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Pre-Congress Hands-on Training Courses

W1 PERI-IMPLANT TISSUE RECONSTRUCTION: FUNDAMENTALS OF MICROSURGICAL TISSUE HANDLING AND WOUND CLOSURE

Serhat Aslan
DDS, MSc, PhD. Professor, periodontist, Ege University, Turkey. Private Office Alsancak, Turkey

Developments in the microsurgery have led to an era of invisible dentistry. Technical improvements and advancement in biomaterials facilitate to augment the deficient sites. Despite these developments, the rules of the biology remain the same. Blood supply, handling of the soft tissues, flap thickness, design and tension are key elements to achieve optimal surgical outcome. These factors should be critically evaluated and controlled by clinician. In this training module, participants will receive the core of modern periodontal treatment concepts for peri-implant tissue reconstruction.

W2 GEISTLICH REGENFAST®: CLINICAL APPLICATIONS FOR HARD TISSUES REGENERATION

David Palombo
DDS, MSC, MDS, MCLINDENT(PERIO), EFP Board of Periodontology, Professor Master, Periocentrum Academy (Madrid), Milano, Italy.

Alveolar bone defects deriving from the resorptive processes which follow tooth extraction, long-standing edentulism, periodontitis, or trauma, are a common finding in partially or totally edentulous patients requesting implant-supported prosthetic rehabilitations. Recently, a novel regenerative technology based on a viscoelastic gel composed of polynucleotides and hyaluronic acid has been introduced, which aims to promote healing during hard and soft tissue reconstructive procedure. The objective of this workshop is review the biologic rationale for its application in peri-implant hard tissues reconstructions, to describe its step by step specific application protocol and its first clinical and histologic results. A simulation of a guided bone regeneration procedure will be performed, analysing the critical steps of the surgery and reviewing the application of the viscoelastic gel using a layered approach.

Invited lectures

I1 PERFECT & LASTING AESTHETICS + SHORTENED TREATMENT TIME = DIGITAL DENTISTRY

Mischa Krebs
Dr. med. dent. assistant professor in the department of post-graduate education of the Goethe University, Frankfurt, Germany; Private dental practice, Alzey, Germany

Osseointegration with dental implants has initially been published in 1969, nearly 55 years ago, and later been established as one of the standard procedures for the reconstruction of edentulous arches, partly edentulous areas and single tooth gaps. During this long time period a continuous evolution of treatment concepts has been taking place, all basing on the same basic techniques already developed in the 1960ies. New digital technologies allow for completely new workflows from single tooth to full arch reconstructions. Besides a significant reduction of treatment time these workflows can help to make the dream of minimal invasive surgery possible and, most important, improve the treatment outcome, both aesthetically and functionally.

I2 HARD TISSUES REGENERATION: FROM BASIC PRINCIPLES TO MODERN INNOVATIONS

David Palombo
DDS, MSC, MDS, MCLINDENT(PERIO), EFP Board of Periodontology, Professor Master, Periocentrum Academy (Madrid), Milano, Italy.

Alveolar bone defects deriving from the resorptive processes which follow tooth extraction, long-standing edentulism, periodontitis, or trauma, are a common finding in partially or totally edentulous patients requesting implant-supported prosthetic rehabilitations. When reconstructing complex horizontal and/or vertical atrophies, the best-documented techniques are based on the use of autologous bone, by virtue of its osteogenic, osteoinductive, and osteoconductive potential, and on the use of rigid devices to maintain the regenerative space, such as bone blocks and reinforced membranes. However, asides from increasing the surgical
morbidity, these regenerative technologies have proven to be extremely technique sensitive and subject to variable complication rates (0 to 45%). The objective of this lecture is to describe the use of a new regenerative technology based on a viscoelastic gel composed of polynucleotides and hyaluronic acid, applied with a layered technique, in the reconstructive treatment of a maxillary bone atrophy for peri-implant purposes. The biologic rationale for its use, as much as the site specific application protocol and the first clinical and histologic results will be analysed through a series of clinical cases.

I3 THE FUTURE OF RECONSTRUCTIVE PERI-IMPLANT SURGERY: INFLUENCE OF BIOMATERIALS AND FLAP DESIGN

Serhat Aslan
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In the era of esthetics, clinicians are seeking for optimal results by avoiding invasive treatments. Recent developments in regenerative techniques and adoption of microsurgery in periodontal and peri-implant tissue reconstruction minimize the tissue trauma/loss, and this led to an increase in the expectations of the patients. However, the clinical excellence does not only depend on the clinical skills or practice settings. Treatment outcome is influenced by combination of many factors. For clinical success, treatment steps and protocols should be embraced by patient and clinician. In this lecture, the requirements for peri-implant tissue reconstruction and health will be discussed in greater details.

I4 ADVANCES IN IMPLANT DENTISTRY FOR YOUR DAILY PRACTICE

Irena Sailer
Prof. Dr. med. dent., prosthodontist, Head Division of Fixed Prosthodontics and Biomaterials at the University of Geneva, Switzerland.

The recent digital technology offers numerous new and efficient options for planning and conducting implant and restorative treatments. Within digital dentistry cone beam CT scanning and optical impressionning are the first steps towards a digitalization of the patient's intraoral situation. The resulting digital files are then used for the virtual planning and guiding implant placement. The main goal is to initially define and later on follow a systematic and evidence based treatment plan, in simple as well as more complex dental rehabilitations. In the restorative phase digital dentistry is used to virtually design reconstructions, which thereafter can be milled out of prefabricated blanks of different materials with aid of CAD/CAM systems. Even more, these CAD/CAM reconstructions can either be made in a centralized production facility or chair-side in the dental office. The digital systems available today offer numerous advantages, like e.g. the precision of the reconstructions. A high number of studies have demonstrated good accuracy of the current subtractive manufacturing, i.e. the computer-aided milling or the grinding of ingots. More recently, additive procedures have been introduced. Stereolithography, laser sintering or printing of materials like wax, resins or metals has shown to be even more precise than the subtractive manufacturing. Furthermore, the additive fabrication of reconstructions may even be more efficient due to the fact, that less time may be needed for the fabrication and no material excess is produced. Finally, the „digital workflow" and the associated additive procedures, is not only interesting for the planning and fabrication of implant reconstructions but also for a better patient/dentist communication. As an example, 3D prosthetic diagnostic files of digital wax-ups or set-ups may be printed out of resin and used for try-in in the clinical situation. Learning objectives: - learn and understand the value of conventional and digital diagnostics - learn how to efficiency transfer the digital diagnostics into a final reconstruction. - learn how to make an optical impression for an implant with the Trios IOS and adhesively cement a monolithic crown to a Ti-Base - learn about the restorative options, their possibilities and limitations - learn to select restorative options for predictable white and pink esthetic.

