

***Proceedings* del III Simposio
Società Italiana di Patologia e Medicina Orale
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17-18 Ottobre 2014**

Abbiamo il piacere e l'onore di presentare i *proceedings* del III Simposio della Società di Patologia e Medicina Orale (SIPMO).

Il Simposio SIPMO è stato ideato alcuni anni fa con l'intento di creare un evento associativo che fosse un'occasione di dialogo e di condivisione delle più attuali linee di ricerca per le Scuole ed i gruppi di ricerca italiani.

Questi *proceedings* sono, quindi, la diretta espressione del contributo che le nostre Scuole offrono al panorama della ricerca scientifica nell'ambito della Patologia e Medicina Orale.

La lettura di questo volume mostra chiaramente come una fitta rete di inter-relazioni e di dialogo tra i gruppi consenta di valorizzare le individualità, raggiungendo importanti risultati e promuovendo la crescita della Patologia e Medicina Orale in Italia, ed è proprio grazie a questa intensa attività scientifica che i gruppi di ricerca italiani sono conosciuti e stimati a livello europeo e mondiale.

Le ricerche presentate spaziano nei vari ambiti della nostra disciplina, comprendendo argomenti di ricerca clinica e traslazionale, evidenziando come l'esperienza clinica possa trarre grande vantaggio dalla collaborazione con prestigiosi laboratori di ricerca.

Con l'augurio che la lettura dei lavori scientifici presentati possa rappresentare, anche per chi non ha potuto partecipare all'evento scientifico, un possibile spunto per il nascere di nuove idee, ringraziamo tutti coloro che hanno contribuito alla riuscita del Simposio, regalando anche quest'anno un fecondo e piacevole momento di vita associativa.

Torino, 18 settembre 2014

Prof. Lorenzo Lo Muzio
Presidente SIPMO

Prof.ssa Monica Pentenero
Presidente del Comitato Organizzatore

Contents

Stomatodynia in oral lichen planus: a case series data analysis of 28 patients <i>D. Adamo, E. Ruoppo, A. Celentano, S. Leuci, M.D. Mignogna</i>	5
Outcome of systemic steroid therapy in oral pemphigus vulgaris patients: a retrospective study of 78 patients in 21 years <i>M. Carbone, A. Elia, A. Gambino, P.G. Arduino, R. Broccoletti</i>	6
DNA methylation analysis by bisulfite next generation sequencing to early detect potentially malignant oral lesions from oral brushing <i>D.B. Gissi, L. Morandi, A. Tarsitano, M.P. Foschini, L. Montebugnoli</i>	6
Diagnostic and therapeutic features associated with quality of life of head and neck cancer patients after major surgery <i>M. Gobbo, G. Ottaviani, K. Rupel, R. Di Lenarda, M. Biasotto</i>	7
Brown tumors of oral cavity: 4 new cases and review of the literature <i>C. Lajolo, G.F. Favia, R. Cocchi, M. Giuliani</i>	7
Bisphosphonate level in osteonecrotic bone sequestra: an observational clinical study <i>G. Lodi, E. Varoni, M. Minoli, V. Martini, A. Sardella</i>	8
Prognostic value of DNA ploidy in non-dysplastic oral leukoplakia: preliminary data from an ongoing prospective study <i>R. Marino, D. Malacarne, P. Castagnola, S. Gandolfo, M. Pentenero</i>	8
Oral leukoplakia – a clinicopathological analysis of 127 patients with emphasis on the therapeutical approach and the cancerization rate <i>M. Meleti, E. Merigo, M. Manfredi, L. Manini, P. Vescovi</i>	9
Laser therapy for cystic fibrosis-associated infection <i>G. Ottaviani, M. Gobbo, R. Di Lenarda, S. Zacchigna, M. Biasotto</i>	10
The role of the innate immune response in HPV-related oral and oropharyngeal cancer <i>G. Pannone, A. Santoro, G. Campisi, L. Lo Muzio, R. Leonardi, P. Bufo</i>	10
Graphene coated hydroxiapatite scaffolds for bone regeneration: preparation and characterization <i>V. Perrotti, A. Fontana, A. Piattelli, A. Cataldi, G. Iezzi</i>	11
Evaluation of BP180 and BP230 ELISA in the diagnosis of mucous membrane pemphigoid limited to the oral cavity: preliminary results <i>M. Petruzzi, M. Tampoia, V. De Falco, G. Favia</i>	11
Proteomic identification of salivary biomarkers in 20 patients with Oral Squamous Cell Carcinoma <i>N. Termine, V. Panzarella, L. Lo Muzio, G. Campisi</i>	12
Oral mucositis: a survey on changes in the proteomic profile <i>F. Ardito, G. Colella, G. Campisi, G. Giannatempo, L. Lo Muzio</i>	13
Burning mouth syndrome: the latest research experiences at the school of Milan <i>F. Spadari, L. Azzi, L. Pasina, L. Tettamanti, F. Formaglio</i>	13
Low level laser therapy in oral graft-versus-host disease: a case report <i>A. Cafaro, A. Gambino, D. Conrotto, R. Broccoletti, P. G. Arduino</i>	14
Oral squamous cell carcinoma as a complication of chronic graft-versus-host disease: a case report <i>G. Capocasale, O. Di Fede, D. Ciavarella, G. Campisi, L. Lo Muzio</i>	15

Segmental resection for the excision of two multicystic ameloblastoma <i>G. Capocasale, D. Perrone, R. Mauceri, B. Polizzi, L. Laino</i>	15
Conscious sedation with nitrouse oxide-oxygen in dentistry: a retrospective study on 546 interventions in 199 patients <i>L. Carbone, M. Carbone, A. Gambino, P.G. Arduino, R. Broccoletti</i>	16
Oral involvement in pediatric lichen planus <i>M. Cascone, D. Adamo, A. Celentano, S. Leuci, E. Ruoppo, M.D. Mignogna</i>	17
Mandibular bilateral compound odontoma: histological and morphostructural features by confocal laser scanning microscopy <i>A.P. Cazzolla, V. Spinelli, V. Lacarbonara, V. Crincoli, M.G. Lacaïta</i>	17
PTEN hamartoma tumor syndrome (PHTS) in oral medicine <i>A. Celentano, D. Adamo, E. Ruoppo, S. Leuci, M.D. Mignogna</i>	18
Effectiveness of arthrocentesis in management of patients with temporomandibular joint advanced osteoarthritis <i>G. Chiappe, R. Marino, A. Deregibus, S. Gandolfo, M. Pentenero</i>	18
Marsupialization of a dentigerous cyst in a geriatric patients: a case report <i>A. Cocco, M. Dioguardi, G. Giannatempo, G. Troiano, L. Laino</i>	19
Reflectance confocal microscopy imaging of oral lichen planus: a case series <i>M. Contaldo, C. Maio, M.S. Tammaro, D. Di Stasio, A. Lucchese</i>	19
Possible role of lichenoid inflammation in proliferative verrucous leukoplakia <i>F. Croveri, L. Azzi, L. Cimetti, F. Spadari, L. Tettamanti</i>	20
Psychiatric disorders in burning mouth syndrome <i>D. Di Stasio, R. Migliozi, P. Gritti, R. Serpico, A. Lucchese</i>	21
A review of 50 cases of ameloblastoma in Nigerians <i>M. Dioguardi, A. Cocco, F. Giancola, AO. Adisa, L. Laino</i>	21
Oral involvement in cases of mucous membrane pemphigoid: a retrospective hospital based study <i>A. Elia, A. Gambino, S. Giacometti, L. Carbone, R. Broccoletti</i>	22
Oral angiokeratoma: confocal laser scanning microscopic analysis of six cases <i>G. Favia , A. Tempesta , M. Favia, L. Limongelli, E. Maiorano</i>	22
Diagnostic and therapeutical guidelines of oro-rhino-sinusal glomangiopericytoma <i>G. Favia, A. Tempesta, M. Favia, L. Limongelli, E. Maiorano</i>	23
Early oral squamous cells carcinoma (Eoscc): tridimensional staging, prognostic correlations and 3d surgical treatment <i>G. Favia, A. Tempesta, M. Favia, L. Limongelli, E. Maiorano</i>	24
Oral lichen planus in children: an italian case series with literature review <i>S. Franco, S. Miccoli, G. Campisi, G. Favia, L. Lo Muzio</i>	24
Mitochondrial DNA clonality assay and P53 mutations in oral squamous cell carcinoma and matched neck metastases <i>A. Gabusi, D.B. Gissi, L. Sozzi, M.P. Foschini, L. Morandi</i>	25
Fusion of right upper second premolar with supernumerary teeth: a case report <i>A. Gambino, M. Carbone, L. Carbone, P.G. Arduino, R. Broccoletti</i>	25
Oral onset of extranodal non-hodgkin lymphoma: a retrospective study of 30 case <i>A. Gambino, M. Carbone, D. Conrotto, L. Carbone, P.G. Arduino</i>	26
Low level laser therapy in patients with burning mouth syndrome: a single blind placebo controlled trial <i>M. Garrone, A. Gambino, M. Carbone, P.G. Arduino, R. Broccoletti</i>	27

