COVERAGE OF MULTIPLE RECESSIONS USING THE TUNNEL TECHNIQUE AND A COLLAGEN MATRIX IN THE MAXILLA OR MANDIBLE: A 6 MONTH STUDY

M. CIEŚLIK-WEGEMUND1*, V. CANDOTTO2*, B. WIERUCKA-MŁYNARCZYK1, M. TANASIEWICZ3, Ł. GILOWSKI1, M. DUDA5, D. LAURITANO6 and Z. ORMIANER7

1Department of Periodontal and Oral Mucosa Diseases, Department of Conservative Dentistry with Endodontics, School of Medicine with the Division of Dentistry in Zabrze, Medical University of Silesia in Katowice, Poland; 2Department of Biomedical, Surgical and Dental Sciences, University of Milan, Milan, Italy; 3Department of Conservative Dentistry with Endodontics, School of Medicine with the Division of Dentistry in Bytom, Medical University of Silesia in Katowice, Poland; 4Department of Pharmacology, School of Medicine with the Division of Dentistry in Zabrze, Medical University of Silesia, Poland; 5Duda Clinic College of Dental Medicine, Katowice, Poland; 6Department of Medicine and Surgery, University of Milan-Bicocca, Milan, Italy; 7Department of Oral Rehabilitation, The Maurice and Gabriela Goldschleger School of Dental Medicine, Tel Aviv University, Tel Aviv, Israel

*These authors contributed equally to this work.

Multiple recession defects in the dentition of the patients are routinely encountered in clinical practice and as such present a challenge for clinicians. Periodontal plastic surgical procedures aim to restore both esthetics as function in periodontal tissues. The objective of this study was to evaluate and compare the clinical efficacy of using a tunnel technique with a collagen matrix to cover multiple recessions in the maxilla or mandible. Fourteen patients were enrolled in the study. Patients in the maxilla-group and mandible-group were treated with xenogeneic collagen matrix using the tunnel technique. Clinical recordings were obtained at baseline and after 3 and 6 months. The percentage of average recession coverage (ARC), the percentage rate of patients with complete coverage of all recessions (CRC-1) and the percentage rate of complete coverage of recession defects (CRC-2) were evaluated after 3 and 6 months after the surgery. Statistically significant differences were observed in every parameter except probing depth between the baseline values compared to the values 3 and 6 months after the procedure in both groups. The mean ARC 6 months after the procedure was 96.8% in the maxilla and 81.3% in the mandible. At 6 months after the procedure, a complete root coverage was obtained in 2 out of 9 patients and 31 out of 39 recessions (79%) in the maxilla and 0 out of 5 patients and 10 out of 20 recessions (50%) in the mandible. A collagen matrix combined with the tunnel technique led to a satisfactory ARC, CRC-2 and resulted in an unsatisfactory CRC-1.
THE EFFECT OF GINGIVAL WALL LOCATION ON THE MARGINAL SEAL OF CLASS II RESTORATIONS PREPARED WITH A FLOWABLE BULK-FILL RESIN-BASED COMPOSITE

P. SEGAL1*, V. CANDOTTO2*, A. BEN-AMAR1, M. EGER1, S. MATALON1, D. LAURITANO3 and Z. ORMIANER1

1Department of Oral Rehabilitation, the Maurice and Gabriela Goldschleger School of Dental Medicine, Tel Aviv University, Tel Aviv, Israel; 2Department of Biomedical, Surgical and Dental Sciences, University of Milan, Milan, Italy; 3Department of Medicine and Surgery, University of Milan-Bicocca, Milan, Italy

*These authors contributed equally to this paper.

SureFil SDR is a flowable resin-based composite that allows a single incremental bulk placement. The marginal seal of SureFil SDR at the gingival margins of class II restorations located apical to the cemento-enamel-junction (CEJ) has not been adequately evaluated compared to those located occlusal to the CEJ. Forty class II cavities were prepared in human molars. The gingival margins of 20 preparations were located 0.5 mm occlusal to the CEJ, and the other 20 preparations were located 0.5 mm apical to the CEJ. The cavities surfaces were bonded with XenoV dental adhesive and filled with SDR in one bulk increment up to 4 mm, after which they were covered with CeramX. The teeth were subjected to thermo- and load-cycling, and their gingival margins were exposed to 0.5% basic-fuchsin solution. The specimens were sectioned mesio-distally and scored for microleakage. A Wilcoxon test for pairwise comparison was performed to determine significance. Dye penetration was observed in 30% of the 20 restorations with cavo-surface margins located occlusal to the CEJ and in 55% of the 20 restorations with cavo-surface margins located apical to the CEJ. The bulk-fill flowable resin base SureFil SDR with XenoV dental adhesive provided a better marginal seal in class II restorations with gingival margins above the CEJ compared to restorations with gingival margins below the CEJ. SDR should not be recommended for class II cavity preparations with gingival margins located below the CEJ.
REHABILITATIONS WITH IMMEDIATE LOADING OF ONE-PIECE IMPLANTS STABILIZED WITH INTRAORAL WELDING

M. E. PASQUALINI1*, D. LAURITANO2*, F. ROSSI3, L. DAL CARLO4, M. SHULMAN5, F. MEYNARDI 6, D. COLOMBO7, P. MANENTI8, G. COMOLA9 and P. ZAMPETTI10

1MD DDS Private practice Milano, Italy; 2Department of Biomedical, Surgical and Dental Sciences, University of Milan, Milan, Italy; 3MD DDS Private Practice Busto Arsizio, Italy
4DDS Private Practice Venezia Italy; 5Private practice, Clifton, NJ. USA; 6Private Practice Mondovì Italy; 7Private Practice Como, Italy; 8Private Practice Bergamo, Italy; 9Università Alfonso X El Sabio Madrid, Spagna; 10Università di Pavia, Italy

*These authors equally contributed to this paper.

The authors present an implant prosthesis procedure that uses screws on one-piece implants connected with a titanium pin at their abutment level and one supporter titanium bar in order to guarantee immediate stabilization. These can be implanted and fitted with customized temporary crowns in a single surgical procedure, restoring function and aesthetics and consenting recovery of the bone deficit with reduced healing times and limited patient discomfort. One-piece wide-diameter titanium screw implants with thread measurements of 2.1 and 2.6 mm (smaller diameter) up to diameter of 4.5 mm with one abutment of 2.0 and 2.5 mm respectively, were positioned and splinted by intraoral welding. One-piece titanium implants were used together with a pin (needle) titanium implant as supporting structure to achieve deep stabilization. The Scialom-like pin has a diameter of 1.2 mm and it is long enough to reach deep cortical bone that is “bicorticalism”. The One-piece implant is tightly connected to the needle implant by means of Mondani intra-oral welding technique. In severely atrophic anterior maxilla, the use of this method allows the immediate loading of a fixed resin prosthesis soon after surgery. These implants yielded satisfactory functional and aesthetic outcome in bone-deficient upper anterior sectors, without invasive regenerative procedures. The low invasiveness of this approach also consents rapid healing, reduced biological burden and greater patient benefit.
THE IMPORTANCE OF OCCLUSAL TRAUMA IN THE PRIMARY ETIOLOGY OF PERIODONTAL DISEASE

F. MEYNARDI¹*, D. LAURITANO²*, M.E. PASQUALINI³, F. ROSSI⁴, L. GRIVET-BRANCOT⁵, G. COMOLA⁶, L. DAL CARLO⁷, E. MOGLIONI⁸ and P. ZAMPETTI⁹

¹Private Practice, Mondovì (CN), Italy; ²Department of Biomedical, Surgical and Dental Sciences, University of Milan, Milan, Italy; ³Private Practice, Milan, Italy; ⁴Private Practice, Busto Arsizio, Italy; ⁵Visiting Professor, Turin University, Italy; ⁶Universidad Alfonso X El Sabio, Madrid, Spain; ⁷Private Practice, Venice, Italy; ⁸Private Practice, Rome, Italy; ⁹Pavia University

*These authors contributed equally to this paper.