I5 SECRETS OF PERI-IMPLANT TISSUE STABILITY: UNVEILING THE KEY FACTORS

Miha Pirc
DMD, specialist in periodontology, Clinic of Reconstructive Dentistry, Center of Dental Medicine, University of Zurich, Switzerland.

The treatment of partially or fully edentulous patients with dental implants is a widely utilized approach for supporting fixed and removable prostheses. Based on the plethora of systematic reviews and clinical studies, high survival rates can be expected. However, long-term outcomes in the available literature are mainly focused on the survival rates and quantity and quality of the peri-implant bone. Due to the lack of clinically relevant parameters, survival rates are not sufficient from a clinician's perspective. Therefore, the definition of 'implant success' has evolved over the years. Success criteria were defined, adding technical, biological and esthetic outcomes to the survival rates. Among success parameters, stability of peri-implant hard and soft tissues appears to be relevant, from the esthetic point of view and also from a biological point of view. A recent systematic review suggests that thick peri-implant soft-tissues are associated with a more favourable aesthetic outcome compared to thin peri-implant soft tissues. Emerging evidence suggests that soft tissue thickness plays an important role for the maintenance of peri-implant tissue health. Moreover, thin soft-tissue phenotype is associated with increased prevalence of peri-implant mucositis and peri-implantitis, when compared with thick tissue phenotype. In addition to anatomical and prosthodontic factors, peri-implant maintenance therapy plays a vital role in preserving peri-implant health. Supportive periodontal therapy, which has been proven essential in preventing the occurrence or recurrence of periodontal disease, has guided the development of maintenance protocols for dental implants. These protocols are tailored based on the patient's risk profile. Currently, it is widely accepted that peri-implant maintenance therapy should be conducted every 5-6 months for individuals without significant risk factors for disease development. Various protocols have been proposed to establish an inflammation-free environment and achieve harmony between the stability of hard and soft tissues. These protocols have been proven successful in maintaining periimplant health. The aim of the lecture is, therefore, to provide an overview on the stability of peri-implant soft tissues and potential influencing factors.

I6 DIGITAL PLANNING AND GUIDED IMPLANTS IN THE AESTHETIC ZONE

Andreas Barbetseas
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Modern clinicians are continuously challenged, on the one hand by the increased demands of their patients for an optimal aesthetic result and on the other hand by the vast evolution of new techniques, protocols and technologies. Especially in aesthetic implant cases, while there are definitely multiple valid alternatives in terms of managing the soft and hard tissues, most clinicians would be ready to agree that the most critical parameter is always the precise position of the implant itself. This comprehensive lecture offers a structured combination of treatment strategies for the implant management of the aesthetic zone, while demonstrating a successful integration of all the digital tools that we have available in the planning and clinical phases of implant treatment. We really have a choice to make our everyday clinical reality predictable, successful and fun!

I7 MANAGEMENT OF WHITE AND PINK ESTHETICS - AN INTERDISCIPLINARY APPROACH

Irena Sailer
Prof. Dr. med. dent., prosthodontist, Head Division of Fixed Prosthodontics and Biomaterials at the University of Geneva, Switzerland.

The restoration of a tooth or the replacement of a missing tooth in the esthetic area is very delicate, specifically in patient cases with high lip line. At demanding patients high efforts have to be made to reduce the risk for not ideally shaped or colored restorations and/or for soft tissue discolorations in order to avoid esthetic failure. From a restorative point of view the type of reconstruction and the material it is made out of have a significant influence on the result. The current restorative material options offer many esthetic features to best copy the optical properties of teeth. The color, chroma and lightness of the esthetic materials (e.g. ceramics) are hereby important parameters. Furthermore, the translucency is a important both for the mimicking of teeth as also for the masking of discolorations. A structured approach for the evaluation and the establishment of the white esthetics helps reducing the risk for unpleasant surprises with the result. Discolored non-vital abutment teeth are a specific challenge with this respect since they may not only be difficult to be masked, but they also may be associated with soft tissue discoloration. Recent studies have evaluated the threshold for the visibility of dental and of mucosal/gingival discoloration. These studies have shown that the human eye detects soft tissue discoloration at similar threshold values as it would detect tooth discoloration. Hence, the pink esthetics is at least as important as the white esthetics. Besides the non-vital teeth implant reconstructions may be challenging with this respect. It has been shown that greyish metallic abutments and metal- ceramic reconstructions lead to dark discoloration of the soft tissue. In conclusion, the selection of the material and the restorative components is of great importance for all types of restorations. Clinicians and technicians need to be aware of the possibilities and also of the limitations of the current restorative options. Aims: Understand the potential of modern reconstructive dentistry with its potential to eliminate complications and achieve a predictable esthetic outcome. Learning objectives: • understand the criteria that influence the esthetics of teeth and of soft tissues •learn about the visibility of discolorations •learn about the restorative options,
their possibilities and limitations •learn to select restorative options for predictable white and pink esthetic.

I8 PREDICTABLE AESTHETIC OUTCOMES IN EDENTULISM. WHEN TO OPT FOR REMOVABLE AND WHEN FOR FIXED PROSTHETIC SOLUTIONS

Emiliano Ferrari
DMD, Tutor for the program IANYUP at New York University, Consultant for Rhein83, Studio dentistico Bologna, Italy

Edentulism, a chronic and irreversible condition, has profound aesthetic, functional, and psychological implications. The choice of therapy and the design of prosthetics, be it fixed or removable, necessitate careful consideration of aesthetic factors such as perioral tissue

support, the nose-labial angle, and incisor positioning. Optimal facial aesthetics are often achieved through the gold standard therapy of an implant-supported overdenture, which not only supports perioral tissues but also restores facial harmony, enhances phonetics, and provides a sense of stability similar to a fixed prosthesis. In cases where tissues are well-preserved, a fixed prosthesis becomes a preferred choice due to its high psychological acceptance by patients. The presentation will delve into the parameters essential for making the right choice between fixed and removable rehabilitation, introducing an innovative protocol for passivating structures in full-arch rehabilitations. The lecture conference will focus on two main areas: Removable Prosthetics, covering implant-retained overdentures, natural teeth, and bar overdenture restorations; and Fixed Prosthetic, exploring the, design considerations, project realization, and exit strategies. Various clinical cases and techniques will be discussed, addressing challenges such as implant divergence resolution and the standardization of protocols for multi-implant system patients. The goal is to provide the comprehensive insights and practical knowledge for optimizing prosthetic outcomes in diverse clinical scenarios.

Oral presentations

O1 USE OF ANTIBIOTICS IN DENTAL IMPLANTOLOGY. IS THERE A REASON FOR A PARADIGM CHANGE?