Salivary proteomic biomarkers of oral squamous cell carcinoma <i>G. Giannatempo, L. Lo Russo, G. Campisi, C. Gallo, L. Lo Muzio</i>	27
Osteonecrosis of the jaw after adjuvant endocrine therapy plus alendronate in a breast cancer patient <i>F. Giancola, O. Di Fede, L. Lo Russo, L. Lo Muzio, G. Campisi</i>	28
Tooth extractions in high-risk patients previously treated for osteonecrosis. Protocol supported by low level laser therapy <i>I. Giovannacci, E. Merigo, A. Sarraj, T. Simonazzi, P. Vescovi</i>	28
Osteonecrosis and implant surgery in patients under bisphosphonates therapy <i>I. Giovannacci, M. Meleti, E. Merigo, M. Manfredi, P. Vescovi</i>	29
Diode laser treatment of a large oral hemangioma <i>M.E. Licata, A. Albanese, M. Dioguardi, G. Giannatempo, G. Campisi</i>	30
Metastatic pleural mesothelioma in the maxillary gingiva <i>M. Lupatelli, G. Ficarra</i>	30
Prevalence of psychiatric disorders in patients with burning mouth syndrome <i>R. Marino, M. Ardore, G. Ferro, S. Gandolfo, M. Pentenero</i>	31
Evaluation of the ploidy status in patients with oral lichen planus <i>R. Marino, G. Marchitto, P. Castagnola, S. Gandolfo, M. Pentenero</i>	31
Salivary gland tumors: an analysis of 409 cases <i>M. Mascitti, A. Santarelli, C. Rubini, A. Zizzi, L. Lo Muzio</i>	32
Low level laser therapy and socket healing in rats treated with zoledronate and dexamethasone: a macroscopic evaluation <i>G. Mergoni, E. Merigo, D. Corradi, R. Maestri, P. Vescovi</i>	33
Cocaine-Induced Midline Destructive Lesions (CIMDL): report of eight cases <i>S. Miccoli, S. Franco, A. Santarelli, G. Favia, L. Lo Muzio</i>	33
Evidence of field cancerization of oral squamous cell carcinoma: a case report <i>V. Panzarella, R. Mauceri, M. Dioguardi, G. Troiano, O. Di Fede</i>	34
Effects of low level laser therapy on the healing of post-extractive socket in rats treated with zoledronic acid and dexamethasone: a pilot study <i>P.M. Passerini, M. Bianchi, R. Sala, O. Bussolati, P. Vescovi</i>	35
Real-time cell analysis by xCELLigence®: a new method for dynamic, quantitative measurement of adhesion and proliferative of cell lines <i>D. Perrone, F. Ardito, G. Campisi, C. Piccoli, L. Lo Muzio</i>	35
Reconstructive oral surgery using Integra® skin substitute: preliminary results <i>R. Pertile, P. Salvatori, M. Bosotti, G.P. Bombeccari, F. Spadari</i>	36
Peri-operative advantages and healing evaluation for Er,Cr:YSGG laser excision of intraoral focal fibrous overgrowth: case series <i>B. Polizzi, M.E Licata, G. Giannatempo, A. De Lillo, O. Di Fede</i>	36
Assessment of a non invasive genetic procedure to early detect potentially malignant oral lesions <i>L. Sozzi, A. Gabusi, L. Morandi, V. Monti, D.B. Gissi</i>	37
Proliferative verrucous leukoplakia associated with HPV infection: surgical approach using a diode laser <i>F. Spadari, M. Porrini, L. Azzi, F. Pallotti, G.P. Bombeccari</i>	38
Immunohistochemical analysis of cytokeratin-19 in the malignant transformation of oral lichen planus <i>F. Spadari, M. Rossi, G. Guzzi, F. Pallotti, G.P. Bombeccari</i>	38

Oral amelanotic melanoma: a case report <i>P. Tozzo, N. Termine, A. De Lillo, D. Ciavarella, G. Campisi</i>	39
Synchronous tumors arising in the hard palate <i>G. Troiano, L. Lo Russo, V. Panzarella, N. Termine, L. Laino</i>	39
Use of a new collagen matrix (mucograft) in soft tissue reconstruction after bioptic excision <i>G. Troiano, D. Ciavarella, M.E. Licata, O. Di Fede, L. Laino</i>	40
Awareness of prevention and treatment of bisphosphonate-related osteonecrosis of the jaws among dental practitioners in Ferrara <i>L. Trombelli, R. Vecchiatini, P. Felisatti, E. Tadres</i>	41

Stomatodynia in oral lichen planus: a case series data analysis of 28 patients

D. Adamo, E. Ruoppo, A. Celentano, S. Leuci, M.D. Mignogna

Oral Medicine Complex Unit, Department of Neurosciences, Reproductive and Odontostomatological Sciences, Head & Neck Clinical Section, "Federico II" University of Naples, Italy

Background. Stomatodynia or stomatopyrosis (burning mouth) is a well-recognized disorder characterized by a burning sensation in one or several oral sites.

Primary Oral Burning (POB) or Burning Mouth Syndrome (BMS) is an essential or idiopathic complaint, in which organic and local/systemic causes cannot be identified and which has no obvious clinical signs.

Secondary Oral Burning (SOB) is caused by local or systemic factors. Oral mucosal diseases such as Oral Lichen Planus (OLP) have been proposed as causative of SOB. Atrophic and ulcerative forms of lichen planus are known to have a burning pain particularly during periods of exacerbation. Cheratotic forms of OLP are usually asymptomatic.

Objectives. The primary endpoint of this study was to describe unusual oral complaints and psychological profiles in 28 patients with cheratotic forms of OLP. The secondary endpoint was to analyze the results of the treatment of the oral symptoms, anxiety and depression in these patients.

Methods. 28 cheratotic OLP patients with SOB attending our Department of Oral Medicine were enrolled during the period from May 2013 to November 2013. Demographic characteristics and clinical information including age, sex, educational level, marital status, job status, associated oral symptoms and systemic diseases were collected. The study was based on the statistical evaluation of questionnaires examining depression and anxiety [the Hamilton rating scale for depression (HAM-D) and the Hamilton rating scale for anxiety (HAM-A)] and pain [Numeric Pain Intensity Scale (NRS) and Mc Gill Pain Questionnaire (MPQ)] administered at first examination and after sixth months of treatment.

Results. Descriptive statistics, the Kruskal Wallis non-parametric tests and Spearman bivariate correlation, were used. The patient age ranged from 50 to 84 years with a mean age of 65.03 (+/-4.91) and a female predominance of 3:1. A lower educational level (7.85 +/-3.80), higher scores in HAM-D (13.96+/-4.91) and in HAM-A (15.32+/-6.18), higher scores in NRS (8.82+/-1.18) and in MPQ (10.54+/-3.88) were found. After sixth months of treatment, the patients had statistically lower scores in HAM-D (5.39 +/-1.69), in HAM-A (5.57 +/-1.57), in NRS (2.39 +/-1.07) and in MPQ (3.56 +/-1.97). Seventeen patients developed SOB 4.41+/-2.81 years after the onset of OLP, three patients developed OLP 2+/-1.73 years after the onset of POB and eight patients showed the two diseases simultaneously.

