were filled by Bio-Oss as scaffold and a new layer of EMD was placed again over the bone particulate. In the end, I closed the flap with a mix of mattress and single sutures. Sextant 5: A flap was opened according to Cortellini's MPPT (1995). After debridement of the granulation tissue, tooth #3.1 showed a deep but narrow defect, so I placed just EMD deeply in the defect and all around the sextant because of shallow defects on the other teeth.

## **Clinical outcomes**

Spartaco was really good and actually he is still one of my best patients in term of oral hygiene. Also thanks to his compliance, I can show a follow up 6 years on. On January 2019, I took the last pictures and X-rays which now I can show you: not one tooth was lost, not one implant was placed. He still bites with his own teeth.

# Guided tissue regeneration in Severe Periodontally Compromised molars

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## Clinical evaluation/ Diagnosis

A 77y old, non smoker, systemically healthy patient presented to our clinic with complaint of discomfort and difficulty in chewing, and bleeding on brushing. At the Baseline patient showed high percentage of full mouth plaque and bleeding score with widespread inflammation, bleeding, mobility and suppuration of tooth # 4.6. Tooth # 4.6 was non vital with deep probing pocket depth on the buccal side with Grade 2 furcation defect. The tooth # 3.6 had the same situation as on the right side except the tooth was vital. According to the new classification, the patient was diagnosed with a " Stage III Grade A, generalized periodontitis" based on the clinical parameters noted at the Baseline.

## Treatment goals

In the first phase of the treatment the main of etiological treatment was to reduce the infectious burden in the oral cavity. Staged Scaling and root planing was carried out with meticulous oral Hygiene instructions and patient's progress was assessed on every single visit. Root Canal therapy was carried out for Endo-Perio lesion on tooth # 4.6. Occlusal analysis to eliminate possible trauma was performed and monitored throughout the duration of treatment. At the reevaluation of non-surgical therapy performed 8 weeks after the last session of SRP, the periodontal situation appeared to be significantly improved with reduction of all pathological periodontal indexes. Surgical therapy was subsequently planned, where deemed necessary, to decrease the risk of recurrence and progression of the disease.

## Description of clinical/surgical procedures

Following RCT of #4.6 NST was continued for next six months. There was some clinical improvement in the soft tissue profile but the radiographic examination showed minimal improvement. The clinical parameters led us to go for GTR technique. Intrasulcular incision was performed with a releasing incision mesial to tooth #4.5. A full thickness mucoperiosteal flap was raised. Following the degranulation, the defect was presented with Class 2 Furcation defect with only lingual cortical plate intact. an intra-osseous component mainly of two walls that reached and exceeded the apex of the mesial. Given the low-containment nature and lack of the vestibular cortex, a combination of bio resorbable membrane and bone substitute (BioOss-Collagen) were used. An autogenous connective tissue graft was also used to improve the thickness and width of Keratinised tissue. 6.0 polysorb sutures were used to secure the membrane and flap was replaced with the help of simple sutures using 6.0 Goretex.

## Clinical outcomes

From the last clinical and radiographic examination carried out at 12 months period, one can appreciate how regenerative therapy has brought about an improvement in all the parameters. Clinically, Probing pocket depth was reduced to normal with no pathological mobility of the tooth. Radiographically, the presence of radiopaque material within the defect is appreciable. After 3 months of healing Odontoplasty of the furcation area was performed to eliminate residual class I furcation defect. There was no significant improvement in terms of quality and quantity of the keratinized tissues but the clinically soft tissue margin was healthy with no signs of inflammation.

# Regenerative periodontal therapy of an intrabony defect through a papilla amplification flap combined with enamel matrix derivative

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## **Clinical evaluation/ Diagnosis**

A 45 year old, non smoking, systemically healthy patient, presented complaining of his gum bleeding during regular oral hygiene manoeuvres. His last dental visit occurred 2 years ago. Previous treatments only included the extraction of tooth 3.7. Clinically, the patient presented with intact dental arches and a stable occlusion. Visual signs of gingival inflammation were present in all sextants, and were combined with a FMPS of 63%, a FMBS of 48%, and no suppuration. Deep pockets (> 6mm according to Heitz-Mayfield et al. 2002) were present at teeth 1.8, 2.6, 2.7, 2.8, 4.6, 4.8. Radiographically, images compatible with intrabony defects were present at all teeth affected by deep pockets. Of these, 4.6 appeared to present a 3 wall intrabony defect at its distal aspect. At this root, the radiographic bone loss reached approximately 70% of the root length, determining a bone loss to age ratio of 1,56. Thus, the patient diagnosis was Localised, Stage III, Grade C, Periodontitis.