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One of the main topics in professional and scientific medical community is the rationalization of antibiotics use in both curative and prophylactic indications. There is a justified fear that many antibiotics, if this trend of use continues, will not be effective at all. There are data from the Croatian Institute of Public Health that in the Republic of Croatia, doctors of dental medicine are in second place in the number of prescribed antibiotics. The irrational prescription of antibiotics was strongly influenced by the COVID-19 pandemic, as well as the growing number of forensic medical processes where the guidelines which indicate when and which antibiotic should be prescribed cannot be accurately referred to in expert examinations. Such a situation has contributed to the increase of bacterial resistance to antibiotics, which in turn increases the mortality rate of patients suffering from systemic infection, or sepsis, caused by multi-resistant pathogens. In 2021, the American Heart Association (AHA) published a revision of the guidelines for antibiotic prophylaxis of infective endocarditis in which numerous changes are suggested in the choice of antibiotics, i.e., the use of certain antibiotics is terminated due to excessive side effects or excessive resistance to them. This sparked the revision of other guidelines on the use of antibiotics, especially for prophylactic purposes. Often, the same guidelines that should help doctors choose the appropriate antibiotic for different conditions change frequently and are inconsistent, sometimes confusing clinicians, more than helping them. In dental implantology, doctors are prescribing antibiotic supportive therapy in order to prevent unwanted complications and failures when placing dental implants, even in situations when it is not necessary at all. This situation has led numerous scientists to conduct a meta-analyses for survival of implants and the occurence of early and late complications in relation to antibiotics prescription. Results from these studies showed that certain antibiotics will not be effective in preventing any complications in dental implantology and protecting high-risk patients. That's why we will try to give an answer to whether prescribing antibiotics needs a more rational approach as well as to suggest a revision of the guidelines with regards to the indication, spectrum and dose of antibiotics.

O2 ANTIBIOTIC PROPHYLAXIS IN DENTAL IMPLANTOLOGY - BACK TO THE BASICS

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Antibiotic prophylaxis involves the use of antibiotics before an invasive procedure in order to prevent bacteremia at the site of the procedure or at remote sites. Prophylaxis before invasive dental procedures in high-risk patients refers to patients at risk of developing infective endocarditis, immunocompromised patients, patients at risk of developing osteonecrosis of the jaw, patients with diabetes, etc., and represents an important preventive procedure. Guidelines for antibiotic prophylaxis of at-risk patients, which should help physicians choose the appropriate antibiotic for different conditions, exist but are often changed or vague, confusing clinicians, sometimes more than helping them. There is also a problem with antibiotic prophylaxis of healthy patients before some oral surgical procedures, such as the placement of dental implants. There are no guidelines for such antibiotic prophylaxis, although there have been numerous studies investigating the effect of antibiotic prophylaxis during the placement of dental implants. The results of these studies showed a positive effect on the early survival of implants, but on the other hand, an increased number of side effects and the development of resistance to antibiotics. In order for the doctor to make the right decision on the choice of antibiotic for prophylaxis, it is necessary to know the basic characteristics of the antibiotic and the disease that he wants to prevent. The aim of this lecture is to present the pharmacological properties of antibiotics that are most often used in antibiotic prophylaxis when placing dental implants (amoxicillin, cephalosporins, clindamycin, azithromycin).

O3 ROLE OF ANTIBIOTICS IN PREVENTION OD EARLY COMPLICATIONS IN IMPLANTS SIMULTANEOUSLY PLACED WITH GUIDED BONE REGENERATION

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Use of antibiotics to prevent adverse events in implant dentistry is not clearly evidenced. Up till now clear guidelines for the use of antibiotics when placing dental implants or performing bone regenerative procedures are missing. Unnecessary prescribing of antibiotics can lead to development of bacterial resistant strains and minimise their effectiveness. For that reason this case control study was conducted to see the effectiveness of antibiotics for preventing early complications in patients where implants were placed simultaneously with guided bone regeneration (GBR). In 41 healthy patients (22 femalea and 19 male; average age 56) 65 implants was placed and GBR performed by using deproteinised bovine bone mineral and collagenous membrane fixed with titanium pins. The decision for prescribing antibiotic was made individually for each patient depending on the surgery time. Antibiotics were prescribed in 19 patients comprising the test group. In the rest 22 patients, control group, antibiotics were not used. Early outcome parameters were evaluated for two groups respectively: pain lasting more than 4 days, swelling lasting more than 4 days, acute inflammation, wound dehiscence and early implant loss within 6 weeks after implant placement. The results were statistically evaluated using Levene's test for equality of variances and t-test for equality of means. There were generally six postoperative complications in the control group and one in the test group. Pain was not present more than four days in both groups. Swelling lasting more than four days was observed in two patients, acute inflammation in two patients and wound dehiscence in one patient in the control group. One implant loss happened in the first month after surgery in the control group and one implant in the test group. Differences between both groups were not statistically significant. Within the limitations of this study, we found no statistically significant difference in the number of complications between the two groups. Prescribing of antibiotics to prevent early complications should be critically judged individually for each patient, depending of the patient general health status, duration of surgery and presence of local inflammation.

O4 CONVENTIONAL VS. SHORT IMPLANTS, SURFACE DEVELOPMENT, INDICATIONS AND TECHNIQUES OF BIOLOGICAL PREPARATION FOR SHORT IMPLANTS

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Atrophy of the bone of the alveolar ridge is becoming an increasing challenge in modern oral surgery and implantology procedures. Although there are numerous bone augmentation options, and the technique of raising the floor of the maxillary sinus, in this case, a modern approach of placing "short" implants was selected instead. This sponsored lecture presents cases of elderly patients with completely atrophic edentulism of the lower and upper jaw, and hypertrophy of the attached gingiva in the anterior region of the lower jaw caused by irritation of an inadequate lower complete denture. In the first operation, vestibuloplasty was performed according to the principle of secondary epithelization using blood plasma enriched with growth factors (PRGF). Four weeks after the first procedure, patients underwent a second oral surgical procedure, in which four short implants measuring 4.0 x 5 mm were inserted. Due to the pronounced resorption of the alveolar ridge, the distance from the top of the alveolar ridge to the alveolar nerve in the distal parts of the mandible was between 2 and 3 mm. According to the therapeutic indication, it was decided to display both openings of the mental nerve, and place implants directly in the anterior portion of the mandible in order to avoid nerve damage. After the implant procedure was completed, multi-unit abutments and prosthodontic carriers were immediately placed on the installed implants, and a single-phase polyether impression was taken. A few hours after the procedure, patients received a ready-made fixed-prosthodontic temporary bridge (teeth 36-46) made of acrylic, which was fixed with screws for multi-unit abutments.

O5 ANALYSIS OF THE CORRELATION BETWEEN IMPLANT POSITION DURING IMMEDIATE IMPLANTATION AND THE ACHIEVEMENT OF PRIMARY STABILITY AND OSTEOINTEGRATION.