Conclusions. OLP is a common, chronic mucosal disease associated with a cell-mediated immunological dysfunction. The clinical manifestation is different when various forms, white and red, are considered. White lesions are usually asymptomatic while red lesions, such as erosive, atrophic, ulcerative lesions, require long-term treatment, because of inflammation and severe pain. However, we selected a sample of patients with cheratotic forms of OLP with severe and diffuse oral burning. Oral burning was present also in sites without cheratotic lesions, alleviating during meals and while drinking cold beverages. Other oral symptoms described were xerostomia, a bitter taste, dysgeusia and foreign body sensation. All these symptoms were responsive to topical clonazepam and serotonin reuptake inhibitors.

Future research is needed to give solid support to the hypothesis that the cheratotic form of OLP could be symptomatic or to establish if a subset of patients could present simultaneously two different diseases such as OLP and BMS.

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Outcome of systemic steroid therapy in oral pemphigus vulgaris patients: a retrospective study of 78 patients in 21 years

M. Carbone, A. Elia, A. Gambino, P. G. Arduino, R. Broccoletti

Department of Surgical Sciences, Oral Medicine Section, CIR-Dental School, University of Turin, Italy

Objectives. The aim of this study was to point out a retrospective study on the PV cases treated in our Department in order to compare our data with literature and better outline the characteristics of OPV and of its therapy.

Methods. All the patients with histological diagnosis of PV confirmed by positive DIF (IgG, C3) seen between 1992 and 2013 at the Oral Medicine Section of Lingotto Dental School, in Turin, were included in this study. Diagnostic delays, male/female ratio, average age at diagnosis, oral mucosal and extra-oral involvement, treatment, treatment outcome and adverse reactions were studied.

Results. The male: female ratio was 1:1.33. The average age at diagnosis was 54 years old. The most involved oral sites were cheeks, followed by gums, while extra-oral lesions were mainly present in the pharynx-laryngeal site. Cutaneous involvement was seen in about 30% of the patients, while about 44% of patients had exclusively oral involvement. The average diagnostic delay was about 5 months. The standard systemic therapy usually consisted in the use of a glucocorticoid drug (prednisone) and of an immunosuppressant agent (azathioprine). Complete remission was achieved in about 30% of the patients. The most frequent haematologic side effect observed was leucocytosis, while hypertension was the most frequent cardiovascular side effect.

Conclusions. This is one of the largest OPV cohort from Italy. Our patients were almost exclusively treated by Oral Med specialists in an output Oral Medicine department without the need of hospitalization. We achieved complete remission in about one third of the patients comparable with other data mainly coming from Dermatologic Departments. Side effects of glucocorticoids/immunosuppressants are frequent in PV but in most cases can be prevented/managed. Patients with mild to moderate PV may be treated in an Oral Med output setting safely and effectively but they are very demanding and time-consuming cases.

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DNA methylation analysis by bisulfite next generation sequencing to early detect potentially malignant oral lesions from oral brushing

D.B. Gissi, L. Morandi, A. Tarsitano, M.P. Foschini, L. Montebugnoli

Department of Biomedical and Neuro-Muscular Sciences (DIBINEM - Oral Sciences Unit), University of Bologna, Italy

Objectives. Oral Squamous Cell Carcinoma (OSCC) is often preceded by potentially malignant oral lesions. Many molecular approaches have been investigated to improve the current strategies to reveal lesions predicted to develop oral cancer. Recent data showed that CpG methylation changes may play a role in oral cancer progression (1). Aim of the present study is the development of non invasive, highly sensitive and specific procedure to derive biomarkers to identify premalignant lesions that will undergo malignant transformation.

Methods. Oral brushing DNA from 8 OSCC, 9 leukoplakias with histological moderate dysplasia, 9 lichen planus, 3 benign hyperkeratosis and 8 healthy donors were collected and bisulfite treated. A set of differentially methylated promoter genes in OSCC (GP1BB, ZAP70, p16, MGMT, CDH1, KIF1A, miR137, miR375) were investigated by Next Generation Sequencing (Bisulfite-NGS, 454 Roche). ReadSeqs in Fasta format were analyzed by QuMA (<http://quma.cdb.riken.jp/>). The statistical significance between the normal pool of healthy donors and each lesional sample of all CpG sites were evaluated with the Mann-Whitney U-test.

Results. *GP1BB* hypomethylation was detected in 80% of OSCC cases and in 100% of dysplasia cases. *ZAP70* hypermethylation was found in all cases of OSCC and dysplasia. *miR137* was found to be hypermethylated in 66% of OSCC cases, in 60% of dysplasia cases and in 100% of OLP cases respectively. Finally 3 benign hyperkeratosis and 8 healthy donors revealed no aberrant methylation pattern for all of the 8 markers.

Conclusions. In our preliminary results, bisulfite-NGS analysis of *GP1BB* and *ZAP70* promoter genes allows to discriminate OSCC and oral dysplasia respect to OLP, benign hyperkeratosis and normal samples. DNA methylation analysis from oral scrapings seems to be a promising genetic method to derive biomarkers to identify lesions at high risk to develop OSCC.

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Diagnostic and therapeutic features associated with quality of life of head and neck cancer patients after major surgery

M. Gobbo, G. Ottaviani, K. Rupel, R. Di Lenarda, M. Biasotto

Division of Oral Medicine and Pathology, Dental Science Department, University of Trieste, Italy

Objectives. Treatments for head and neck cancer (OSCC) impact physical, psychological and functional state. Evaluation of life quality (QoL) has become integral part of treatment. OSCC patients were enrolled and improvement of QoL, expressed as "QoL outcomes", was evaluated through the University of Washington Quality of Life questionnaire (UW-QoL) in relation to diagnostic and therapeutic features after major surgery for.

Methods. 130 patients completed the UW-QoL 1 and 6 months after major surgery. The SPSS® software 11.0 (Chicago, Illinois, USA) was employed. For each of the QoL outcomes, the significance of the difference between the time-points was evaluated through a Wilcoxon paired sign rank test. Subsequently, the adjusted correlations of each of the diagnostic and therapeutic features with each of the QoL outcomes were evaluated by backward multiple logistic regressions, building 13 separate regression models.

Results. Significant improving in most features related to QoL was recognizable at 6 months, including functional capacity and pain. Patients subdued to more invasive treatment, had the best QoL's improving between time-points, as well as patients with bigger tumors. Similarly, most patients declared that recreation and going back to daily activity were reestablished within the studied period of time.

Conclusion. Although OSCC survivors suffer from deficits and facial disfigurement and experience several psychological concerns, including fear of recurrence and uncertainty with adjusting life beyond cancer, after major surgery, patients may undergo fast recovery, with overall QoL likely to improve in the short-term. In agreement with literature, a 6-month-evaluation is reliable to assert that functional improvement can be expected after complex reconstructive techniques, with long-term stability. Clinicians must be aware of the importance of dealing with treatment-related issues immediately after surgery.