The presence of periodontal disease can be ascertained by clinical examination (redness, edema and probe depth, bleeding-on-probing). Occlusal adjustment can lead to a marked, stable improvement in periodontal health in terms of bacterial profile and clinical appearance, presumably by obviating tissue distress caused by occlusal dysfunction, thereby providing unfavorable conditions for bacterial growth. Therefore, occlusal trauma can be an essential indicator of the periodontal disease and, if not corrected, could lead to a relapse.
CLINICAL APPLICATIONS OF NATURAL BONE MORPHOPROTEINS IN DENTISTRY:
A NARRATIVE REVIEW

L. OTTRIA1*, A. PALMIERI2*, M. ANDREASI BASSI3, D. LAURITANO4,
V. CANDOTTO5, A. TAGLIABUE6** and L. TETTAMANTI6**

1Dental School, Tor Vergata University, Rome, Italy; 2Department of Experimental, Diagnostic and Specialty Medicine, University of Bologna, Bologna, Italy; 3Private Practitioner in Rome, Italy;
4Department of Medicine and Surgery, University of Milano Bicocca, Monza, Italy; 5Department of Biomedical, Surgical and Dental Sciences, University of Milan, Milan, Italy; 6Department of Medicine and Surgery, University of Insubria, Varese, Italy

*these authors contributed equally to this work and they are co-first authors.
**these authors contributed equally to this work and they are co-last authors

The need to restore bone loss in maxilla and mandible has led to find natural bone substitutes, such as fresh autogenous bone grafts. Fresh autogenous bone grafts (FABGs) have a remarkable capacity to induce new bone formation, a phenomenon called ‘osteoinduction.’ FABGs are useful in craniomaxillofacial and oral applications to restore bone deficiencies. The isolation of those proteins believed to be responsible for the osteoinductive activity of FABGs, namely Natural Bone Morphogenetic Proteins (NBMPs), led to a new era in bone regeneration. NBMPs have been approved for use in specific oral and maxillofacial applications. Clinical trials and studies of oral and craniofacial surgery have indicated that NBMPs can promote bone repair. Information about the biology, chemistry, and actions of NBMPs has called into question whether NBMPs would result in clinically useful bone induction and morphogenesis. Preclinical and specific clinical trials have indicated the efficacy of NBMPs either combined with autograft or compared with an autograft alone. In light of questions about potency and safety of NBMPs, however, additional high-level evidence is needed for specific clinical indications and appropriate patient populations that would benefit from their use.
Implant dentistry has become one of the most successful techniques for oral rehabilitation over the last 20 years. The success rate of implant oral rehabilitation is above 80% while peri-implant disease (PID) is the most important complication of implant dentistry. The main cause of PID is considered bacterial leakage at the implant-abutment connection of a two-piece implant system. Prevention and control of bacterial leakage at the implant-abutment connection is mandatory for reducing inflammation process around implants neck and achieving bone stability. Since bacteria leakage at implant-abutment connection level is the main cause of PID, a microbiological test should be important to identify bacteria that cause PID. According with the conclusion of workshop of the European Federation on Periodontology, a test that detects the most frequent bacterial species involved in the onset of PID (Actinobacillus actinomycetemcomitans, Porphyromonas gengivalis, Tannerella forsythia, Treponema denticola) should be used in clinical practice. In fact, PID progression depends on the typology, quantity and composition of bacterial flora in peri-implant pockets, so controlling PID onset and progression, is a keystone for preventing implant failures and consequently forensic conflicts. The effort to prevent PID and consequently assurance or forensic conflicts have become one of the main focal points of all dental professionals. Behind these efforts lie, above all, ethical but also economic reasons, as well as a desire to prevent PID, improving implant care quality and increasing the legal security of health care professionals themselves. Since the legal decisions in our society influence how we practice dentistry, especially in the fast-evolving field of implant dentistry, using diagnostic tools that will allow dentists to demonstrate that they have acted correctly in accordance with the knowledge of modern medicine, it is of great importance to defend themselves in the case of legal-legal disputes.
HIV infection is one of the major health problems of the last decades. This disease causes a chronic infection that can lead to acquired immunodeficiency syndrome (AIDS). According to the Global AIDS update, released in 2016 by HIV department of World Health Organization (WHO) and by the Joint United Nations Program on HIV/AIDS (UNAIDS), at the end of 2015, 36.7 million people were infected by HIV: 34.9 million of these were adults and 1.8 million were children under 15 years of age. The same report shows that during 2015, 2.1 million of new infection cases have occurred all over the world and about 1.1 million people have died for HIV. The aim of this short review is to update the main HIV-related oral manifestations and their correlation with HAART (Highly Active Antiretroviral Therapy) and CD4+ T-cell count. Despite that more than 20 years have elapsed, this classification still remains valid: even today, group 1 lesions are found in the majority of HIV-positive patients with oral manifestations. Group 1 includes the following conditions: oral candidiasis (pseudomembranous candidiasis, erythematous candidiasis, angle cheilitis), oral hairy leukoplakia, periodontal diseases (necrotizing gingivitis, necrotizing periodontitis, linear gingival erythema), Kaposi’s sarcoma, and non-Hodgkin’s lymphoma. Melanotic hyperpigmentation, HSV infection and HPV infection, which are included in group 2, are also common. Oral candidiasis, oral hairy leukoplakia, Kaposi’s sarcoma and HSV infection are the lesions that have seen the major drop in their incidence after the HAART introduction. The increase in CD4+ T-cell count is not significantly correlated to the decrease of every type of oral lesions, but it is statistically significant only in relation to oral candidiasis (p-value <0.001). Oral lesions are an important sign of immunodepression and with the introduction of HAART their incidence has strongly decreased, particularly in urban areas. Nevertheless, developing countries still have a high prevalence of these manifestations because of the persistence of many risk factors, like the difficulty to access treatment, poor oral hygiene, low socioeconomic status and late diagnosis.
HUMAN PAPILLOMA VIRUS ASSOCIATED WITH ORAL CANCER AND PREVENTIVE STRATEGIES: THE ROLE OF VACCINES