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Immediate implantation, as a therapeutic method for restoring teeth in the frontal maxilla, reduces the time period for prosthodontic rehabilitation and provides excellent aesthetic results. Over the years, implantation in the anterior maxilla has proven to be a complicated surgical challenge that requires a methodological approach and planning. The form of implantology therapy has clearly defined phases that allow the transfer of information from one phase to another. Implants must be placed in the correct anatomical position, in the space of available bone, which will not violate surgical and biological principles. They must be followed by hard and soft tissues, which represent a support for future prosthodontics. Eighty (80) patients in whom implants were immediately placed in the anterior maxilla augmented with different materials for bone augmentation were analyzed. Postoperatively, the primary stability of the implants was analyzed and measured, as well as the osseointegration after 6 months of implantation. To confirm the obtained results, the bone density was analyzed on the day of implantation and 6 months later. Clinical and paraclinical analyses show that the success of the immediate implant therapy directly depends on the achieved position of the implant in the available bone, but also on the graft materials for the substitution of the missing bone tissue. The achieved primary stability was shown not to depend on the used means for bone augmentation, but rather on the number of bone walls with which the implant achieves mechanical retention with. Osseointegration also depends on these factors, but the success of the augmentation procedure also plays a large role.

O6 DIGITAL FACE BOW IN IMPLANT-PROSTHODONTIC THERAPY

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The digital workflow in implant-prosthodontic therapy represents a modern clinical approach in the dental office and dental laboratory. It is indicated for almost all cases of fixed prosthodontic restorations supported by implants. After placing the implants, their osseointegration and opening, it is not enough to take a digital impression with an intraoral scanner, which registers the position of the implant in relation to the alveolar bone, soft tissues and adjacent and opposite teeth. For the precise and individual creation of occlusal surfaces of fixed implant-prosthodontic restorations, it is necessary to register the position of the upper jaw and the individual movements of the patient's lower jaw by means of a digital face bow. By integrating digital impressions, the position of the upper jaw and the movements of the lower jaw into the digital articulator, a dental technician is able to create occlusal surfaces of fixed implant-prosthodontic restorations with precise static and dynamic contacts according to the concept of implant-protected occlusion, which avoids later imprecise intraoral grinding and mechanical and biological therapy failures. In this lecture, the procedures for using an intraoral scanner (Medit i700, South Korea) and a digital face bow (JMA for Ceramill, AG, Germany) will be presented during fabrication of fixed implant-prosthodontic restorations in daily clinical practice.

O7 DIGITALLY GUIDED IMPLANT-PROSTHODONTIC REHABILITATION IN THE AESTHETIC ZONE

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The absence of teeth in the aesthetic zone, and consequently the loss of supporting structures, can present a complex challenge for dental practitioners. Following tooth extraction, the alveolar bone and adjacent soft tissues immediately begin to adapt and remodel. The labial bone of the upper anterior teeth undergoes relatively rapid resorption due to the loss of blood supply from the trabecular bone. This sequence of events can compromise the final aesthetic outcomes of implant-supported restoration in terms of unpredictable long-term margins of soft and hard tissues in relation to the prosthodontic placement and implant neck. During dental implant placement, detailed clinical examination, adequate diagnostics and planning, implant placement in the correct position, and soft tissue modeling with the emergence profile of temporary prosthodontic replacement are of great importance. Rehabilitation of the aesthetic region involves several steps, such as soft and hard tissue augmentations, dental implant placement, fabrication of immediate provisionals, and final prosthetic rehabilitation of missing teeth. Digital planning and surgical templates could help overcome this issue. With the assistance of digital technology, it is possible to pre-plan the final work, prepare an immediate provisional that can be attached immediately after the operation, and print a surgical template to ensure precise implant placement. We will present a case of a 27-year-old patient who underwent horizontal bone augmentation in the first phase one year ago using a combination of autologous bone and xenograft covered with a magnesium membrane, and in the second phase, implant-prosthodontic rehabilitation. Digital planning of the implantation procedure was carried out using coDiagnostiX® software (Dental Wings Inc., Montreal, QC, Canada), based on CBCT imaging and intraoral scanning using 3Shape TRIOS 3. A surgical template was made for a fully guided protocol for the BLX SLActive RB implant (Straumann Group, Basel, Switzerland) at position 22 and an immediate provisional with a pontic. After four months, the patient received the definitive prosthodontic replacement. Implant management based on previous 3D analysis and planning has shown satisfactory results both functionally and aesthetically, without encountering serious complications during or after treatment.

O8 IMPLANT-PROSTHODONTIC REHABILITATION OF PARTIALLY EDENTOLOUS JAW: FROM BONE AUGMENTATION TO IMPLANT PLACEMENT AND SOFT TISSUE RECONSTRUCTION – A CASE REPORT

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The implant-prosthodontic rehabilitation of partially edentulous patients with adequate bone and soft tissue is a predictable and safe therapeutic protocol in contemporary dental medicine. The loss of bone tissue and architectural changes in soft tissues significantly impact the feasibility and outcomes of implant-prosthodontic therapy. In such cases, the regeneration of bone defects through different augmentation techniques is necessary for the placement of dental implants. Furthermore, soft tissue plays a crucial role and greatly contributes to the long-term health of peri-implant mucosa and the subsequent stability of the hard tissue around the implants. A case of explantation of failed dental implants in the distal region of the maxilla and subsequent regeneration of bone and soft tissues, followed by the placement of dental implants in the same region, will be presented. A 60-year-old patient underwent implant-prosthetic therapy in the upper jaw. Clinical examination and CBCT analysis revealed that the implants at positions 24, 25, and 26 were indicated for explantation. The therapy plan included the explantation of these implants and simultaneous augmentation of bone defects using a mixture of autologous bone and xenogenic bone biomaterial, along with a resorbable magnesium NOVAMag® membrane (Botiss biomaterials GmbH, Berlin, Germany). Six months after the surgery, three NobelParallel Conical Connection implants (Nobel Biocare AB, Gothenburg, Sweden) were placed in positions 24, 25, and 26. Two months after implant placement, the keratinized mucosa width was expanded using the "strip" technique with a free gingival graft and Mucoderm® (Botiss biomaterials GmbH, Berlin, Germany) xenogenic collagen matrix. Two months after keratinized mucosa widening, a long-term temporary prosthodontic restoration made of PMMA was fabricated.

O9 ALVEOLAR BONE REGENERATION PERFORMED WITH A NEW RESORBABLE MEMBRANE WITH ENHANCED MECHANICAL PROPERTIES

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Guided bone regeneration is the best documented technique for alveolar bone regeneration. This surgical technique is characterized by the application of a membrane which has the purpose to exclude non-osteogenic cells from interfering with the bone regeneration process. Today, there are several different membranes developed for the guided bone regeneration technique on the market. All the membranes can be clustered into two different groups: resorbable and non-resorbable. Each group is characterized by their own advantages and disadvantages. Resorbable membranes are less demanding to use, they do not need to be removed from the surgical site and have a lower exposure rate. Despite that, they have some disadvantages, bad mechanical properties which can lead to bone graft dislocation and the loss of the surgical site. On the other hand, non-resorbable membranes possess better mechanical properties but have a higher exposure rate and require an additional surgical procedure to be removed from the surgical site. To overcome some of the disadvantages of resorbable and non-resorbable membranes, a new type of membrane was developed. The new membrane possesses the advantages of both groups: it is resorbable and has improved mechanical characteristics comparable to non-resorbable titanium reinforced membranes.