Brown tumors of oral cavity: 4 new cases and review of the literature

C. Lajolo¹, G.F. Favia², R. Cocchi³, M. Giuliani¹

¹*School of Dentistry, Catholic University, Rome, Italy;* ²*Department of Interdisciplinary Medicine, Complex Operating Unit of Odontostomatology, "Aldo Moro", University of Bari, Italy;* ³*Department of Maxillo-Facial Surgery, IRCCS "Casa Sollievo della Sofferenza", San Giovanni Rotondo, Italy*

Brown tumor is usually a benign lesion characterized by giant cells which arise during hyperparathyroidism (HPTH); rarely these lesions can affect maxillofacial area, causing difficult differential diagnosis especially when HPTH is not known. We present 4 new cases of brown tumors arisen in the maxillofacial area, focusing on clinical presentation: two were males and two females, mean age 50 years (range 35-77 years); three cases were single lesions (case one, peripheral - lower edentulous ridge of the anterior mandible; case two, lower right mandible, central/bone lesion; case three, right lower

edentulous ridge with involvement of the bone – mixed). The fourth one was multiple peripheral (lower mandible, 41 area and upper left maxilla 25 and 27). The lesions appeared brownish in color, esophitic and in some cases pedunculated, not painful, sometime bleeding when traumatized and with a smooth surface. Two patients were affected by parathyroid adenoma (in one case brown tumor was the first sign of HPTH), the third patient had chronic renal failure with secondary to HPTH and the fourth subject had multiple skeletal lesions which were diagnosed to be other brown tumors. Many benign (i.e., abscesses, osteomyelitis, periodontal pathologies, pyogenic granuloma, giant cell granuloma) and malignant (i.e., squamous cell carcinomas, lymphoproliferative disorders and metastasis) lesions can clinically resemble brown tumors, thus biopsy is mandatory. Pathology usually reveals a fibrous stroma with multinucleated giant cells and hemosiderin deposits which can not be differentiated from other giant cell lesions (i.e., giant cell granuloma), thus a careful medical history and blood tests must be carried out in order to detect HPTH. Surgical therapy, together with medical therapy (therapy for HPTH, calcitonin and bisphosphonates) and a screening for other skeletal lesions are recommended.

Bisphosphonate level in osteonecrotic bone sequestra: an observational clinical study

G. Lodi¹, E. Varoni¹, M. Minoli¹, V. Martini², A. Sardella¹

¹Dipartimento di Scienze Biomediche, Chirurgiche e Odontoiatriche, Università degli Studi di Milano, Italy; ²Unità di Odontoiatria, Ospedale Papa Giovanni XXIII, Bergamo, Italy

Bisphosphonates (BP) can bind mineral component of bone matrix, with consequent *in situ* drug accumulation. On the basis of detection of their metabolites in urine, it has been suggested that BP may remain within bone tissue for several years from suspension. However, BP levels within human bone have never been measured yet.

Objectives. This study aimed to directly investigate the presence of BP in bone sequestra from patients affected by bisphosphonate-related osteonecrosis of the jaw (BRONJ).

Methods. An observational study was conducted at the Dental School of the Università degli Studi di Milano and at Unità di Odontoiatria, Ospedale Papa Giovanni XXIII, Bergamo, on patients in current or past BP therapy, and a diagnosis of BRONJ, who had bone sequestra surgically or spontaneously removed. BP levels were measured by means of High Performance Liquid Chromatography coupled to Mass Spectrometry.

Results. 80 bone specimens were collected, 26 of them were used to set up and validate the method, to date reliable only for zoledronate (ZL) detection. The drug was detectable at ng/ml. Data suggested a trend showing a gradual raise of ZL levels with the increasing of years of therapy and a progressive reduction from drug withdrawal.

Conclusions. This is the first study able to detect directly ZL in human bone tissue. Drug accumulation over the time was noted. BP remained within necrotic bone even after several years of drug suspension. These data contribute not only to improve pharmacokinetics knowledge, but also to support the hypothesis that the risk of BRONJ increases with the duration of therapy and does not disappear at the suspension of the drug.

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Prognostic value of DNA ploidy in non-dysplastic oral leukoplakia: preliminary data from an ongoing prospective study

R. Marino¹, D. Malacarne², P. Castagnola², S. Gandolfo¹, M. Pentenero¹

¹Department of Oncology, Oral Medicine and Oral Oncology Section, University of Turin, Orbassano, Italy; ²Department of Advanced Diagnostic Technologies, Biophysics and Cytometry Section, National Cancer Research Institute, Genoa, Italy

Objectives. Reliable clinicopathological or molecular predicting factors of malignant transformation for oral leukoplakia are still lacking. Several retrospective studies suggested a potential predictive role for the presence of DNA aneuploidy. We prospectively assessed DNA ploidy status on a group of patients with non-dysplastic oral leukoplakia to evaluate the predictive role of such biomarker for malignant transformation.

Methods. Tissue samples were obtained from lesions suggestive for oral leukoplakia (certainty of diagnosis C2) in patients without previous history of oral carcinoma or dysplasia. Part of the sample was formalin-fixed to confirm the diagnosis and to assess the presence/absence of dysplasia; another part of the sample was frozen for later measurements by high-resolution DNA flow cytometry (hrDNA-FCM) to assess the DNA index (DI) and the DNA ploidy status. A DI value different from 1 identified a DNA aneuploid status. Malignant transformation represented the assessed clinical endpoint.

Results. 126 lesions from 84 patients were sampled. DNA aneuploidy was observed in 20/126 (15.8%) lesions. Malignant transformation overall occurred in 2 of 126 lesions (1.6%) in a mean follow-up of 25.6 months. One of them had a DNA aneuploid status at first diagnosis: revealing that the presence of aneuploidy was not significantly related to the development of malignant transformation ($p=0.293$ two-tailed Fisher's exact test). All transformation occurred in non-treated lesions, but treatment was not an issue significantly related to transformation.

Conclusions. The present data are not able to support the role of DNA-ploidy as an independent predictive biomarker of malignant transformation in non-dysplastic oral leukoplakia.

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Oral leukoplakia – a clinicopathological analysis of 127 patients with emphasis on the therapeutical approach and the cancerization rate

M. Meleti, E. Merigo, M. Manfredi, L. Manini, P. Vescovi

Department of Biomedical, Biotechnological and Translational Sciences, Center of Oral Pathology and Oral Surgery, Dental School, University of Parma, Italy

Objectives. The aim of the present study is to report a clinicopathological evaluation of 127 patients with oral leukoplakia with emphasis on the therapeutical approaches (e.g. medical therapy, traditional, laser and quantic molecular resonance scalpel surgery) as well as on the cancerization rate.

Methods. Files from patients with a presumptive diagnosis of oral leukoplakia treated at the Center of Oral Pathology and Oral Surgery of the University of Parma, between 1996 and 2012, were retrieved and analyzed. Only cases with histopathological evaluation were furtherly selected. Dysplasia grading was available for all lesions. One hundred and twenty seven patients (69 females – 54.3%; 58 males – 45.7%, mean age 57.7 years) were included. Every lesion was singularly evaluated with regard to the treatment approach, taking into account the outcome and the follow-up.

Results. Two hundred and eighty five lesions (137 homogeneous-148 non-homogeneous) were identified. Among these, 60 (21%) were localized on the upper gingiva, 51 (18%) on the lower gingiva, 6 (2%) on the dorsal surface of the tongue, 34 (12%) on the lateral borders of the tongue, 12 (4%) on the ventral part of the tongue, the rest variously affecting the cheek mucosa, the hard and the soft palate and the lower lip. Mean follow-up was 24.52 months.

Seven out of 65 (10%) lesions in the group of lesions approached through a “wait and see” policy underwent malignant transformation. Three out of 67 (4.5%) in the group of lesions treated with a medical approach developed an oral carcinoma. Among 72 lesions treated with a surgical approach only 1 (1.4%) transformed into a carcinoma.

Conclusions. Surgical approach with Er:Yag laser seems the best approach for treating oral leukoplakia. Seven out of 127 (5.5%) patients developed a carcinoma.

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Laser therapy for cystic fibrosis-associated infection

G. Ottaviani¹, M. Gobbo¹, R. Di Lenarda¹, S. Zacchigna², M. Biasotto¹

¹Division of Oral Medicine and Pathology, Dental Science Department, University of Trieste, Ospedale Maggiore, Trieste, Italy; ²Molecular Medicine, International Centre for Genetic Engineering and Biotechnology (ICGEB), Padriciano, Trieste, Italy

Introduction. One of the major hallmarks in cystic fibrosis epithelium is exacerbated inflammation, accompanied by suppressed ability to clear pathogens. Indeed, the vast majority of these patients become infected with opportunistic pathogens, such as *Pseudomonas Aeruginosa*, that often become resistant to multiple antibiotics. Chronic bacterial pulmonary infections, combined with exaggerated inflammation, cause a progressive decline in lung function, which represents the main cause of morbidity and mortality in cystic fibrosis patients.