## **Treatment goals**

A treatment strategy was designed to achieve infection control through the following phases: Causal Therapy. The patient was informed and motivated to improve his oral hygiene. An oscillating rotating toothbrush was prescribed, combined with regular use of interdental brushes and floss. Scaling and root planing was performed in 2 sessions using both ultrasonic and manual instruments. Teeth 1.8, 2.8, 4.8 were extracted due to the presence of deep pockets, unfavorable root morphology, and proximity with the second molars. For two weeks, the patient was prescribed to use a chlorhexidine mouthwash at 0,12% twice a day. A re-evaluation was performed 2 months after basic therapy, and evidenced the presence of a residual pocket of 7mm at the disto-buccal aspect of 4.6 and of 9mm at its linguo-buccal aspect. Advanced Therapy. A regenerative periodontal surgery was designed with the aim to control the infection at the residual pocket of 4.6 and to reconstruct the lost periodontal anatomy.

## **Description of clinical/surgical procedures**

Based on the radiographic appearance of a contenitive defect configuration, EMD was chosen as regenerative technology. Due to the presence of a small soft tissue crater located below the contact point, a papilla amplification flap was selected to promote first intention healing over the defect. According to this flap design, an amplified papilla was created by removing the gingiva coronal to two scalloped paramarginal incisions performed at the buccal and lingual aspect of 4.7M and 4.6D, preserving approximately 1-2mm of keratinised tissue. Thus, an envelope-type, coronally advanced flap was designed, using the defect as a center of rotation, while at the level of the amplified papilla, the supracrestal soft tissue above the angular defect was preserved with intrasulcular incisions and a full thickness elevation. After defect debridement, root instrumentation, application of EDTA and EMD, the flap was closed with horizontal mattress, simple interrupted, and sling sutures (6/0 PGA).

## **Clinical outcomes**

Postoperative healing occurred uneventfully and sutures were removed at 14 days. Maintenance care was provided every 7-10 days for the first postoperative month, every month for the following 3 months, and every 3 months until the first postoperative year. At 1 year, a CAL gain of 5mm was observed at the disto-buccal aspect of 4.6, and of 4mm at its disto-lingual one. Accordingly, an almost complete radiographic bone fill of the intrabony defect was observed in the periapical radiograph at 1 year. A supportive periodontal therapy regimen was established, with a frequency of recall of 6 months.

# Treatment of a peri-implant buccal bone dehiscence with the sub-periosteal peri-implant augmented layer (SPAL) technique

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## Clinical evaluation/ Diagnosis

A systemically healthy, 65-year female patient presented for the fixed rehabilitation of an isolated edentulous, lower first molar site. The patient did not present any contraindication to oral surgery, in general, and implant surgery, in particular. Periodontal screening resulted in a diagnosis of gingivitis on a reduced periodontium in a non-periodontitis patient, in association with traumatic recessions. The tooth was extracted 18 months due to vertical root fracture. On bucco-lingual tomographic sections, bone height was 14.2 mm. However, a bone width of 4 mm was observed, thus limiting the possibility to place a 4-mm wide implant entirely in native bone. Therefore, horizontal bone augmentation was needed to restore proper transversal dimensions of the bone crest.

## Treatment goals

Insufficient bone dimensions may lead to a deficiency of peri-implant tissues, thus calling for hard and/or soft tissues reconstructive procedures. The presence of a buccal bone dehiscence around implants has been shown to be associated with greater mucosal recession on the long-term and a greater risk of bleeding on probing when deeper than 1 mm [Schwarz et al. 2012]. The present case report illustrates a simplified soft tissue management technique, namely the sub-periosteal peri-implant augmented layer (SPAL) [Trombelli et al. 2018a,b]. SPAL represents a soft tissue management procedure aimed at increasing the horizontal and vertical dimensions of the sub-periosteal tissues at the most coronal portion of an implant presenting missing or thin buccal cortical bone plate (BCBP) at the time of implant placement. In this specific case, the treatment goal was to determine an increase in bone width to correct a buccal peri-implant bone dehiscence through the application of the SPAL technique.