O10 VERTICAL AUGMENTATION OF THE POSTERIOR MANDIBLE WITH A PTFE MEMBRANE

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Vertical augmentation of the alveolar ridge is definitely one of the biggest challenges in bone regeneration of the alveolar ridge. Due to their high invasiveness and very slow revascularization, which can take up to 7 years, bone blocks are rarely the method of first choice for vertical augmentation. Guided bone regeneration using a PTFE membrane with a titanium construction has shown excellent results for years, but requires skill due to its' complicated fixation. The gold standard in guided bone regeneration is still a combination of autogenous bone for osseoinduction and osteogenesis, and xenogeneic bone material for osseoconduction in a ratio of at least 50-50%, and for larger augmentations, a higher percentage of autologous bone. We will present a case with a 35-year-old female patient with a vertical bone defect of the posterior mandible wanting an implant-prosthetic rehabilitation. The dimensions of the residual ridge were insufficient for implant placement without vertical augmentation. Guided bone regeneration was performed using a PTFE membrane with titanium construction, autologeous bone and xenogeneic bone material. After 9 months a vertical gain of 4 mm was measured compared to the initial situation. In the second stage, the membrane was extracted, two implants with a diameter of 4.3 x 8 mm were placed. A smear layer of newly formed bone was minimal, so there was no need for additional bone augmentation. A xenogenic collagen matrix was used for soft tissue thickening. After two months of healing, keratinized gingiva was transplanted for soft tissue stability and a better emergence profile. The prosthetic phase followed after 2 months and monolithic zirconium oxide crowns with titanium bases were made according to the guidelines of the zero bone loss concept.

O11 OSTEOGENIC POTENTIAL OF INJECTABLE ALLOPLAST AND XENOGRAFT IN SOCKET PRESERVATION: HISTOLOGICAL STUDY IN HUMANS

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This research aimed to assess both qualitative and quantitative histological alterations in bone biopsies six months post socket preservation utilizing injectable biphasic calcium phosphate (I-BCP) and anorganic bovine bone (ABB). Following atraumatic tooth extraction, participants were randomly assigned to a test or control group. The test group received I-BCP, while the control group received ABB for socket preservation. Bone biopsies were obtained from the regenerated bone using a trephine bur during implant bed preparation after a six-month healing period. Qualitative and quantitative histological analyses were conducted on the bone biopsies. A total of 40 biopsies were examined, with 20 in the test group and 20 in the control group. Both biomaterials exhibited effective integration into the surrounding tissue, with no signs of inflammatory tissue reaction. Histomorphometric analysis revealed no significant difference in the mean percentage of newly formed bone and residual biomaterial between the groups. However, the mean percentage of soft tissue in I-BCP biopsies was significantly higher than in ABB biopsies. In conclusion, the study confirmed the safety of using I-BCP for socket preservation and demonstrated satisfactory regeneration of bone tissue.

O12 SUBPERIOSTEAL IMPLANTS IN THE SEVERELY ATROPHIC MAXILLA - INDICATIONS & PROCEDURES

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In the most severe cases of alveolar bone resorption in the maxilla, there is not enough bone to insert classical intraosseous dental implants for denture support. In these patients, a viable solution are subperiosteal implants. These implants are individually prefabricated, i.e. 3D printed on the basis of the patient's CBCT or CT scan. They are designed so as to align perfectly with the bone and thus fitting stably on the resorbed alveolar crest, expanding onto the palate medially and onto the anterior surface of the maxilla laterally. They are additionally fixed in the same way and in the same places as osteosynthetic plates used in trauma surgery: paranasally and in the body of the zygoma, using monocortical screws. On top of the alveolar crest, subperiosteal implants project through the keratinized mucosa with 4 - 6 multiunit abutments (MUA). Thus, the hybrid denture is screw-retained via MUAs and completely stable. Minimal intraoperative bone reshaping is required. Immediately after implant insertion and soft tissue closure, impressions are taken, and the provisional fixed denture is made within 1-2 days.

O13 MARGINAL PERI-IMPLANT BONE LOSS 10 YEARS AFTER IMPLANT PLACEMENT - CLINICAL REPORT

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The goal was to evaluate marginal peri-implant bone loss 10 years after implant placement. A total of 22 implants were placed in 10 patients included in the study, out of which six were female and four male. The implants were unloaded for 3-8 months after surgery (conventional loading) and a two-phase surgery was performed. The shoulder of the implant was surgically placed on the cortical surface of the alveolar bone. Radiographs were taken before the prosthodontic treatment (t0) and 10 years after (t1). Eight-teen implants were prosthodontically carried out as single crowns and four implants supported two complete prostheses in the lower jaw. We measured a distance between the shoulder of the implant and the alveolar compact on radiographs taken at t1 and compared them with the measurements obtained on the radiographs taken at t0. Average bone loss measured on radiographs around implants at t1 was 1.29 mm. We did not notice any signs of inflammation around the implants, nor peri-implantitis. All implants included in this study are still fully functional after 10 years. Based on the obtained results, we conclude that the loss of marginal bone around the implants in a period of 10 years was less than 1.5 mm.

O14 WEAR AND TEAR DURING 20 YEARS

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A female patient was implanted two dental implants (Astra, 3.5 x 11.5 mm) in the spring 2005 at the Department of Maxillofacial and Oral Surgery, University Hospital Dubrava. Three months later total dentures were designed at the Department of Prosthetic Dentistry, University Hospital Dubrava. Retention for lower dentures was achieved with two ball attachments. Since 2005, four total dentures were made, all supported with ball attachments on dental implants. During this period, every five years a panoramic x-ray was taken and no bone loss was noticed. We found similar cases in the literature that reported ball attachments wear and tear after time. This case is particularly interesting due to a long follow-up at our Department. The first denture, designed in 2005, was made using Genius Inpen Dentsply Sirona teeth, and later on Phonares II Ivoclar composite high-end teeth were used for which we believe delivered high aesthetics and durability. Many patients visit our Department and in thirty years of experience with ball attachment supported dentures, we have not obtained such a successful long-term follow-up as we did with this case that will presented in our lecture.