Aim. To assess the anti-microbial activity of different blue laser protocols on *Pseudomonas Aeruginosa* biofilms.

Materials and methods. *Pseudomonas Aeruginosa* were grown as biofilms, on both glass slides and plastic plates, with a liquid layer covering the biofilm. Subsequently the bacterial biofilms were irradiated with a blue laser using two different protocols: 300mW/cm², 100J, 300sec (Tr1) and 600mW/cm², 200J, 600sec (Tr2). Bacterial growth was assessed in Tr1, Tr2 and control groups 6 hours later. Moreover, we have also largely worked on the technological aspect, developing a new prototype of diode laser specifically, created by K-Laser Company, equipped with a mechanical machine, conveniently designed to provide uniform irradiation to different multiwell plates (12, 24 and 96 plates).

Results. Both Tr1 and Tr2 treatments significantly reduced cell viability and bacterial growth compared to the control group. The new prototype used for the present study allowed a uniform irradiation, with a minimum difference, in term of standard deviation, between wells belonging to the same group.

Conclusion. Both Tr1 and Tr2 blue laser protocols showed a marked and reproducible anti-microbial effect on *Pseudomonas Aeruginosa* biofilms. Due to its anti-microbial activity, the blue laser could facilitate the penetration of antibiotic drugs into a bacterial biofilm in cystic fibrosis patients.

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The role of the innate immune response in HPV-related oral and oropharyngeal cancer

G. Pannone¹, A. Santoro², G. Campisi³, L. Lo Muzio⁴, R. Leonardi⁵, P. Bufo¹

¹Department of Clinical and Experimental Medicine, Section of Pathological Anatomy, University of Foggia, Italy;

²Department of Laboratory and Services, Section of Histopathology, Fondazione di Ricerca e Cura Giovanni Paolo II Università Cattolica del Sacro Cuore (UCSC), Campobasso, Italy; ³Department of Surgical, Oncological and Stomatological Disciplines (Di.Chir.On.S.), University of Palermo, Italy; ⁴Department of Experimental and Clinical Medicine, Dental Clinic, University of Foggia, Italy; ⁵Department Medical-Surgical Specialties, Section of Oral Medicine, Policlinico, University of Catania, Italy

Introduction. During the last 20 years, the incidence of HPV-associated oropharyngeal cancer is increased. Principal actors of the innate immune response against HPV are represented by the TLRs (Toll like receptors). On the other hand different studies have reported that HPV can directly inhibit the functions of the TLRs pathway through interferons (IFNs). There are very few preliminary studies on the role of TLRs mediated HPV clearance in human oncology. Our study aim has been to evaluate whether TLR4 identifies HR-HPV integration state in OSCC.

Methods. Protein levels of TLR4 in OSCC were assessed using Immunohistochemistry (IHC). *In situ* hybridization (ISH) for HPV-DNA detection in morphological context and Pyro-sequencing method have been performed in order to detect viral integration or episomic status. The relationship between TLR expression with or without HPV infection has been elucidated.

Results. ISH HPV positive samples have reported lower TLR4 intensity than negative samples and it has confirmed by statistically significant difference ($p = .002$). There is no statistical correlation between TLR4 intensity and PCR HPV results ($p > 0.05$). Point-biserial correlation coefficient revealed statistically significant association between TLR4 expression and HR-HPV integration status ($p = .0001$) and between TLR4 expression index and HR-HPV infection ($p = .001$).

Conclusions. We retain that TLR4 down-regulation is not associated to the histological tumoral grade but rather to HPV-16 infection and to its integration state into the host DNA.

Graphene coated hydroxiapatite scaffolds for bone regeneration: preparation and characterization

V. Perrotti, A. Fontana, A. Piattelli, A. Cataldi, G. Iezzi

Department of Medical, Oral and Biotechnological Sciences, University "G. d'Annunzio" Chieti-Pescara, Italy

Objectives. Currently, an extraordinary interest is seen to explore the potential of graphene for applications in biomedical and regenerative engineering. The aim of the present study was to design, prepare and characterize new hybrid graphene-hydroxyapatite (HA) based scaffolds for bone regeneration.

Methods. The materials, porcine bone derived HA (Apatos, OsteoBiol®, Tecness, Coazze, Italy) and equine bone derived HA added with collagen (Gen-Os, OsteoBiol®, Tecness, Coazze, Italy) were developed by coating HA granules with graphene oxide (GO), prepared by a modified version Hummers method. Graphene samples were characterized by Raman, SEM, TEM and AFM spectroscopy. *In vitro* MTT analysis, indicative of cellular metabolic activity, was performed on human gingival fibroblasts (HGF) cultured on the hybrid prototypes.

Results. Preliminary TEM measurements highlight a good exfoliation of the different graphene derivatives, with the majority of graphene samples composed of one to three layers and an hybrid characterized by a good and homogeneous coating of the HA granules, as confirmed by Raman and other microscopy measurements. *In vitro* preliminary MTT analysis on HGF shows no toxic effects of GO, whereas GO-enriched HA improves the metabolic cellular response when compared to HA alone up to 7 days of culture.

Conclusions. The obtained materials appear to be very promising for regenerative engineering applications. Further investigations will be conducted to assess the osteoinductive potential of the newly developed materials.

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Evaluation of BP180 and BP230 ELISA in the diagnosis of mucous membrane pemphigoid limited to the oral cavity: preliminary results

M. Petruzzi, M. Tampoia, V. De Falco, G. Favia

DIM- Section of Dentistry, University of Bari "Aldo Moro", Bari, Italy

Objectives. Mucous Membrane Pemphigoid (MMP) is the clinical phenotype of a group of rare autoimmune blistering diseases characterized by autoantibodies directed against different structural proteins in epithelial basement membranes. Diagnoses of MMP is routinely verified by direct immunofluorescence (DIF) of oral mucosa biopsy tissue. ELISA detection of autoantibodies in serum is now employed for the diagnosis of pemphigoid and for monitoring the disease activity. The aim of this study was to evaluate ELISA sensitivity, specificity, PPV, NPV in oral MMP patients.

Methods. Patients with oral lesions compatible with MMP, were enrolled. Two different specimens were obtained during the surgical biopsy: one for the histopathological assessment and the other for the DIF. ELISA plates, precoat-

ed with recombinant ectodomains of the epitope NC16a of the BP180 antigen and carboxy-terminal domains of BP230 antigen were used. All ELISAs were performed according to the manufacturer's instructions. Values greater than 8,7 U/ml were considered positive. Histopathological and DIF results were considered as the gold standard. Global validation of the test results was established by calculating the sensitivity, specificity and both the positive and negative predictive values.

Results. Sixty-four patients were enrolled (M:F=1:4). Ages ranged from 40 to 82 years (mean 61 years). There were 30 patients with MMP, 16 patients with OLP, 14 affected by PV, 3 lichenoid dysplasia and 1 erythema multiforme. ELISA sensitivity and specificity was respectively 47 and 79%. PPV percentage was 67% while NPV was 63%.

Conclusions. In suspected oral MPP, both ELISA tests and histopathological + DIF have to be performed because of ELISA low sensitivity.

Although BP180 and BP230 are the major target antigens in patients with MMP limited to the oral cavity, they are not the only. This aspect may explain the low sensitivity rate of ELISA in oral MMP when used as the sole diagnostic support.