L. OTTRIA1*, V. CANDOTTO2*, F. CURA3, L. BAGGI4, C. ARCURI5, M. NARDONE6, R. M. GAUDIO3, R. GATTO7, F. SPADARI8 and F. CARINCI9

1Dental School, Tor Vergata University, Rome, Italy; 2Department of Biomedical, Surgical and Dental Sciences, University of Milan, Milan, Italy; 3Department of Medical Sciences, University of Ferrara, Ferrara, Italy; 4Department of Clinical Sciences And Translational Medicine, University of Tor Vergata, Rome, Italy; 5Department of Clinical Sciences and Translational Medicine, University of Tor Vergata, Rome, Italy; 6Ministry of Health, Rome, Italy; 7Department of Life, Health and Environmental Sciences, School of Dentistry, University of L’Aquila, L’Aquila, Italy; 8Department of Medicine and Surgery, University of Milano Bicocca, Monza, Italy; 9Department of Morphology, Surgery and Experimental Medicine, University of Ferrara, Ferrara, Italy

*these authors contributed equally to this work and they are co-first authors

The aim of this paper is to describe the efficacy of Human Papilloma Virus (HPV) vaccines for preventing oral cancer. A systematic review of the literature was conducted to describe the state of the art about HPV vaccines for preventing oral cancer. The aspects of prevention and control of infection by administering vaccines and the diffusion of sexual education campaigns are discussed also. In recent years there has been a growing interest in HPV in dentistry, suggesting a role of such a family of viruses in the development of oral cancers as well as of the uterine cervix. Even if the mass media have increasingly faced the problem, causing frequent alarming among patients, the dentist therefore needs a complete and up-to-date knowledge of this infectious condition that is one of the most common causes of sexually transmitted mucous membrane infections (eg genital, anal and oral). Recent studies about HPV infection are a basic requirement in order to promote the HPV vaccinations and patient’s health.
HYPNOTIC APPROACH DURING DENTAL TREATMENT: ANALYSIS OF DESCRIPTIVE DATA OF A CASE SERIES

R. FERDEGHINI1*, D. LAURITANO2*, A. TAGLIABUE3** and L. TETTAMANTI3**

1Private practise, Monza, Italy; 2Department of Medicine and Surgery, University of Milan-Bicocca, Monza, Italy; 3Department of Medicine and Surgery, University of Insubria, Varese, Italy

*these authors contributed equally to this work and they are co-first authors
**these authors contributed equally to this work and they are co-last authors

Anxiety and worry are important components that affect the patient’s behaviour during dental sessions and influence the effectiveness of dental treatment. Psychological approach and hypnotic approach (HA) have in recent years assumed increasing prominence as effective treatment regimes. Dentists have used a number of methods in the management of dental phobic disorders through HA. However the efficacy of HA in controlling anxiety and worry is controversial. The aim of the present study is to describe the response of patient to HA during dental treatment. The study of the population consisted of 42 patients, these being 50% random sample of consecutive patients presenting to a private practise over an 8-year period. In 38 patients HA was induced. 4 patients were not susceptible to HA. There were 20 women (52.6%) and 18 men (47.3%) with a mean age of 47.2 years (range 30-69 years). At the end of dental sessions with HA all the patients were asked to answer the following questions: 1) Have you been hypnotized in the past? 2) Were you aware of dental applications of HA? 3) How do you evaluate the use of this technique in the field of dental care? 4) Do you think that you can use this procedure in the future too? The answers were as follows: question 1: 34 patients answered yes, 4 no; question 2: 34 answered yes, 4 no; question 3: the choice was between “very useful”, “useful”, “Indifferent”, “to avoid”. Twenty-nine patients indicated “very useful”, and 9 “useful”; question 4: the choice was between yes and no. All patients answered yes. This study adds further support to a growing body of evidence relating HA to a better compliance to dental treatment. The dental situation in particular lends itself to carefully controlled investigation providing further evidence to support a robust theory.
HPV ACTING ON E-CADHERIN, P53 AND P16: LITERATURE REVIEW

L. OTTRIA1*, V. CANDOTTO2*, F. CURA3, L. BAGGI4, C. ARCURI5, M. NARDONE6, R. M. GAUDIO3, R. GATTO7, F. SPADARI8 and F. CARINCI9

1Dental School, Tor Vergata University, Rome, Italy; 2Department of Biomedical, Surgical and Dental Sciences, University of Milan, Milan, Italy; 3Department of Medical Sciences, University of Ferrara, Ferrara, Italy; 4Department of Clinical Sciences and Translational Medicine, University of Tor Vergata, Rome, Italy; 5Department of Clinical Sciences and Translational Medicine, University of Tor Vergata, Rome, Italy; 6Ministry of Health, Rome, Italy; 7Department of Life, Health and Environmental Sciences, School of Dentistry, University of L’Aquila, L’Aquila, Italy; 8Department of Medicine and Surgery, University of Milano Bicocca, Monza, Italy; 9Department of Morphology, Surgery and Experimental Medicine, University of Ferrara, Ferrara, Italy

*these authors contributed equally to this work and they are co-first authors

In addition to tobacco and alcohol consumption, the two main risk factors for oral squamous cell carcinoma (OSCC), recent studies have revealed infections with human papilloma virus (HPV) as an additional risk factor for OSCC development. In the field of head and neck malignancies, the prevalence of HPV infections in oropharyngeal cancer (OC) ranges in different studies up to 84%. While HPV infection is discussed as an independent risk factor in this region, its distinguished role in carcinogenesis of tumours localized to the oral cavity remains uncertain. A systematic literature search was performed using PubMed, Cochrane library, Science Direct, and the Internet search, with language restricted to English. The search included published studies which dealt with detection methods of HPV-related oral and oropharyngeal cancers and biomolecular studies, particularly regarding the compromising of p53 p16 and e-cadherin’s. P53 Tumour suppressor protein p53 has several functions that are related to maintaining genomic stability and inhibiting cell proliferation in response to DNA damage. For preventing neoplasia to occur, the most important of these functions are cessation of cell growth and induction of either apoptosis or senescence. P16 is a cellular protein involved in cell cycle regulation. It is a cyclin-dependent kinase 4 (CDK4) inhibitor, and is integral to Rb mediated regulation of G1-S phase of the cell cycle. P16 is expressed at a very low level in normal cell as Rb inhibits transcription of p16. Various detection methods ranging from immunohistochemistry (IHC) to molecular techniques have been used to determine the HPV status of HNSCC. E-cadherin, a 120 kDa Type I classical cadherin, is expressed primarily on epithelial cells. It is found on the surface of keratinocytes and Langerhans cells (LC) and E-cadherin mediated adhesion between these cell types is required for LC retention in the epidermis. It is also an important tumour suppressor protein: its loss or inactivation is associated with epithelial-to-mesenchymal transition (EMT), a process involving dedifferentiation, infiltration and metastasis of tumours. Oral carcinogenesis is a multi-factorial process involving socioeconomic, environmental and microbial factors leading to multistep changes. Smoking and tobacco exposure seems to modify the survival and recurrence of HPV positive tumours and should be considered in future trials for risk stratification of HPV positive patients. HPV associated oropharynx cancer represents a distinct clinical and biologic entity with many unresolved issues that will be investigated in future translational, clinical research. We need to further explore and understand why the disease occurs predominantly in males, and whether the natural history of oral HPV infection differences in men and women.
Implant dentistry has become a popular restorative option in clinical practice. Titanium and titanium alloys are the gold standard for endo-osseus dental implants production, thanks to their biocompatibility, resistance to corrosion and mechanical properties. The characteristics of the titanium implant surface seem to be particularly relevant in the early phase of osseointegration. Furthermore, the microstructure of implant surface can largely influence the bone remodelling at the level of the bone-implant surface. Recently, research has stated on the long-term of both survival and success rates of osseointegrated implants and mainly on biomechanical aspects, such as load distribution and biochemical and histological processes at the bone-implant interface. This short review reports recent knowledge on chemical and mechanical properties, biological aspects, innovations in preventing peri-implantitis, describing clinical applications and recent improvements of titanium dental implants. In addition, it highlights current knowledge about a new implant coating that has been demonstrated to reduce the number of initially adhering bacteria and peri-implantitis.
To compare the results of psychometric tests in patients with BMS and controls, participants were tested for depression, anxiety, fatigue and distress. Patients with BMS had noticeably higher scores for depression, fatigue and distress, compared to controls. Depression and distress were significantly correlated with the burning symptom. Moreover, distress and burning symptoms proved to be interdependent. Depression seems to play a specific role in BMS. Burning symptoms affect quality of life of patients and they could be a predictor of distress.
PSYCHIATRIC DISORDERS IN ORAL LICHEN PLANUS: A PRELIMINARY CASE
CONTROL STUDY