O15 THE EFFECT OF BACTERIAL PLAQUE ON PERIIMPLANT SOFT TISSUE

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The aim of this three-year clinical study was to determine periimplant soft tissue reaction on the removal and recolonization of bacterial plaque and appearance of bacterial morphotypes proportions after the improvement of the patient's oral hygiene. The Clinical parameters GI, PI and PD were evaluated at baseline, 6, 12, 18, 24, 30 and 36 month after debridement. Plaque samples were examined by Dark Field microscopy method. Bacterial morphotypes were classified as: potentially non-pathogenic (cocci, nonmotile rods – Type 1) and potentially pathogenic (motile rods, spirochaetes and others – Type 2). 18 subjects (9 male and 9 female, range from 22-62 years, mean age at 36 y) with 30 Ti implants were randomly assigned into: test and control group with 15 implants each. Professional plaque removal was performed at baseline, after initial clinical parameters and samples determination. Subjects in Test group was advised to start using the powered toothbrush in order to improve oral hygiene, while the control group remained using a manual toothbrush. Results showed a significant decrease of GI and PI, nonsignificant decrease of PD and a significant increase of Type 1 morphotypes six month after debridement in both groups. 36 month, proportions of Type 2 morphotypes were significantly higher compared to baseline and periimplant mucosa showed a significant increase in GI, PI and PD values in the control group. In 36 months bacterial morphotypes remained at the same level in

the test group, and the results showed a significant decrease of GI, PI and PD compered to the control group. Improvement in periimplant soft tissue conditions was a result of decreasing the pathogenic morphotypes in plaque.

O16 COMPARISON OF DIFFERENT DECONTAMINATION PROCEDURES FOR DENTAL IMPLANTS: AN *IN VITRO* STUDY

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Polymicrobial biofilms on the exposed dental implant surfaces are considered the main etiologic factor for the development of periimplantitis. Among the most challenging but essential procedures in the treatment of periimplantitis are biofilm removal and implant surface decontamination. The objective of this study was to compare the effectiveness of four different decontamination procedures for removing *Acinetobacter baumannii* and *Staphylococcus aureus* biofilms *in vitro*. To form a biofilm, 75 dental titanium implants (GC Aadva Standard Implants, GCTech.Europe GmbH, Breckerfeld, Germany) were contaminated with a suspension containing *A. baumannii* and *S. aureus* and randomly divided into five groups (n = 15). Implants from the negative control group received no treatment; the positive control group was treated with a 0.2% chlorhexidine solution (Curasept ADS 220, Curaden AG, Kriens, Switzerland); group 1 was treated with a chitosan brush (Labrida BioCleanTM, Labrida AS, Oslo, Norway); group 2 was treated with a chitosan brush and a 0.2% chlorhexidine solution; and group 3 was treated with an electrolytic device (GalvoSurge, GalvoSurge Dental AG, Widnau, Switzerland). The number of viable microbes in each sample was determined by the colony-forming unit (CFU) count, and statistical analyses were performed. When compared to the negative control group, all decontamination procedures decreased CFU. The electrolytic cleaning method is more effective at decontaminating the implant surface than the other three procedures. Additional studies are planned to examine the effectiveness and differences of the aforementioned decontamination procedures.

O17 INNOVATIONS IN DENTAL PROSTHETICS

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The company Neo Dens and its brand Neo Lab Milling Center stand out for their innovative approach in the development and production of dental prosthetics products. Focusing on both individual and serial production, the company emphasizes the importance of collaboration among dental practitioners, dental technicians, and mechanical engineers in the product development process. In the presentation by Neo Dens and Neo Lab Milling Center, a specific case will be presented where a new implant-prosthetic solution was developed upon the request of a dental practitioner – the All on X provisional restoration for immediate implant loading reinforced with titanium alloy. Research on client needs, literature review, and assessment of current techniques form the basis for developing new products. Applying an interdisciplinary approach, which integrates knowledge from both dental medicine and mechanical engineering, is essential in generating prototype and alternative solutions. This approach was utilized in the development of the product and technique for fabricating provisional restorations reinforced with titanium alloy, thereby prolonging the durability of the provisional restoration, and reducing the time required for complete therapy implementation. This specific example illustrates the dedication of Neo Dens and Neo Lab Milling Center to adapting their products and manufacturing processes to meet the individual needs of patients. It also highlights their ability to innovate and collaborate to advance the dental industry and achieve the highest standards of functionality and aesthetics.

Poster presentations

P1 CLASSICAL PROSTHODONTIC APPROACH WITH PREPROSTHODONTIC AND MUCOGINGIVAL SURGERY AS AN ALTERNATIVE TO DENTAL IMPLANT TREATMENT

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Introduction: Dealing with anterior teeth loss presents a challenge to every clinician. Although this is often an indication for dental implant treatment, in this case, the classical prosthodontic solution was preferred, with emphasis on good surgical preparation and appropriate management of the soft and hard tissues. Materials and methods: After analyzing the clinical situation, radiological findings, and the patient's wishes, a therapy plan was created. The first phase involved pre-prosthetic preparation, which included endodontic treatment of teeth 13, 14, 22, 23, and 25, as well as initial periodontal treatment. Teeth 21, 22, 23, and 24 were reinforced using composite posts. Due to the high smile line and the difference in gingiva levels between the left and right incisors, it was decided to extract tooth 12 and perform a partial extraction of the tooth 11. During the extraction of tooth 12, the mIVAN technique was performed, which involved placing a collagen membrane buccally, filling the gap with a mixture of autologous bone and xenograft, and closing the wound with a pedicled flap. After partial extraction, the gap in region 11 was also grafted, and a CTG was taken from the left side of the palate and placed over the region 11. The wound was closed using resorbable sutures. A transparent splint and a laboratory provisional were made for a more effortless wound healing. After ten weeks, surgical gingivectomy was performed on teeth 21 and 22, and a new laboratory provisional was made. Results: After the soft tissues were stabilized, the prosthodontic phase was carried out, wherein full zirconia bridges were created between teeth 15 to 25 and 35 to 45. Conclusion: Preprosthodontic surgery, in synergy with a classic prosthodontic approach, is an effective way to treat tooth loss in the aesthetic area with satisfactory results.

P2 IMPLANT-PROSTHETIC THERAPY OF A PATIENT WITH EXTERNAL APICAL ROOT RESORPTION AFTER ORTHODONTIC TREATMENT

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Purpose: External apical root resorption (ARR) is an undesirable complication of orthodontic treatment that results in permanent loss of tooth structure from the root apex. The etiology of ARR is multifactorial; these factors consist of individual biologic characteristics, genetic predisposition and the effect of orthodontic forces. Risk factors for ARR can be categorized as patient-related and treatment-related. Patient-related factors include genetics, systemic factors, asthma and allergies, chronic alcoholism, the severity of malocclusion, tooth-root morphology, a previous history of root resorption, alveolar bone density, root proximity to cortical bone, endodontic treatment, and patient age and sex. Orthodontic treatment-related risk factors include the treatment duration, magnitude of applied force, direction of tooth movement, amount of apical displacement, and method of force application. Case presentation: This clinical report presents the diagnosis, treatment planning and oral rehabilitation of a young woman with failing dentition in the anterior maxilla due to orthodontically induced root resorption. The patient's chief complaint was mobile maxillary anterior teeth 2 years after discontinuing orthodontic treatment. Radiographic and clinical evaluations revealed a grade III mobility from the right to the left lateral incisor. Due to a hopeless prognosis, extraction of the maxillary anterior teeth was planned, followed by grafting procedures. Two implants were immediately placed in the fresh sockets of the lateral incisors, and a provisional appliance was delivered to contour the soft tissues involved. The final restoration consisted of a four unit implant-supported bridge in full zirconia. Conclusion: Well-planned immediate implant therapy and zirconia restorations can successfully replace mobile teeth with severe root resorption caused by external surface resorption caused by the discontinued orthodontic treatment.