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Proteomic identification of salivary biomarkers in 20 patients with Oral Squamous Cell Carcinoma

N. Termine¹, V. Panzarella¹, L. Lo Muzio², G. Campisi¹

¹Department Surgical, Oncological and Oral Sciences, University of Palermo, Italy; ²Department Clinical and Experimental Medicine, University of Foggia, Italy

Objectives. Saliva has been proposed as a potential diagnostic fluid combined with proteomic analysis. The aim of this study is to assess the proteomic salivary profile using SELDI-TOF-MS technology in patients with Oral Squamous Cell Carcinoma (OSCC), grouped in relation to the TNM staging and compared with healthy subjects.

Methods. In this secondary hospital based case-control study, patients with confirmed histopathological diagnosis of primary untreated OSCC as "cases" and healthy age- and sex-matched subjects as "controls" were consecutively enrolled, after informed consent. Saliva (5 mL) was collected by spitting directly into a clean 15 mL conical tube, aliquoted and stored at -80°C until use. SELDI-TOF Q10 ProteinChip system was used to screen for differentially expressed proteins in the saliva samples according to the manufacturer's instructions (BioRad Inc). Univariate statistics and Roc plot were used for data analysis.

Results. Twenty cases (6 M, 14 F, middle age 66.8 yy) and 20 controls (8 M, 12 F, middle age 61.9 yy) were included. In cases, seven were early-EsOSCC (3 stage I and 4 stage II) and 13 were late-LsOSCC (7 stage III and 6 stage IV). Proteomic analysis showed significant statistical differences in peptide profile in control vs OSCC and in EsOSCC vs LsOSCC samples ($p < 0.05$). The differentiated pattern between overall OSCC and controls consisted of one peptide peak (8940-ROC:1), between EsOSCC and controls of four peptide peaks (7096-ROC 0.93; 12712-ROC:0.89; 8086 - ROC: 0.93 and 11002 - ROC:0.93) and between LsOSCC and EsOSCC of one peptide peak (6026-ROC 0.80).

Conclusions. Although with limitation of the small sample size, this first study suggests that saliva contains proteomic signatures that could serve as biomarkers for OSCC at different stages. Once validated on a large clinical cohort, oral fluid proteomic based on SELDI-TOF-MS technology may be extensively used as a promising new non-invasive tool for early diagnosis in oral cancer patients.

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Oral mucositis: a survey on changes in the proteomic profile

F. Ardito¹, G. Colella², G. Campisi³, G. Giannatempo¹, L. Lo Muzio¹

¹Section of Oral Pathology, Department of Clinical and Experimental Medicine, University of Foggia, Italy; ²Department of Head and Neck Surgery, II University of Naples, Italy; ³Department of Oral Sciences, Section of Oral Medicine, University of Palermo, Italy

Objectives. Oral mucositis is the most severe complication of anticancer therapy. It occurs in 40-85% of patients during chemotherapy and radiotherapy but also in patients who have undergone hematopoietic stem cell transplantation. The symptoms for oral mucositis are burning and severe pain oral, spontaneous bleeding, dysphagia, dysarthria and odynophagia; especially pain and burning sensation on swallowing contribute to decreased quality of life for oncologic patients and, in severe cases, may also force the patient to feed parenterally (1). Furthermore, if the mucositis is severe it can lead to partial or complete interruption of radiotherapy before completion of the treatment protocol with consequent worsening of the prognosis (2, 3). Dentists must be familiar with the necessary interventions, in order to help the patient during the course of the treatment and prevent the interruption. Certain measures may help minimize the symptoms associated with oral mucositis; however, further research is required, focusing on lesion prevention prior to treatment initiation. To this end, it has been investigated the salivary proteome of cancer patients who developed oral mucositis, post chemotherapy and/or radiotherapy. In addition, we compared the salivary proteome of the same subjects before developing oral mucositis and immediately after the treatment for the mucositis. The analysis was made with SELDI technology.

Methods. In the current study, 55 saliva samples of patients suffering from different types of cancer were analyzed. The saliva was collected in three times: before the development of mucositis, when it was diagnosed and after the resolution of this pathology. All samples were analyzed by SELDI-TOF/MS analysis. It was possible to create cluster peaks in spectra obtained using BIORAD DataManager™ software (Ver 3.5).

Results. From this analysis we identified a list of differently expressed mass peaks (clusters). We have selected some significant peaks in a range of values between 3000 m/z 15000 m/z. In particular, five were found to be differentially expressed: 3343, 3486, 3732, 4132 and 4786 m/z. The analysis of the cluster, we evaluated different patterns of peaks in the three groups; some of these were up regulated, as the peak 3732 m/z in samples pre mucositis, and down regulated, such as the 7101 m/z in the samples pre mucositis.

It is noted, moreover, an important increase of the peak 4132 m/z in samples of mucositis.

Conclusions. Oral mucositis is one of the most frequent complications of cancer therapies. It is, therefore, extremely important that the mucositis is prevented whenever possible, or at least treated to reduce its severity and possible complications. Knowing the salivary proteome and its variations in a state of pre mucositis, mucositis and post mucositis can be useful in order to intervene with preventive tools and better therapies. The association of the peaks 3343, 3486, 3732, 4132 and 4786 m/z, in particular the increase in expression of the peak 4132 m/z in samples of mucositis makes us think that it can be used as biomarker of this condition.

Therefore, if these data will be confirmed on a larger series of patients could identify these proteins and study of targeted therapies. Furthermore, it would be helpful to understand whether these variations are associated with a particular chemotherapy and evaluate longer available cancer therapies replacement.

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Burning mouth syndrome: the latest research experiences at the school of Milan

F. Spadari¹, L. Azzi², L. Pasina³, L. Tettamanti², F. Formaglio⁴

¹Department of Biomedical, Surgical and Dental Sciences, University of Milan, Ospedale Maggiore Policlinico IRCCS Ca' Granda Foundation, Milan, Unit of Oral Pathology and Medicine; ²Department of Surgical and Morphological Sci-

ences, University of Insubria, Ospedale di Circolo Macchi Foundation, Varese, Unit of Oral Pathology; ³Laboratory for Quality Assessment of Geriatric Therapies and Services, Department of Neurosciences, IRCCS, Istituto di Ricerche Farmacologiche Mario Negri; ⁴Azienda della Valtellina e della Valchiavenna, Unit of Pain Therapy and Palliative Treatment, Morbegno, Italy

Objectives. In the latest years, many papers have been published about the aetiopathogenesis, diagnosis and treatment of burning mouth syndrome, which still remains a puzzling condition. Nevertheless, it should be considered that many studies have enlightened several aspects of this syndrome and that a likely solution to the enigma in the next future could be a plausible theory combining the major breakthroughs achieved so far. This presentation deals with the latest evidence emerged from the research programmes conducted at the School of Milan.

Methods. The data collected over the years and drawn from our experience are presented in this paper, including evidence on the main role of trigeminal neuropathic fibers, the auxiliary role played by the saliva and the treatment outcomes with different protocols, among which the most effective turned out to be the use of topical capsaicin. These researches were conducted in collaboration with the Mario Negri Institute for Pharmacological Research during statistical and revising analyses.

Results. Salivary collection demonstrated that patients with primary BMS show a significant reduction in basal unstimulated flows and volumes, while the salivary glands function and production are preserved during stimulation. Regarding the treatment protocols, we reported a success rate of about 70% with the use of topical capsaicin after 1, 3, 6 and 12 months of observation. A statistically significant difference was found in a group of patients who showed a more predominant neuropathic component of the syndrome. In this case the success rate was higher. On the contrary treatment success rates with topical substances in those patients with a more predominant psychogenic origin of the syndrome were unsatisfactory.

Conclusions. The most interesting topic of analysis for the future research programmes will be the necessary unification of the neuropathic and psychogenic schools of thought in order to consider Burning Mouth Syndrome not as an oral-confined disorder, but as a systemic pathology including the involvement of oral mucosae, peripheral nerve endings, and central nervous system areas interconnected in a cause-effect system of pain control disorder.