## Description of clinical/surgical procedures

A split-thickness buccal flap with two vertical releasing incisions was raised, thus separating the mucosal and periosteal layer. A crestal incision was performed to the bone crest, and the periosteal layer was elevated, thus creating a pocket that could accommodate an adequate volume of graft material. Immediately after the insertion of a 4-mm wide and 9.5-mm long implant with the polished collar slightly below the bone crest, a 2-mm deep bone dehiscence was observed at the buccal aspect. A healing cap was positioned. A bovine-derived xenograft (Bio-Oss spongiosa granules, particle size: 0.5-1 mm; Geistlich Biomaterials, Thiene, Italy) was used as a space-making device to fill the space between the periosteal layer and the exposed implant surface. The periosteal layer was sutured to the oral mucoperiosteal flap. The mucosal layer was coronally advanced and sutured tension-free to submerge both the graft and the implants. Sutures were removed at 2-weeks post-surgery.

## Clinical outcomes

At 5 months following implant placement, the healing cap was partly exposed and the buccal keratinized tissue (KT) width was less than 1 mm. Surgical re-entry for implant uncovering was performed. The implant was stable and the rough surface was entirely submerged. At the buccal aspect, the subperiosteal tissue thickness at the most coronal portion of the implant was 2 mm. A healing abutment was positioned, and a buccal split-thickness flap was raised and apically positioned to allow for the placement of a free gingival graft at the most coronal portion of the implant. The implant was loaded at 7 months following implant placement. No radiographic signs of peri-implant bone loss were observed between implant insertion and 17-month follow-up from implant surgery. At the 17-month visit, peri-implant pocket depths were lower than 4 mm, no bleeding on probing or suppuration were detected upon probing, and KT was 4 mm.

# Implant replacement in aesthetic zone

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## **Clinical evaluation/ Diagnosis**

The patient L.A. (31y) comes to our attention referring mobility of the element 2.1 and complaining of an annoying pigmentation of the vestibular mucosa that has worsened over the years. From the clinical and radiographic examination, induced plaque gingivitis is diagnosed and treated.

## **Treatment goals**

Post extractive implant with load at 48h and performing best aesthetic. From the evaluation of the residual cortical bone and from the presence of favorable peaks the treatment plan consists to extraction of the implant 2.1, immediate insertion of a new correctly positioned implant and contextual guided bone regeneration. To integrate the treatment plan, ceramic veneers are also programmed on elements 1.2, 1.1 and 2.2.

## **Description of clinical/surgical procedures**

The vestibular flap design begins with a first distal vertical incision to the element 2.2, continuing intrasulcular to the elements 2.2, 2.1, 1.1 and ends with a second distal vertical incision to the element 1.1. A total flap is elevated to expose the implant to be extracted. Once extracted, it is possible to appreciate conserved bone peaks. Preparation of the prosthetically guided implant site and insertion of a new implant with an internal connection of length 12.5 mm and platform 4.5mm. The residual vestibular dehiscence is treated with GBR with allogeneic bone graft and a reabsorbable expanded polyethylene membrane. The membrane is anchored to the palatum by suture in reabsorbable polyglycolic acid 6.0 and vestibularly by two osteosynthesis tips. After performing the periosteal incision for the coronal sliding of the flap, a double vertical mattress suture is performed to stabilize the mesial and distal papillae. The vertical incisions are sutured with single points.

## **Clinical outcomes**

A new implant was successfully inserted with GBR auxilium. Three veneers was successfully cemented on elements 12, 11, 22. Gingivitis was treated with ultrasonic instruments and AirPolishing.