D. DI STASIO1*, D. LAURITANO2*, P. GRITTI3, R. MIGLIOZZI3, C. MAIO1, G. MINERVINI1,
M. PETRIZZI4, R. SERPICO1, V. CANDOTTO5** and A. LUCCHESE1**

1Multidisciplinary Department of Medical-Surgical and Dental Specialties, University of Campania
Luigi Vanvitelli, Naples, Italy; 2Department of Medicine and Surgery, University of Milano Bicocca,
Monza, Italy; 3Department of Mental and Physical Health and Preventive Medicine, Second University
of Naples, Naples, Italy; 4Interdisciplinary Department of Medicine, University of Bari, Bari, Italy;
5Department of Biomedical, Surgical and Dental Sciences, University of Milan, Milan, Italy

*these authors contributed equally to this work and they are co-first authors
**these authors contributed equally to this work and they are co-last authors

The aim of this study was to evaluate the prevalence of psychiatric symptoms in patients with
oral lichen planus (OLP) compared to a control group. 11 patients (mean age 65.2 years-old), with
diagnosis of OLP and 13 controls (mean age 64.8 years-old) underwent a psychiatric evaluation with
five psychometric scales: Visual Analogue Scale (VAS), Hamilton Rating Scale for Depression (HAM-D),
State-Trait Anxiety Inventory (STAI 1-2), Distress Thermometer (DT) and Brief Fatigue Inventory (BFI).
Seventy-three % of OLP group presented a VAS score of mild type; 9% had depressive symptoms; 100% of
the sample had a score above the cut-off for state and trait anxiety; 45% presented Distress (36% moderate type). However, no statistical difference was found in comparison with the control group. In
this study, there was no difference in these parameters between the OLP group and the control group.
Perhaps, a larger cohort of patients could give different results.
YouTube™ is increasingly being used by patients to obtain health-related information. No studies have evaluated the content of YouTube™ videos on children oral thrush. The aim of this work is to examine the quality of information offered by this platform about oral thrush in children. Searching term “oral thrush in children” (OTC) displayed a total of 2,790 results. Of the top 60 videos analyzed, 27 were excluded. The main source of upload was from generalist information YouTube® channels (GC) followed by healthcare professionals (HP), individual users (IU), and healthcare information channels (HC); usefulness of videos is successfully correlated with the number of visualization, number of likes and viewing rate and was interdependent with the number of visualizations, number of likes and VR. However, videos on the oral thrush do not have satisfactory quality information. HP themselves, along with HC, do not seem to provide more appropriate information on COT, than GC or IU.
Patients affected by Prader-Willi Syndrome (PWS) usually show orofacial dysfunction, poor oral hygiene, severe tooth wear, generalized caries and thick sticky saliva. The aim of this study was to evaluate molecular/ionic changings in PWS patients compared to controls, as well as unstimulated salivary flow rate (SFR); 7 patients with a mean age of 20.0±5.45 years were enrolled in the study group (PWS group) and 5 patients with a mean age of 22.6±3.05 years, in the control group. Results showed a greater Na+ (p=0.003), Cl+ (p=0.004) and P (p=0.001) concentration in saliva of PWS group as well as a greater concentration of secretory IgA (p=0.003) with a reduction of SFR (p=0.004) compared to controls. A Spearman’s analysis (based on the SFR of both groups) revealed an inverse correlation with Na (rho=-0.747), Cl (rho=-0.723), P (rho=-0.637) and sIgA (rho=-0.707) concentration and SFR, when linear regression model was performed only P and SFR were interdependent (β=-0.748; p=0.005).
MANAGEMENT OF DENTURE STOMATITIS: A NARRATIVE REVIEW

D. DI STASIO1*, D. LAURITANO2*, G. MINERVINI1, R. S. PAPARELLA1, M. PETRUZZI3, A. ROMANO1, V, CANDOTTO4** and A. LUCCHESE1**

1Multidisciplinary Department of Medical-Surgical and Dental Specialties, University of Campania Luigi Vanvitelli, Naples, Italy; 2Department of Medicine and Surgery, University of Milano Bicocca, Monza, Italy; 3Interdisciplinary Department of Medicine, University of Bari, Bari, Italy; 4Department of Biomedical, Surgical and Dental Sciences, University of Milan, Milan, Italy

*these authors contributed equally to this work and they are co-first authors
**these authors contributed equally to this work and they are co-last authors

Candida albicans is a typical commensal microorganism of the oral cavity that can become virulent in certain conditions and cause denture stomatitis (DS). Many conditions can predispose for DS, including local and systemic alterations. The therapeutical approach to DS is various and both topical and systemic alternatives can be considered. Azoles molecules are the most common used, both topically and systemically, but in recent years various alternatives have been proposed. This review aims to examine the scientific literature to evaluate the effectiveness of conventional therapies and the potential of the new ones.
HOW SOCIAL MEDIA MEET PATIENTS’ QUESTIONS: YOUTUBE™ REVIEW FOR MOUTH SORES IN CHILDREN


1 Multidisciplinary Department of Medical-Surgical and Dental Specialties, University of Campania Luigi Vanvitelli, Naples, Italy; 2 Department of Biomedical, Surgical and Dental Sciences, University of Milan, Milan, Italy