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Low level laser therapy in oral graft-versus-host disease: a case report

A. Cafaro, A. Gambino, D. Conrotto, R. Broccoletti, P. G. Arduino

Department of Surgical Sciences, Oral Medicine Section, CIR-Dental School, University of Turin, Italy

Introduction. Graft-Versus-Host Disease (GVHD) is an autoimmune inflammatory process, which results from a donor-origin cellular response against host tissues. Patients with oral GVHD manifestation present mucosal erosion and atrophy, lichenoid-hyperkeratotic changes, pseudomembranous ulcerations. When GVHD is manifested in the oral mucosa, the treatment approach should be topically. Topical steroid preparations are the mainstay of local treatment. A low level laser therapy (LLLT) was reported to decrease the severity and duration of oral mucositis associated with radiation therapy as well as reducing patient reports of oral pain.

Case description. We describe a case of a 60-year-old HSCT female with 2 painful ulcers on both borders tongue. The patient was previously diagnosed with an acute lymphoblastic leukaemia. At the beginning, it was obtained a first benefit from the application of topical steroids for about 2 months but the appearance of skin GVHD started systemic steroid (prednisone 25 mg). After about 2 weeks it was found an improvement in skin lesions but with a worsening of the oral erosions on buccal mucosa and soft palate. Was decided to decrease for increase in blood sugar and start LLLT (diode laser 810 nm, fluence 4 J/cm²). After the first 2 sessions there has been an improvement of the lesions and decreased in the reported pain. To the 5 session (after 1 month to laser therapy) lesions disappeared completely.

Conclusions. The elevated analgesic response rate to LLLT, without local anesthesia, indicates a promising treatment modality for patients with unresponsive oral GVHD. The use of the laser could be a valid substitute of systemic

steroid treatment because don't cause any adverse reaction. This result, although not conclusive, are a step forward for enhanced management of this quite common condition.

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Oral squamous cell carcinoma as a complication of chronic graft-versus-host disease: a case report

G. Capocasale¹, O. Di Fede², D. Ciavarella¹, G. Campisi², L. Lo Muzio¹

¹Department Clinical and Experimental Medicine, University of Foggia, Italy; ²Department Surgical, Oncological and Oral Sciences, University of Palermo, Italy

Objectives. Chronic Graft-Versus-Host Disease (cGVHD) is an immunoregulatory disorder which occurs after allogeneic hematopoietic-cell transplantation (HCT) and often shares features of autoimmunity and immunodeficiency. GVHD related oral manifestations include severe oral pain, xerostomia, ulcerative lesions, and mucositis. Furthermore, a major late suggested complication of HSCT is the dramatically increased risk of secondary malignancies including oral cancer and oral cGVHD-related inflammation may be considered a potential risk factor.

Case report. A 51-year-old male patient referred in 1994 to our surgery for cGVHD oral lesions secondary to HCT for acute myelogenous leukemia developed in 1992. In 2010, an incisional biopsy in left retrocommissural region for an erosive lesion was performed and microscopic analysis revealed an intense lymphoplasmacytic inflammatory infiltrate. In 2011, clinical intraoral examination revealed white verrucous plaque lesion associated with ulcerations on the gingiva of the V sextant and on the lower labial mucosa; two incisional biopsies of oral mucosa and an incisional skin biopsy were performed. Microscopic analysis revealed a well differentiated SCC, a moderately differentiated SCC and a skin high grade dysplasia. Patient was surgically treated and is currently in follow up.

Conclusions. Several authors suggest that cGVHD-related inflammation could be an important risk factor for carcinogenesis, also for oral cavity. Then it is recommended close follow-up to all patients treated with HCT, particularly when they develop graft-versus-host disease, and any suspicious oral lesions should be biopsied to rule out dysplasia or malignancy.

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Segmental resection for the excision of two multicystic ameloblastoma

G. Capocasale¹, D. Perrone², R. Mauceri³, B. Polizzi³, L. Laino¹

¹Department Clinical and Experimental Medicine, University of Foggia, Italy; ²Section of Oral Pathology, Department of Clinical and Experimental Medicine, University of Foggia, Italy; ³Department of Surgical, Oncological and Oral Sciences, University of Palermo, Italy

Objectives. The purpose of this study was addressed at the understanding and management in the ameloblastoma treatment, performing a segmental surgical resection. Ameloblastoma represents nearly 1% of all neoplasm located

in the oral cavity. In 80% of cases it could be found in the mandible, of these lesions 70% are located in the molar region or the ascending ramus, 20% in the premolar region and 10% in the anterior part. It is considered as a benign neoplasm with slow growing-pattern and locally aggressive behaviour.

Methods. On the basis of clinicoradiological findings, ameloblastoma is divided into 3 groups: solid or multicystic, unicystic and peripheral. The solid ameloblastoma represents nearly 86% of all lesions; it has a tendency to be more aggressive than the other types with a higher incidence of recurrence. The high rate of recurrence represents a danger for patients. The prognosis for ameloblastoma is more dependent on the method of surgical treatment rather than the histologic type of tumour. Resection with some safe margin is considered the best primary method for treating solid/multicystic ameloblastomas because it results in lower recurrence rates compared with a conservative approach.

Results. In this study we report the treatment of two multicystic ameloblastomas located in the anterior part of the mandible with a surgical segmental resection. Challenges, in this two cases, were related to extension and position of the lesions, which required a careful isolation of the mental foramen.

Conclusions. After a follow-up period of two years no recurrence have been detected. These two cases support the evidence of literature, that considers the surgical resection as the best approach to reduce recurrence in patients with multicystic ameloblastoma.

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Conscious sedation with nitrous oxide-oxygen in dentistry: a retrospective study on 546 interventions in 199 patients

L. Carbone, M. Carbone, A. Gambino, P. G. Arduino, R. Broccoletti

Department of Surgical Sciences, Oral Medicine Section, CIR-Dental School, University of Turin, Italy

Objectives. The aim of this report was to analyse retrospectively the effectiveness of conscious sedation with nitrous oxide in outpatient during a period of 10 years.

Methods. From a standard computerised database, the case records of dental patients treated with inhaled sedation with nitrous oxide, over a 10-year period (2004-2014) were retrospectively reviewed. A descriptive analysis was performed on age, gender, clinical indications and nitrous oxide percentage. A detailed score was reported for patient's and clinician's perception during this modality of treatment; it was classified as 0 (insufficient, described as a not finished session), 1 (sufficient, described as a finished session with difficulties reported), 2 (very good, described as a finished session satisfactory for both clinician and patient), 3 (very good, described by the patients as a wonderful sensation).

Results. A group of 199 Caucasian patients underwent 546 conscious sedation sessions. The group was divided in 82 male and 117 female, mean age 35.9 (range 2-79).

The anxiety was the indication most commonly required for the treatment (54.27%) followed by poor collaboration (14.57%), pediatric age (8.04%), heart diseases (4.52%), mental handicap (4.02%), panic attack (3.51%), vomit reaction (3.01%), vagal hypertone (3.01%), prolonged treatment (1.50%), elderly age (1.50%) and sympathetic hypertone (2.00%).

The nitrous oxide's percentage used ranged between 30 and 70% range.

The score obtained was detailed as follow: 3 in 124 sessions (22.76%), 2 in 354 (64.76%), 1 in 55 (10.02%), 0 in 13 (2.43%).

There was not reported side effects to the sedation technique.

Conclusion. Anxiety and emotional reactions were the most common indications for sedation; in the majority of cases (87.52%, score 2 e 3), conscious sedation was totally satisfactory for both patient and clinician; inhaled sedation technique has been shown safety in all treated cases.

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Oral involvement in pediatric lichen planus

M. Cascone, D. Adamo, A. Celentano, S. Leuci, E. Ruoppo, M.D. Mignogna
"Federico II" University of Naples, Italy

Objectives. To perform an update of the oral involvement of oral lichen planus (OLP) in pediatric patients through a retrospective analysis of a case series and a review of the relevant literature.

Methods. A PubMed search was carried out from 1942 to 2014 and clinical records of patients aged <18 years-old with oral lichen planus were analyzed. In addition, clinical records of pediatric patients with OLP referred at our oral medicine unit between 2010 and 2014 were collected.