# Implant surgery with immediate loading in the aesthetic area

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## **Clinical evaluation/ Diagnosis**

Patient , 40y, women ,housewife. nothing to report in the anamnesis in the first visit. The patient goes to our study because it feel pain and swelling in 1.2 zone. Reports that she has made last professional hygiene a year ago. Brush her teeth twice at day with a medium bristled toothbrush. The patient reflects a positive and collaborative psychological profile. Diagnosis: fractures of the dental element 1.2.

## **Treatment goals**

control of gingival inflammation through professional hygiene . Resolution of the problem concerning the dental element 1.2

## **Description of clinical/surgical procedures**

The surgery was performed by extracting in extremely delicate way. after intercepting the cortical bone with the probe, proceeded with the insertion of the implant, 2mm under the ridge osseous .The vestibular gap(2mm) it has been filled with Bioss. Immediate insertion of the temporary crown allowed to stabilize the bone graft. It was not necessary to use stitches.

## **Clinical outcomes**

The case in question reported a good clinical success after implant surgery thanks to minimally invasive approach the immediate loading has allowed the elimination of aesthetic discomfort for the patient and the stability of the bone graft. The 24 month check shows a good integration of the crown. the rx shows a good level of the bone crest.

# Perio-Restorative approach for the treatment of Altered Passive Eruption

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*[SIdP – 2019 G. Vogel Award Session](#)*

## **Clinical evaluation/ Diagnosis**

Gingivitis-Dental biofilm induced. Altered passive eruption type IB associated with periodontal pseudopockets from 1.5 to 2.5. Malpositioned upper central incisors and III class carious lesions on 2.1, 2.2, 1.2.

## **Treatment goals**

Re-establish the periodontal health with full-mouth non surgical treatment and oral hygiene instructions and motivations. Establish the correct position of the gingival margins and the biological width of the periodontal tissues. Conservative treatment of the carious lesions on 2.1, 2.2, 1.2. Restorative treatment to modify the emergence profiles on the mesial side of central incisors in order to transform the incisal contact point in an interproximal area to improve the esthetic of the interdental soft tissues.

## **Description of clinical/surgical procedures**

With the aid of the CBCT image, the real dimension of the anatomical crowns and the position of the CEJ have been established. These measurements allowed to create a surgical guide. Using this template, the first submarginal incision ( reproducing the natural scalloping) has been performed from 1.5 to 2.5. Then, the marginal flap has been removed. The split-full-split flap has been elevated: the papillae area has been elevated split thickness, apically a full-thickness elevation allowed to gain access to the bone. Osteotomy has been performed in order to remove the supporting bone and to establish the biological width. Then, osteoplasty has been made in order to reduce the buccal bone thickness and to create physiologic osseous morphology. Finally interrupted sutures with prolene 6.0. After soft tissues healing, direct composite restorations has been made in order to treat carious lesions and to modify the emergence mesial profiles on upper central incisors.

## **Clinical outcomes**

After six months, the gingival margin is stable in the desired position. Periodontal health has been achieved with physiological probing depth, and FMBS: 16% and FMPS: 14%. All the carious lesions have been treated. The new shape of the upper central incisors has improved the esthetics and the harmony between the dental tissue and gingival tissue.

# Multidisciplinary treatment of an implant complication in esthetic area: A case report

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*SIdP – 2019 G. Vogel Award Session*

## **Clinical evaluation/ Diagnosis**

At first visit a 19 years old patient came to our office for pain and swelling on a not restored implant placed by another colleague one year before; she told us that previous treatment was a post extractive implant placed on upper left central incisor after a motorcycle accident; implant showed bleeding on probing, purulence and movement, clinical evidence of integration lost. Periapical rx and clinical evaluation revealed an uncorrect mesio-distal positioning (too near to the upper left lateral incisor) and a vestibular-palatal wrong axis; patient wasn't happy about esthetic, she felt pain and discomfort and ask us to solve her problem; patient showed an altered passive eruption, a wide mesio-distal prosthetic space in correspondence of upper left central incisor, vestibularization and rotation of the upper left lateral incisor and a soft tissue concavity and bone loss on the upper left central incisor.