*these authors contributed equally to this work and they are co-first authors
**these authors contributed equally to this work and they are co-last authors

Recurrent aphthous stomatitis (RAS) is one of the most common causes of mouth sores in children so the management of this condition is a matter of great importance. YouTube™ is increasingly being used by patients to obtain health-related information. The aim of this work is to examine the quality of information offered by YouTube™ about mouth sores in children (MSC). Searching the term ‘mouth sores in children’, (MSC) displayed 12,300 results. Of the top 60 videos analyzed, 31 were excluded following exclusion criteria. The major source of upload was from healthcare information channels (HC-41.38%), followed by individual users (HP-25.59%), healthcare professionals (IU-17.24%) and generalist information channels (HC-13.78%); 20.69% of them deal with predisposing factors, and related pathologies, the majority of these propose home remedies (60.72%) rather than topical analgesic drugs (21.43%), antimicrobials (7.14%) and topical steroids (3.57). Most of the videos analyzed were slightly useful (68.97%). Information about mouth sores in children on YouTube™ was poor regardless of the upload source. Analyzing health content on social platforms is a starting point for providing greater quality of health-related information.
Photodynamic Therapy (PDT) is a minimally invasive treatment that has shown promising results in treating preneoplastic lesions. PDT reckons on the administration of a drug (photosensitizer), which can be used in a topical or systemic form. Photodynamic therapy has been successfully used in the management of a variety of pathologies from different anatomical sites, including the head, neck, brain and lungs, hepatobiliary tree and other gastrointestinal and urological pathologies, skin, gynaecological conditions and in vascular anomalies. Starting from these same considerations, PDT has also been adopted for oral malignant and premalignant lesions’ treatment, and should be kept under investigation as a promising therapeutic management of leukoplakia and preneoplastic lesions of the oral cavity.
ORAL-FACIAL-DIGITAL SYNDROME (OFD): 31-YEAR FOLLOW-UP MANAGEMENT AND MONITORING

G. MINERVINI1*, A. ROMANO1*, M. PETRUZZI2, C. MAIO1, R. SERPICO1, D. DI STASIO1** and A. LUCHESE1**

1Multidisciplinary Department of Medical-Surgical and Dental Specialties, University of Campania Luigi Vanvitelli, Naples, Italy; 2Interdisciplinary Department of Medicine, University of Bari, Bari, Italy

*these authors contributed equally to this work and they are co-first authors
**these authors contributed equally to this work and they are co-last authors

Orofaciodigital syndrome (OFD) is a group of hereditary disorders identified by malformations of the mouth (oris), face (facies), hands and feet (digitus=finger and toe). Although there are several different types reported in the literature, there is a great overlap in their clinical presentation. The full spectrum of all disorders due to OFD is not yet fully understood, since each patient shows variations in the expression of the syndrome. In the oral cavity, teeth are often affected by various alterations, such as dental caries, abnormal teeth, enamel hypoplasia, supernumerary teeth and dental agenesis. Treatment of a syndromic patient with a complex picture showing conditions such as palatine fissures and a severe hypodontia involves a multidisciplinary approach and a careful periodical follow-up.
TELESCOPIC OVERDENTURE ON NATURAL TEETH: PROSTHETIC REHABILITATION ON OFD SYNDROMIC PATIENT AND A REVIEW ON AVAILABLE LITERATURE

G. MINERVINI*, A. ROMANO*, M. PETRUZZI†, C. MAIO†, R. SERPICO†, A. LUCHESE†, V. CANDOTTO** and D. DI STASIO***

*Multidisciplinary Department of Medical-Surgical and Dental Specialties, University of Campania Luigi Vanvitelli, Naples, Italy; **Department of Biomedical, Surgical and Dental Sciences, University of Milan, Italy; ***Interdisciplinary Department of Medicine, University of Bari, Bari, Italy

Abstract Orofaciodigital syndromes (OFD) are rare genetical disorders characterized by malformations of the mouth (oris), face (facies), hands and feet (digitus = finger, toe). It is still impossible to fully understand the whole spectrum of all dysfunctions due to OFD, since the expressions of the syndrome vary in each patient. There are various alterations, thoroughly described in literature that can affect the oral cavity such as dental caries, abnormal teeth, enamel hypoplasia, supernumerary teeth and dental agenesis. A syndromic patient with a complex picture showing conditions such as palatine fissures and a severe hypodontia has to be treated using a multidisciplinary approach, and in particular, needs a prosthetic rehabilitation for the restoration of missing dental elements in the arch.
LICHEN PLANUS: MOLECULAR PATHWAY AND CLINICAL IMPLICATIONS IN ORAL DISORDERS

M. BOCCELLINO1*, D. DI STASIO2*, A. ROMANO2, M. PETRUZZI1, A. LUCCHESE2, R. SERPICO2, L. FRATI4 and M. DI DOMENICO1,5

1Department of Biochemistry, Biophysics and General Pathology, University of Campania “Luigi Vanvitelli”, Naples, Italy; 2Multidisciplinary Department of Medical-Surgical and Dental Specialties, University of Campania Luigi Vanvitelli, Naples, Italy; 3Interdisciplinary Department of Medicine, University of Bari, Bari, Italy; 4Department of Molecular Medicine, Policlinico Umberto I, Sapienza University of Rome, Rome, Italy; 5Sbarro Institute for Cancer Research and Molecular Medicine, Center for Biotechnology, Temple University, Philadelphia, PA, USA

*these authors contributed equally to this work and they are co-first authors

Stem cells play a role in many mucosal disorders characterised by abnormal proliferation and differentiation of keratinocytes, such as oral lichen planus (OLP). In OLP there were changes in stem cell markers as component of integrin complexes α6 and β1 integrin increased along with increase of melanoma-associated chondroitin sulphate proteoglycan (MCSP) and decreased of notch1 (N1) and keratin 15 (K15). Stem cell marker expression may be altered by pathological signalling in these lesions. Cadherins are transmembrane receptors that provide cell-cell contact and communication function through calcium-dependent homophilic and heterophilic interactions. In actively diseased areas of OLP lesions, basal keratinocytes downregulate CD40 and were focally E-cadherin-negative, in contrast to non-diseased areas and normal oral mucosa. This loss of E-cadherin expression may contribute to epithelial basal cell destruction and T-cell migration into the epithelial compartment in OLP. In addition, Growth factor pathways as a role in OLP and has been analyzed in this review.
Legionella spp. are ubiquitous in aquatic habitats and water distribution systems, including dental unit waterlines. Surveys have shown that the percentage of samples taken at different dental sites that were positive for Legionella spp. was highly variable and ranged from 0% to 100%. Cultivation is the principal approach to evaluating bacterial contamination employed in the past, but applying this approach to testing for Legionella spp. may result in false-negative data or underestimated bacterial counts. PCR and direct fluorescent counts can detect viable non-cultivable bacteria, which are not counted by plating procedures. Legionella spp., commonly form such viable non-culturable cells and it is likely that they contribute to the difference between plate count results and those of PCR and fluorescent-antibody detection. However, studies have shown that Legionella is present in the municipal water source in spite of the current filtration and chlorination procedures. Once Legionella reaches the building water system, it settles down into a biofilm layer of stagnant water. By means of this layer, Legionella can protect itself from antimicrobial agents and then multiply. Dental unit waterlines may be contaminated with opportunistic bacteria. The water quality in the dental units should be controlled to eliminate opportunistic pathogens and to provide water for dental treatment that meets public health standards for potable water.