P3 ANATOMIC VARIATIONS OF THE MANDIBULAR CANAL - A CASE REPORT OF INADEQUATE ANALGESIA DURING DENTAL IMPLANT PLACEMENT

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The mandibular canal is an anatomical bony structure in the mandible through which the inferior alveolar nerve and inferior alveolar artery pass, providing branches for the innervation and vascularization of teeth and surrounding structures. Accordingly, the mandibular canal is an important structure for providing local conductive anesthesia for the lower jaw in implant therapy, orthognathic surgery, and extraction of lower teeth, especially impacted molars. Anatomic variations of the mandibular canal can cause difficulties in performing the above-mentioned procedures. Variations include bifid mandibular canals, double mental foramina, and accessory mandibular canals. The presence of accessory or nutrient branches of the mandibular canal can cause partial analgesia during conductive anesthesia, and likewise, can cause postoperative pain and bleeding after implant placement or tooth extraction due to blood vessels and nerves passing through these structures. A case of an accessory canal in the area of the lower first left molar causing difficult analgesia during dental implant placement will be presented.

P4 IMMEDIATE IMPLANTATION AND PROSTHODONTIC REHABILITATION IN THE UPPER CENTRAL INCISORS REGION

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Aim: Presentation of temporary and final prosthodontic solution following immediate implant placement after extraction of upper central incisors. Case report: CBCT images of a 38-year-old female patient revealed periapical inflammatory processes following apicectomy of teeth 11 and 21 with preserved bundle bone. A fistula linked to tooth 11 was clinically visible. Zirconium oxide crowns on the central incisors were not in occlusal contact, and their cervical gingival height exceeded lateral incisors by more than 2 millimetres. Due to the unfavourable prognosis of an re-apicectomy, both central incisors were extracted and two MIS C1 B+ implants (MIS Implant Technologies Ltd., Bar Lev, Israel), 4.2 mm wide and 13 mm long, were immediately placed in the extraction sockets. Xenograft granules sized 0.25-1 mm (Bio-Oss, Geistlich, Switzerland) and collagen membrane (Bio-Gide, Geistlich, Switzerland) were used for augmentation around the implants. Using tent-pole technique two 5 mm high healing abutments were placed to preserve the dimensions of the soft tissues. Temporary crowns were made using Protemp 4 (3M ESPE, Seefeld, Germany) based on alginate impression taken before extraction. Ribbond fibre (Ribbond Inc., Seattle, WA, USA) was inserted into the palatal retention on the temporary crowns and bonded to the adjacent intact teeth. After a period of 6 months, the existing provisional restoration was replaced by two single temporary screw-retained crowns on MIS temporary PEEK cylinders. After two weeks, following the formation of the emergence profile, digital impression was taken with Primescan (Dentsply Sirona, Mannheim, Germany). Two single zirconia ceramic crowns were made and cemented to a zirconium oxide abutment on a titanium base. Conclusion: Cautious planning, extracting teeth at the right time along with immediate implantation and augmentation ensure preservation of hard and soft dental tissues. Various provisional solutions during the rehabilitation create optimal conditions for prosthodontic rehabilitation in the aesthetic zone.

P5 IMMEDIATE IMPLANT LOADING AFTER GUIDED BONE REGENERATION IN THE AESTHETIC ZONE - CASE REPORT

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Introduction: Prosthetic rehabilitation of missing teeth in the aesthetic zone can be challenging for most clinicians. Red-white aesthetics are a priority when planning treatment in the intercanine sector. Achieving satisfactory aesthetics is very difficult after tooth loss due to anatomical changes caused by alveolar ridge resorption. We present a complex clinical case of a patient who lost an upper central incisor. Case report: A healthy twenty-eight-year-old man came to us with the desire for an immediate and aesthetic replacement of the missing upper left central incisor. Tooth 21 was extracted two months ago due to a vertical root fracture. Clinical examination and CBCT imaging showed a large loss of periodontal tissues in region 21 - a large buccal wall defect and vertical resorption of the alveolar ridge. We decided to place a dental implant and simultaneously reconstruct the alveolar ridge with guided bone regeneration (GBR), for which we used deproteinized bovine bone mineral (DBBM) and collagen membrane (CM). After removing the connective tissue, an implant was placed (Ankylos C/X A14 Dentsply-Sirona) and alveolar ridge augmentation was performed using a xenogeneic graft (Geistlich Bio-Oss). A collagen membrane (Geistlich Bio-Gide), which we fixed with two titanium pins prevented the ingrowth of connective tissue into the defect during healing process. Good primary stability of the implant allowed immediate loading. Therefore, the surgical treatment was followed by cementation of a CAD/CAM fabricated provisional crown. In this way, we prepared the conditions for optimal formation of peri-implant tissues and made our patient smile. After five months, the patient was prosthetically rehabilitated with a zirconia crown. Conclusion: Guided bone regeneration is an alveolar ridge augmentation technique successful in achieving excellent and predictable results, even in cases of challenging reconstructions in the intercanine sector.

P6 BARP TECHNIQUE FOR SOCKET PRESERVATION - FROM EXTRACTION TO PROSTHETIC REHABILITATION

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Alveolar ridge preservation, as a successful method for maintaining bone after tooth extraction, has been used for many years. Various techniques are developed aiming to reduce the osteoclastic effect and promote osteogenesis in the area of the extracted tooth. One of the techniques, used in the presented case, is called Biologically-oriented Alveolar Ridge Preservation (BARP). The case report describes a 52-year-old female patient who has been referred at the Department of Oral Surgery, University Hospital Centre Zagreb due to pain in tooth region 25. Clinical and radiological examination diagnosed a vertical root fracture, indicating extraction. Following atraumatic tooth extraction using a piezoelectric surgical approach, a resorbable collagen sponge (ColaFleece, Botiss) was placed in the apical third of the socket (4-5 mm), and xenogenic bone graft (Cerabone Plus, Botiss biomaterials) was placed in the coronal part of the socket up to the level of preserved alveolar bone. Subsequently, the exposed bone layer was covered with a resorbable, sugar-fiber-reinforced membrane for stabilization of the graft and fixed with 5-0 monofilament sutures (Prolus, Lotus). One year after surgical procedure (due to delayed follow-up), an Aadva Regular implant (GC Corporation, Japan) 4.0x10 mm was placed. A follow-up radiograph, after implant placement, showed no vertical reduction of the bone ridge compared to the initial situation when the healing abutment was placed. Ten days later, an prosthodontic restoration was placed on an individualized abutment. Layering materials presented in the BARP technique enables physiological bone healing in the apical and middle parts of the post-extraction socket, as well as the enhancement of vertical and horizontal dimensions in the coronal part, consequently ensuring proper soft tissue healing. This creates ideal conditions for implant placement and longevity of subsequently placed prosthetic restorations.