## **Treatment goals**

Patient was 19 years old at time of first visit, with high esthetics demand. According with her, we proposed to remove the implant, the position and the loss of integration didn't let us to restore it; after an orthodontic therapy (most of all, in order to gain the ideal prosthetic space of upper left central incisor and to modify rotation and inclination of upper left lateral incisor) we opted not to place a new implant for two reasons: patient was too young (22 years at the end of orthodontic treatment), and due to the previous experience she refused to place an implant again and ask us for any alternative options; so we decided to treat alterate eruption, modify the soft tissue thickness in correspondence of central incisor and to use an adhesive maryland bridge restoration to replace the missing incisor.

## **Description of clinical/surgical procedures**

After implant removal , we treat patient with orthodontics in order to gain a correct prosthetic space on missing incisor and modify teeth position, in particular on left upper lateral incisor. Two years after orthodontic treatment we decide to modify soft tissue thickness at central incisor site with double connective tissue platform graft and to treat altered passive eruption to improve the lenght of clinical crown; in a first step we open a full thickness flap in correspondence of neighbors teeth ( in order to perform osteoplasty and ostectomy and split thickness in the graft area; due to the initial coronal displacement of the flap, after 2 months we reshape gingival margin with a little diode laser gingivectomy to complete crown lenghtening procedure and improve teeth esthetic appearance; 4 months after, a PMMA provisional maryland bridge was placed and after soft tissue conditioning we inserted a zirconia-ceramic maryland bridge restoration.

## **Clinical outcomes**

After final restoration insertion, patient was extremely satisfied; she showed a natural smile, with a good soft tissue blending and armonic gingival margin, without any implant placement; ceramic maryland bridge was very stable and patient likes colour and shape; modern adhesive techniques are not provisional solutions to replace missing teeth, and due to the relationship modification between implants and teeth in esthetic area year after year (even more in young patients), soft tissue modification and adhesive restorations are valuable solutions to replace missing teeth in esthetic area; the possibility to treat simultaneously altered passive eruption and soft tissue gap , reduced number of surgeries and treatment time, probably less than an implant placement with a bone and soft tissue reconstruction, with high patient's satisfaction.

# Interdisciplinary management of an interdental gingival recession in a periodontal complex case

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## Clinical evaluation/ Diagnosis

In 2013 a young patient (GC) came to ask for a consultation about his gingival conditions. He complained about recurrent swelling on the left incisors, about their migration noticed in less than 2 years. He also referred gingival bleeding and halitosis. The patient had a panoramic radiography and had already consulted the general dentist. He was 28 years old, healthy, no smoker, with a familiarity for periodontal disease and worried about the fate of his teeth. At the clinical examination, an abscess was draining from the sulcus of teeth 21 and 22. Plaque was present but not abundant, with very little calculus. The dentition was complete. At the periodontal examination, some very deep pockets were shown. Bleeding on probing was also present. Tooth 2.2 was affected by a grade I mobility. Diagnosis was Localized Aggressive Periodontitis. The patient was also affected by an Angle Class I malocclusion, with a canine crossbite on the left side, and by a periapical lesion on tooth 2.5.

## Treatment goals

The main objective of the treatment was the resolution of recurrent periodontal infection. Goals of the first phase of treatment were also the resolution of the periapical lesion and the establishment of clinically stable periodontal parameters, with pocket closure. At the first periodontal reevaluation, the regeneration of the infrabony defects was planned on site 1.6, 35-36 and 45-46. Periodontal wound healing was monitored for up to 12 months, with a regular supportive periodontal therapy before enrolling the patient to an orthodontic treatment to solve the crossbite on the left side and the loss of occlusal lateral guidance. The aim of the orthodontic treatment was to reach a balanced occlusion with no damage to the already reduced attachment. The patient also expressed the willing for a more pleasant smile. Aim of the surgery in the frontal upper region was minimizing the recession on 2.1 (type RT3) and to regenerate the infrabony component of the defect.

## Description of clinical/surgical procedures

The patient was informed about the nature, the etiology and the consequences of periodontal disease. He was compliant and willing to collaborate. New and more effective oral hygiene instructions were provided to the patient and a supra and subgingival debridement was performed in 4 appointments in 2 weeks, under local anesthesia if needed, using both mechanical and manual instrumentation. Endodontic retreatment of tooth 2.5 was performed. The first phase of the treatment was concluded with a periodontal reevaluation a 60 days from the active therapy. Periodontal surgeries for the regeneration of the infrabony defects on teeth 46-45, 36 an 16 were performed. EDTA and amelogenins were placed on the debrided roots, according to the established protocols. Where the papilla was not sustained by the bone peak, a small amount of bovine bone substitute was added in the defect.