COLONIZATION OF LEGIONELLA SPP. IN DENTAL UNIT WATERLINES


1Department of Morphology, Surgery and Experimental Medicine, University of Ferrara, Ferrara, Italy; 2Department of Experimental, Diagnostic and Specialty Medicine, University of Bologna, Bologna, Italy; 3Multidisciplinary Department of Medical-Surgical and Dental Specialties, University of Campania Luigi Vanvitelli, Naples, Italy; 4Department of Medicine and Surgery, University of Milano Bicocca, Monza, Italy; 5Department of Biomedical, Surgical and Dental Sciences, University of Milan, Milan, Italy; 6LAB S.r.l., Codigoro, Ferrara, Italy; 7Department of Clinical Sciences and Translational Medicine, University of Tor Vergata, Rome, Italy; 8Department of Medicine and Surgery, University of Insubria, Varese, Italy

*these authors contributed equally to this work and they are co-first authors
**these authors contributed equally to this work and they are co-last authors
FOCUS ON PERIODONTAL DISEASE AND DEVELOPMENT OF ENDOCARDITIS

F. CARINCI1*, M. MARTINELLI2*, M. CONTALDO3, R. SANTORO3, F. PEZZETTI2, D. LAURITANO4, V. CANDOTTO5, D. MUCCHI6, A. PALMIERI2, A. TAGLIABUE7** and L. TETTAMANTI7**

1Department of Morphology, Surgery and Experimental Medicine, University of Ferrara, Ferrara, Italy; 2Department of Experimental, Diagnostic and Specialty Medicine, University of Bologna, Bologna, Italy; 3Multidisciplinary Department of Medical-Surgical and Dental Specialties, University of Campania Luigi Vanvitelli, Naples, Italy; 4Department of Medicine and Surgery, University of Milano Bicocca, Monza, Italy; 5Department of Biomedical, Surgical and Dental Sciences, University of Milan, Milan, Italy; 6LAB S.r.l., Codigoro, Ferrara, Italy; 7Department of Medicine and Surgery, University of Insubria, Varese, Italy

*these authors contributed equally to this work and they are co-first authors
**these authors contributed equally to this work and they are co-last authors

Abstract Infective endocarditis is a devastating disease with high morbidity and mortality. The link to oral bacteria has been known for many decades and has caused ongoing concern for dentists, patients and cardiologists. The microbiota of the mouth is extremely diverse and more than 700 bacterial species have been detected. Half of them are uncultivable so far. Oral microbiota is not uniform, specific sites exist in the mouth such as tongue, palate, cheek, teeth and periodontal pockets that have their own microbiota. Factors involved in the development of a bacterial endocarditis are difficult to define but a vulnerable surface (i.e. a damaged endocardium) and a high bacterial load in the blood seems to be decisive. The cause of microorganisms, in 90% of cases, are staphylococcus, streptococcus and enterococcus. Oral streptococci belong to viridans group (streptococcus mutans and streptococcus sanguis). As they are part of dental plaque, they could enter the bloodstream causing bacteraemia through daily habits like chewing or tooth brushing. Effective treatment of periodontal infections is important to reduce local inflammation and bacteraemia. In addition, poor periodontal health appears to increase the risk of cardiovascular disease, pulmonary disease, and preterm and low birth weight. Conclusions: Long-standing oral disease prevention protocols reduce the risk of developing periodontal disease. Data suggest that methods used to prevent cases of IE that originate from oral bacteria should focus on improving oral hygiene and reducing or eliminating gingivitis, which should reduce the incidence of bacteraemia after tooth-brushing and the need to extract teeth owing to periodontal disease and caries.
ANALYZE MY FACE

V. QUINZI1, E.T. SCIBETTA2, E. MARCHETTI1, S. MUMMOLO1, A. BRUNO GIANNI3, M. ROMANO3, G. BELTRAMINI3 and G. MARZO1

1Department of Life, Health, Environmental Sciences, University of L’Aquila, L’Aquila, Italy; 2Freelance, Rome, Italy; 3Department of Biomedical, Surgical and Dental Sciences, University of Milan, Italy; UOC Ch Maxillo faciale e odontoiatria, IRCCS Fondazione Ca Granda Ospedale Maggiore Policlinico Milano

Plastic surgery is gaining more and more popularity, while stigma and popular myths about it are gradually decreasing. Analyze My Face conjunctly deals with the two main problems of facial plastic surgery: the excessive rate of dissatisfaction, which results in high revision requests and negative psychological side-effects and the “diagnosis by procedure” approach, which leads to erroneous measurements. This new and innovative method of Digital Facial Analysis is a direct non-expensive online service that provides professional and documented in-depth consultation to patients before they decide to undergo any type of facial intervention. The paper thoroughly explains the scientific method with which professionals provide customers with a facial assessment based on specific parameters which will be discussed (height, width, proportions, direction of facial growth, the way they assess each facial area in detail (eyes, mouth, cartilage), and the motivations for which they suggest to correct eventual defects through precise measurements, indicators and suggested interventions. Long-term evaluation of stability of surgical results and patient satisfaction achieved with digital facial analysis has not yet been established and needs further research. However, it is important to underline that the AMF approach tends to consider exclusively possible and feasible procedures that do not compromise functionality and that do not put patients in danger of serious damage. Problems or deformities that cannot be treated are always indicated. AMF aims to maximize professionality by giving practitioners an additional tool to aid their work, give unbiased opinions and look at the overall picture. It also aims to help patients by soothing their way into the complicated world of aesthetic surgery.
Scars are a very common condition of the general population and can have a profound impact on the psyche of the patient such as low self-esteem and feelings of psychosocial isolation. Various therapeutic approaches have been proposed for improving the clinical appearance of scars. Fractional mode of ablative and non-ablative lasers has become a novel strategy for the treatment of scars. A total of 43 patients (Fitzpatrick skin type II to IV), clinically diagnosed of surgical and post-traumatic scars from January 2015 to December 2016, were treated. Each treatment comprised of several passes over the scars with different devices, using a 1.565nm scanned erbium-doped fiber NAFL and an IPL. All patients noted subjective improvement in cosmesis and functionality after treatment, also with a decreased pain and an increased mobility on the underlying plans. Numerous therapeutic strategies for traumatic and surgical scars have been suggested to date, but no consistent treatment modality has been established yet. In our study, we have shown that there was a significant collagen remodelling with decrease of scar vascularity and significant improvement of pliability of scar after combined treatment with non-ablative fractional resurfacing and IPL resulting in a remarkable improvement in scar vascularity, pigmentation and height.
PRE-TREATMENT WITH BERBERINE ENHANCES EFFECT OF 5-FLUOROURACIL AND CISPLATIN IN HEP2 LARYNGEAL CANCER CELL LINE