P7 UNRAVELLING DELAYED COMPLICATIONS FOLLOWING DENTAL IMPLANT PLACEMENT - A CASE REPORT

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Background: Dental implant placement is a treatment option, offering patients a long-lasting solution for replacing missing teeth. Despite high success rates, complications can occur, presenting challenges for both patients and clinicians. Issues such as wound infection or early implant loss and late complications as peri-implantitis are the most common. However, unexpected rare complications like osteomyelitis can lead to severe health consequences if not treated properly. This case underscores a series of issues following implant placement, highlighting the importance of early diagnosis and treatment. Case presentation: Medical history of a 62 year-old male revealed presence of pain, bleeding and suppuration on probing around the implants replacing teeth 32 and 42. They were inserted three weeks ago. Clinical and radiographical examination confirmed the diagnosis of peri-implantitis and severe periodontitis around tooth 43. The implants were removed and local debridement was performed combined with antimicrobial therapy. The patient developed swelling of the chin area two weeks after the initial treatment. Tooth 43 and a small sequester were removed and combined with antibiotic treatment. After two weeks a fistula from the extraction site and clinically detectable pathologic mobility in right parasymphiseal region was present. CBCT was performed and signs of a pathologic fracture were found. Patient was immediately referred to a hospital for a surgical intervention combined with hyperbaric oxygen. Discussion: The occurrence of complications depends on host response, microbial colonisation, anatomical considerations and prosthetic design. Treatment of these complications is usually accompanied by several interventions, prolonged antimicrobial therapy and even hospitalization. Conclusion: Preoperative evaluation of the patient's health, recognizing the risk factors, choosing the optimal treatment and regular postoperative monitoring are important for minimizing the possibility for complications. On the other hand early recognition and proper treatment of complications is crucial for reducing a negative impact on the patient's quality of life.

P8 SOLVING CHALLENGES: A CASE REPORT OF SCREW AND ABUTMENT FRACTURE IN IMPLANT-PROSTHODONTIC THERAPY

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Introduction: The screw and abutment fracture in implantology represents an adverse event that can impact the stability and function of dental implants. The issue may arise from excessive force during placement or creation of inappropriate loading forces during chewing. Case report: A patient presents to the dental clinic four years after the placement of a dental implant in the location of first mandibular left molar, holding the crown of the tooth and a screw piece in his hand. After radiological analysis, a screw fragment was observed still securely fastened in the implant. After several attempts, the screw was successfully removed using an ultrasonic scaler and replaced with a new one. The crown was reattached using a replacement screw. After a few months, the patient reports an unusual sensation during chewing and mentions loosening of the crown on the implant. Upon

arrival to the clinic, the implant abutment connection was examined. The crown was removed, revealing a fracture of the abutment fragment firmly embedded in the implant. The fragment was successfully removed with a probe. A new crown was fabricated for the new abutment, fixed with a new screw, and the occlusion was adjusted. Conclusion: The challenge has been successfully resolved and the follow-up X-ray clearly showed a proper abutment-implant relationship, firmly secured by the screw.

P9 VERTICAL ALVEOLAR RIDGE AUGMENTATION WITH A NEW DENTAL BIOMATERIAL-CASE REPORT

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Vertical alveolar ridge augmentation using guided bone regeneration is a technically sensitive procedure. Reliable performance requires space creation and maintenance using a stable adaptable membrane in combination with a bone graft that can safely build a robust biological structure, mimic native tissues and provide sufficient volume. Nonresorbable titanium-reinforced protective membranes meet these criteria and have been proposed to achieve successful vertical alveolar ridge augmentation in large defects. For augmentation, a combination of autologous and xenogeneic bone or the use of allografts, which are increasingly available today, is ideal. The use of resorptive membranes is limited mainly to horizontal augmentation due to insufficient stability and rigidity in vertical augmentation. The goal of new dental biomaterial based on magnesium is to provide better properties in the form of protection against collapse and initial stability, while avoiding complications and additional procedures associated with non-resorbable materials. We present a case of a 47-year-old female patient, with a clear medical history, treated at the Department of Oral Surgery due to an advanced peri-implantitis in the region 35-37. Nine years ago, the patient underwent augmentation of the atrophic edentulous alveolar ridge with an autologous bone block, followed by implant-prosthodontic rehabilitation. In August 2023, after clinical and radiological analysis, explantation of the implants was performed and the remaining ridge was of unsatisfactory vertical dimensions. We decided to perform a vertical augmentation to enable implant-prosthodontic rehabilitation. Augmentation was performed with a combination of autologous and xenogeneic bone with the application of PRGF covered with a NOVAMag membrane and fixation screws (Botiss dental GbmH, Berlin, Germany). The postoperative course went well, without complications. Five months after surgery, control radiographs were taken that showed satisfactory vertical dimension of the alveolar ridge. It has been scientifically confirmed that biomaterials based on magnesium are biocompatible and enable good bone tissue regeneration with adequate soft tissue healing. A magnesium-based membrane has a similar barrier function as the collagen membrane, but also has additional space-maintaining properties as the titanium membrane.

P10 AUTOLOGOUS SOFT TISSUE GRAFT AROUND A DENTAL IMPLANT – A CASE REPORT

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The quantity and quality of soft tissue around dental implants are crucial for achieving adequate biological width around dental implants, long-term bone stability and achieving a natural appearance. Various surgical techniques are used to improve the volume and quality of soft tissue, including autologous subepithelial connective tissue grafts, free gingival grafts, and various xenogeneic substitutes for autologous transplants. Today, the gold standard for increasing the volume of soft tissue around dental implants involves the use of autologous subepithelial connective tissue grafts, which are often associated with increased morbidity at the donor site. Mucograft®, Fibro-Gide®, and Mucoderm® are xenogeneic collagen matrices derived from porcine dermis that act as scaffolds for the growth of new soft tissue around teeth and dental implants, aiming to reduce the morbidity of donor sites of autologous transplants. Autologous transplants offer an advantage due to their biocompatibility and good integration with surrounding tissues. Through a case presentation of augmentation with autologous subepithelial transplant around a dental implant, we will demonstrate the possibilites of soft tissue augmentation and its' significance for the long-term stability of soft and hard tissue around implants. Also, by increasing the volume of soft tissue, the aesthetics and contours of soft tissue are improved, as is the function of the implant-prosthodontic restoration.