## Clinical outcomes

The patient was enrolled in a post-op supportive therapy. The orthodontic treatment began after the check of periodontal parameters during a 12 months period. The orthodontic treatment was performed accordingly to the periodontal condition of the patient, with an accurate control of biomechanics, with a bracketless appliance, in order to reduce plaque accumulation and facilitate oral hygiene. At the end of retention phase, a surgery to regenerate the defect between 21 and 22 was performed with subepithelial connective tissue graft harvested from the palate and a coronally advanced flap to cover the regenerating site. Amelogenins were applied in the recipient created by the connective graft on the vestibular side. The wound healing was uneventful. The filling of the defect was highly satisfying and the papilla was almost completely restored. The follow-up presented is at 14 months from the surgical procedures and the patient is still attending the SPT program.

# Lembo d'accesso mediante SPPT per trattamento endo-restaurativo di riassorbimento esterno

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[SIdP – 2019 G. Vogel Award Session](#)

## **Clinical evaluation/ Diagnosis**

The patient was referred because of pain on a pink colouring of the cervical margin of tooth 1.1. We evaluated tooth vitality and took an x-ray, and we highlighted a root resorption. Probing depth was not pathological.

## **Treatment goals**

The treatment goals are the elimination of the pain, tooth survival, fisiological probing depth and good aesthetics.

## **Description of clinical/surgical procedures**

We used round burs to remove root demineralized tissues, so we verified that the resorption was in conjunction with pulp. We performed root canal therapy, then we executed an envelope flap through SPPT to expose root resorption and clean it. We positioned rubber dam and repaired the resorption with composite, then we removed periodontal attachment with the purpose of recreate a right biological width from the composite. We sutured the flap with polypropilene 6/0

## **Clinical outcomes**

After 10 days we removed sutures. The patient didn't use toothbrush and dental floss for 15 days. After 2 months we evaluated CAL loss and we found 1 mm REC and no pathological PD. At the 1 year control, all the treatment goals were respected although a 1 mm REC was noticed.

# Case report of reimplantation for challenging tooth fracture

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## **Introduction / Treatment goals**

Treatment of dental fractures especially after endodontic treatment still maintain its popularity. It is very challenging in the sense of catching both fractures repair and prognosis. Novel resin based cements are alternative options for fractures of hopeless teeth and CAD-CAM crowns are considered to be important in function, prognosis and treatments of the fractured tooth. Rehabilitation of fractured teeth procedures could be achieved with or without extraction of fractured teeth but reimplantation after extraction is more predictable. Recent treatment success criteria have changed from extraction to save and proprioception.

## **Case report / Materials and methods**

A horizontal fracture was detected at lower second molar tooth in the clinical and radiographic examination. After atraumatic extraction was performed a self-cure dental adhesive system which contains 4-META/MMA-TBB (Superbond®) was applied on fractured part for repair. After starting polymerization, tooth was reimplanted to its original socket. The tooth was secured in socket with cross periosteal sutures because of missing adjacent teeth. Suture was renewed each 3 weeks for 3 months period for fixing tooth to the socket. The tooth was prepared in chamfer steps f and scanned with 3D intraoral scanner (Sirona Omnicam®). For completing missing area and to maintain the tooth, a dental bridge was performed. Bridge was bonded with dual-cure fluid composite and patient was instructed for oral hygiene procedures.

## **Controls and Clinical outcomes**

The patient was followed at 1st, 3rd and 6th months. Healing was uneventful and no inflammation and no recession were observed around tooth.

## **Conclusion**

The fractured teeth is quite a hard case to be rehabilitated. Functional bonding by resin based cement resolves the patient's functional concerns. When administered with proper cement and crown, the tooth would function permanently instead of extraction. It has been proposed as a permanent prosthetic restoration method with the patient's own tooth.