A. PALMIERI¹, A. IAPICHINO¹, F. CURA², L. SCAPOLI¹, F. CARINCI³, M. MANDRONE⁴ and M. MARTINELLI¹

¹Department of Experimental, Diagnostic and Specialty Medicine, University of Bologna, Bologna, Italy; ²Department of Medical Sciences, University of Ferrara, Ferrara, Italy; ³Department of Morphology, Surgery and Experimental Medicine, University of Ferrara, Ferrara, Italy; ⁴Department of Pharmacy and Biotechnology, University of Bologna, Bologna, Italy

Larynx squamous cell carcinoma represents one of the most common head and neck cancers in the world. Herbal drugs are popularly emerging as complementary and alternative therapies in cancer because of their cost effectiveness and minimal side effects. The present study was undertaken to explore the anti-tumor potential of berberine, an isoquinolone present in the extract of *Tinospora cordifolia* in HEP2 human laryngeal cancer cell line. Besides, it was aimed to investigate whether berberine could enhance the anticancer effect of 5-fluorouracil and cisplatin in HEP2. Our data seem to support a role for berberine in decreasing the expression of genes usually seen overexpressed in larynx squamous cell carcinoma and involved in pathways such as those of cell cycle and regulation, differentiation, and epithelial-mesenchymal transition. Moreover, a downregulation of these genes caused by cisplatin or 5-fluorouracil, treatment of election in laryngeal cancers was enhanced by a 4h pre-treatment with berberine.
Endocarditis is a cardiovascular disease caused by the inflammation of the inner tissues of the heart, the endocardium, usually of the valves. Bacteraemia is essential in the development of endocarditis, and there are some findings that the main pathogens of endocarditis are viridans group streptococci: Streptococcus oralis, Streptococcus sanguinis, and Enterococcus faecalis. There is strong evidence that endocarditis bacteria are present in the tonsillar microbiota, so that tonsillar infection is associated with an increased risk of endocarditis. The aim of this manuscript is to investigate the presence of the main pathogens of endocarditis in tonsillar microbiota of an Afghan population group. A sample of 80 tonsil swabs was analyzed by quantitative real time PCR to detect endocarditis pathogens and an estimation of the total bacterial load. The median bacterial load in PCR reaction was $1.4 \times 10^6$ (interquartile range $4.7 \times 10^5 - 2.9 \times 10^6$). Three species, S. oralis, S. sanguinis, and E. faecalis were found in large amounts in all specimens. On the other hand, S. mitis was never detected. The S. aureus was found in 3 samples with a prevalence of 0.04 (C.I. 0.01-0.10). The S. mutans was found in 33 samples with a prevalence of 0.41 (C.I. 0.31-0.52). Endocarditis bacteria has been found into the tonsillar microbiota, so there is sufficient evidence to justify that the oral cavity is a reservoir of endocarditis bacteria that can have a significant impact on the cardiovascular function.
Some studies have evidenced the role of human polyomaviruses in head and neck squamous cell carcinoma. BK, JC and SV40 human polyoma viruses are widely recognized as etiological agents associated with malignancies. The aim of this study was to analyse the prevalence of BK, IC and SV40 in tonsillar microbiota in a group of Afghan volunteers. A sample of the tonsillar microbiota was taken from a single site using a sterile oral swab paper stick. A fixed volume of purified DNA from each sample was tested by quantitative real-time polymerase chain reactions to evaluate the number of human cells and the number of viral genomes in each sample. The cell number was evaluated via the quantification of a single copy genomic sequence, which is located in the HMBS locus. The median analyzed cell number in each reaction was 4343 (interquartile range 2074-8470). SV40 was never detected, while prevalence rate was 0.11 (C.I. 0.06-0.20) for BK and 0.10 (C.I. 0.05-0.19) for JC. Further studies are necessary to clarify whether polyomaviruses can be considered a risk factor of oral, oropharyngeal and laryngeal malignancies.
Cancer of the oral cavity is known to have a diverse aetiology that includes infectious agents. Human papilloma virus has been found to be associated with several types of human cancer, inclusive of cervical, vulvar, vaginal, penile, anal, and cancer of tonsil. The aim of this manuscript is to investigate the presence of human papillomavirus in tonsillar microbiota of an Afghan population group. A sample of the tonsillar microbiota was collected by oral swab paper stick from 80 healthy donors. The sample was investigated for the presence of high-risk human papillomavirus types 16, 18, 31 and 45 by real time PCR. Eight samples produced some positive endpoint signals for human papillomaviruses. The human papillomavirus 31 was the unique papillomavirus detected; its calculated prevalence rate was 0.10 (C.I. 0.05-0.19). However, the viral load was always very low, in the order of $10^{-3}$ viral genomes per cell. The high prevalence of high-risk human papillomavirus in healthy population suggest a need for further investigation on virus spreading and supports the development of vaccination strategies.
RADIOSURGERY-ASSISTED GINGIVAL DISPLACEMENT: A PROOF OF CONCEPT TECHNIQUE TO ENHANCE THE EFFICIENCY OF INTRAORAL DIGITAL IMPRESSION

L. ARCURI¹, M. CONTALDO², R. SANTORO², A. POZZI³, C. LORENZI¹, C. ARCURI¹, A. BARLATTANI¹, L. TETTAMANTI⁴** and L. OTTRIA¹**

¹Department of Clinical Sciences and Translational Medicine, School of Dentistry, University of Tor Vergata, Rome, Italy; ²Multidisciplinary Department of Medical-Surgical and Dental Specialties, University of Campania Luigi Vanvitelli, Naples, Italy; ³Oral Surgery and Implant Dentistry, Marche Polytechnic University, Ancona, Italy; ⁴Department of Medicine and Surgery, University of Insubria, Varese, Italy

**these authors contributed equally to this work and they are co-last authors

Nowadays, an increasing number of dentists are using intraoral scanners (IOS) in their daily practice as an alternative to conventional impression taking. One of the main concerns is related to the capability of scanning the subgingival anatomy of the die, usually very challenging due to the limited operative field and the presence of oral fluids. The radiosurgery assisted gingival displacement technique (RAGD) may enhance the intraoral optical scanning of the finish line and neighbor tooth anatomy. The contour of the interim prosthesis is used to drive the tip of radiosurgery electrode along the tooth surface and open selectively the gingival crevice with a prosthetically-driven and minimally invasive approach. The clinical implication of this technique is related to increasing the efficiency and accuracy of the digital impression technique in the critical zone of the prosthetic shoulder.
TEMPOROMANDIBULAR JOINT AND RELATED STRUCTURES: ANATOMICAL AND HISTOLOGICAL ASPECTS

L. OTTRIA¹*, V. CANDOTTO²*, F. GUZZO³, M. GARGARI³ and A. BARLATTANI¹

¹Department of Clinical Science and Translational Medicine, University of Rome “Tor Vergata”, Rome, Italy; ²Department of Biomedical, Surgical and Dental Sciences, University of Milan, Milan, Italy; ³Department of Dentistry “Fra G.B. Orsenigo-Ospedale San Pietro F.B.F.”, Rome, Italy

*these authors contributed equally to this work and they are co-first authors

In literature, there is no unanimous agreement about the anatomical and functional characteristics of the temporomandibular joint (TMJ) and its components. The aim of this work is to increase the knowledge about components of the temporomandibular joint, starting from the revision of classical anatomy, through macroscopic and microscopic study, 20 samples of human dissected temporomandibular joints.
The present study was designed to identify a relationship between temporomandibular joint and tympanic cavity and potentially justify the possible clinical correlations between these two anatomical entities. For this reason the authors conducted an anatomic-pathological study about the temporomandibular joint (TMJ) and the neighboring anatomical areas of the middle ear by autopsy finds of human adults.

ANATOMIC RELATIONSHIP BETWEEN TEMPOROMANDIBULAR JOINT AND MIDDLE EAR

L. OTTRIA¹*, D. LAURITANO²*, F. GUZZO³, M. GARGARI³ and A. BARLATTANI¹

¹Department of Clinical Science and Translational Medicine, University of Rome “Tor Vergata”, Rome, Italy; ²Department of Medicine and Surgery, University of Milan-Bicocca, Monza, Italy; ³Department of Dentistry “Fra G.B. Orsenigo-Ospedale San Pietro F.B.F.”, Rome, Italy

*these authors contributed equally to this work and they are co-first authors

The present study was designed to identify a relationship between temporomandibular joint and tympanic cavity and potentially justify the possible clinical correlations between these two anatomical entities. For this reason the authors conducted an anatomic-pathological study about the temporomandibular joint (TMJ) and the neighboring anatomical areas of the middle ear by autopsy finds of human adults.
In this study, the authors examined the capsular structures of 20 human temporomandibular joints (TMJ) macroscopically and microscopically, in order to improve knowledge of these structures, as part of their possible participation in the genesis of TMJ dysfunctions.
HYPERBARIC OXYGEN THERAPY (HBOT) AND PERIDONTAL HEALTH

L. OTTRIA1*, L. TETTAMANTI2*, M. GARGARI3, G. VALENTE4, V. PACINI4 and C. COSTANZO4

1Department of Clinical Science and Translational Medicine, University of Rome “Tor Vergata”, Rome, Italy; 2Department of Medicine and Surgery, University of Insubria, Varese, Italy; 3Department of Dentistry “Fra G.B. Orsenigo-Ospedale San Pietro F.B.F.”, Rome, Italy; 4Roman Hyperbaric Center, Rome, Italy

*these authors contributed equally to this work and they are co-first authors

This study has tested the effects of hyperbaric oxygen in periodontal structures in agreement with the theories supported by literature research. Eight patients, from 30 to 50 years-of-age, were tested with pure oxygen inhalation, at the 2.5 ATA absolute pressure. Main approved tests of periodontal health were evaluated before and after HBOT’s cycles. The results in all patients treated with HBOT, have founded clear improvement of clinical and instrumental parameters.
FDPS FINISH LINE DESIGN AND TOOTH PREPARATION TECHNIQUE

L. OTTRIA¹*, L. TETTAMANTI²*, F. GUZZO³, M. GARGARI³ and A. BARLATTANI¹

¹Department of Clinical Science and Translational Medicine, University of Rome “Tor Vergata”, Rome, Italy; ²Department of Medicine and Surgery, University of Insubria, Varese, Italy; ³Department of Dentistry “Fra G.B. Orsenigo-Ospedale San Pietro F.B.F.”, Rome, Italy

*these authors contributed equally to this work and they are co-first authors.

The purpose of this research is to perform and verify the “modified 50° preparation” suggested by the authors. This procedure was performed with a scrupulous standardization of the tooth’s preparation and then of the laboratory techniques to produce a metal-ceramic crown, and the same for the crown cementation technique of on the preparation of the original sample. After the esthetic evaluations, the obtained sample was included in EPON resin and sectioned in the lingual-vestibular sense. The sections were then observed with an optical microscope in different magnifications for the final evaluations. The geometric design proposed presents the advantages of two great preparation techniques: 50° preparation and circumferential shoulder. The 50° bevel designed in first phase of preparation and the second phase of the circumferential 27° shoulder, together allowed to satisfy the following requirements: aesthetic, marginal accuracy, periodontal compliance, conservation and stability. However, this type of prosthetic preparation is not the only one, but it is one of the marginal designs in prosthetic dentistry.
Periodontal treatment has the aim to reduce oral infection, and prevent the progression of the disease. The potential benefits of new chemical devices for periodontal therapy, include improved patient compliance, an easier access to periodontal pocket and a lower dosage of antimicrobial agent. The objective of this study was to explore the efficacy of a chemical device containing zinc and octenidine in the treatment of chronic periodontitis in adult patients. Ten patients with a diagnosis of chronic periodontitis (20 localized chronic periodontitis sites) in the age group of 35 to 55 were selected. None of these patients received any surgical or non-surgical periodontal therapy and demonstrated radiographic evidence of moderate bone loss. The chemical device zinc plus octenidine was used by each patient after daily oral hygiene. Microbial analysis were analyzed at baseline and on the 15th day. After the treatment, a remarkable decrease in bacteria amount, both for some species and for the total count was observed in the study group. Specifically T. forsythia and T. denticola were eradicated whereas Total Bacteria Loading and Fusobacterium Nucleatum showed a reduction of 38% and 55%, respectively. Our study demonstrated the efficacy of the new chemical device containing zinc and octenidine in a sustained release drug delivery system in the management of moderate to severe chronic periodontitis.
Zinc was known in ancient times, and is diffused in the environment. The potential benefits offered by zinc supplementary therapy have been demonstrated in numerous clinical trials using oral or topical zinc products. The benefit of zinc can be in principle increased through association with other actives. The aim of this study is to evaluate the effect on primary human gingival fibroblast cell of a new formulation containing zinc and octenidine cations. Human gingival fibroblast cells were obtained from three healthy patients (14-year-old man, 15-year-old woman and 20-year-old man) during extraction of teeth. The gene expression of 14 genes (ELANE, FN1, FBN, ITGA1, HAS1, ELN, DSP, ITGB1, HYAL1, TGFB1, TGFB2, TGFB3, TGFBR1 and TGFBR2) was investigated in HGF cell culture treated with 80µM of Octenidine, 1000µM of Zinc, 80µM Octenidine + Zinc solution and the medium alone at 30 min. PrestoBlue™ data showed that as the active concentration increases (Octenidine, Zinc and Octenidine + Zinc) the percentage of cell vitality compared to that of untreated cells decrease. In this study, no statistically significant gene expression was observed between cells, treated with difference substances, and control cells. Our results points out that zinc plus octenidine shows a positive potential in periodontal disease treatment.