Results. Our case series revealed 8 patients aged <18 years-old with OLP while thirty patients have been previously described, for a total of thirty-eight well described cases of oral LP. The analysis of these data showed some differences compared to adult population such as gender predilection (M:F=1:1,1), history for immunological disorders (31.5%), and familiarity (7.8%). Clinically a predominance for the reticular form (76.3%) and localization at buccal mucosae (71%) is reported but among our patients tongue (87.5%) was the most common involved oral site, and none of our cases had extra-oral involvement. We also reported the first case of oral LP in a 9-year-old girl affected by autoimmune polyendocrinopathy-candidiasis-ectodermal dystrophy (APECED).

Conclusions. Differences in oral LP between adults and pediatric patients have been detected but to establish detailed differences in clinical outcomes further investigation and larger case series are needed.

Mandibular bilateral compound odontoma: histological and morphostructural features by confocal laser scanning microscopy

A. P. Cazzolla, V. Spinelli, V. Lacarbonara, V. Crincoli, M.G. Lacaíta
Clinic of Dentistry, University of Bari, Italy

Objectives. Odontomas are the most common odontogenic tumors of the oral cavity. They account for 22-67% of all maxillary tumors with an increased prevalence in children and adolescents. They are asymptomatic and are generally diagnosed by radiographic examination. The chosen treatment is surgical excision of the lesion followed by a histo-pathological examination.

The aim of this study is to show confocal laser scanning microscopic features in a case of compound odontoma not easily evident when using an optical traditional microscopy.

Methods. A case of bilateral mandibular compound odontoma in young patient is presented. Radiographic analysis revealed two symmetrical radio-opaque masses with a surrounding thin radio-transparent halo, up to the first lower premolars. Surgical excision of the lesion under general anesthesia was performed. The specimens were fixed in a buffered solution of 10% formalin, embedded in paraffin, cut in 3 µm thick serial sections, stained with hematoxylin-eosin, observed by optical microscope and by Confocal Laser Scanning Microscope (CLSM).

Results. Control at 2 weeks showed excellent healing of the tissues. Follow-up at 6 months showed the absence of recurrence and the eruption of the previously retained teeth. CLSM analysis in autofluorescence underlined a different fluorescence of soft and hard tissues showing different intensity of emission in autofluorescence due to different degrees of calcification. The odontogenic components appeared strongly autofluorescent and presented foci of ectomesenchymal dentinogenetic multifocal differentiation that cause irregularities in the shape and structure of the tissue.

Conclusions. Odontomas are frequent in childhood and are often responsible for dental retention. CLSM allows a careful histo-morphological analysis of odontomas and other odontogenic tumors. The morpho-structural organization of the cellular component is also observed with the possibility of three-dimensional reconstruction.

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PTEN hamartoma tumor syndrome (PHTS) in oral medicine

A. Celentano, D. Adamo, E. Ruoppo, S. Leuci, M. D. Mignogna

Department of Neurosciences, Reproductive and Odontostomatological Sciences, "Federico II" University of Naples, Italy

Objectives. To present a case series of PTEN Hamartoma Tumor Syndrome (PHTS), which include rare disorders linked to PTEN gene's mutations like Cowden Disease (CD) and Bannayan-Riley-Ruvalcaba syndrome (BRRS). The secondary aim is to discuss the characteristic oral clinical features and the role of dentist as first line of defence in early diagnosis.

Methods. Clinical records between 1980 and 2014 of patients were retrospectively analyzed in a south Italian hospital. We selected and collected the clinical data of PHTS patients from the archives of the outpatient clinic of the Oral Medicine Unit, Department of Head and Neck Diseases, "Federico II" University of Naples.

Results. Our single center case series revealed 5 PHTS patients, 3 male (60%) and 2 female (40%), treated between 1995 and 2013, 3 of whom affected by CD and two by BRRS. Their mean (\pm SD) age at the time of diagnosis of the disease was 35,8 (\pm 13,83) years. The 5 patients were referred to the oral medicine unit because of asymptomatic lesions of the oral mucosa, and 4 of them underwent incisional biopsy. Most commonly affected oral site was the alveolar gingiva (4 patients, 80%) followed by tongue and buccal mucosa. The most common clinical presentation was a widespread oral papillomatosis (6 patients, 100%) and concomitant cutaneous lesions were present in the 100% of cases.

Conclusions. Oral manifestations may represent one of the primary clinical detectable manifestations of these rare systemic diseases, for which early diagnosis could decrease the associated mortality and morbidity. The knowledge of these diseases and their clinical features, associated with a multidisciplinary approach, allows to achieve a remarkable diagnostic success.

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Effectiveness of arthrocentesis in management of patients with temporomandibular joint advanced osteoarthritis

G. Chiappe¹, R. Marino¹, A. Deregibus², S. Gandolfo¹, M. Pentenero¹

¹Department of Oncology, Oral Medicine and Oral Oncology Section, University of Turin, Orbassano, Italy; ²Department of Surgical Science, University of Turin, Italy

Objectives. Surgical management of Temporomandibular Disorders (TMD) is still controversial. The gap between non-surgical treatments and advanced surgical procedure seems to be filled by less invasive techniques such as arthrocentesis. Temporomandibular Joint (TMJ) lysis and lavage (L&L) consists of washing the joint with the possibility of depositing a drug or other therapeutic substance. Lavage of the upper joint compartment removes chemical inflammatory mediators and changes the intrarticular pressure. Therefore the aim of this study is to evaluate the efficacy of L&L in a selected and homogeneous group of patients suffering from advanced osteoarthritis.

Methods. Single needle L&L plus viscosupplementation with Hyaluronic Acid were performed under local anesthesia in 9 patients with advanced osteoarthritis of TMJ (IIIb RDC/TMD - Grade III or > on Wilkes's stage) not responsive to conservative treatments. Exclusion criteria were the presence of muscular disorders or any other source of oro-facial pain. Outcome variables were range of mandibular motion and pain intensity measured on Visual Analogic Scale.

Success criteria were maximum unassisted opening > 40 mm and mean pain intensity < 2 on VAS with a reduction of preoperative value of 1,7 cm. The pre and post-operative differences were evaluated by Wilcoxon paired Test.

Results. The cumulative success rate was 66% at the end of the follow-up (11 months \pm 6,6 / min.-max.; range:1-18). The mean maximum unassisted opening pre-operative was 34,3 \pm 6,2 mm, with an increasing of 6 mm and the mean

pain value decreased 3,5 cm on VAS at the end of the follow-up. The pre and post-operative differences for all parameters were statistically significant ($p < 0.05$). No major complications occurred.

Conclusions. Within the limitations of this study arthrocentesis of TMJ was effective in multidisciplinary management patients suffering from advanced osteoarthritis.

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Marsupialization of a dentigerous cyst in a geriatric patients: a case report

A. Cocco, M. Dioguardi, G. Giannatempo, G. Troiano, L. Laino

Department of Clinical and Experimental Medicine, University of Foggia, Italy

Objectives. Dentigerous cysts, which are the most commonly seen odontogenic cysts in the jaws, usually expand asymptotically and extensively. They are surgically eliminated along with the accompanying impacted tooth, because of their destructive nature to the surrounding vital structures, tissues, bone and teeth (1,2). Especially in older patients we have the need to decrease the size of the cysts before their removal, for the risk of creating iatrogenic fractures. This poster shows the case of a large follicular cyst in an elderly patient in which it was decided to perform the marsupialization of the cyst to limit the risks related to classical enucleation.

Methods. The patient come to our attention after the individuation of a dentigerous cyst in the posterior region of the mandible containing an impacted third molar. The surgery was performed with the patient under total anesthesia. We performed a full-thickness incision to expose the bone, subsequently we performed an osteotomy, the cystic wall was broken and drained the liquid contents, tooth was extracted along with a portion of the cyst wall. Then, we proceeded with the suture of cystic epithelium with the epithelium of the oral mucosa to allow a wider communication of the cyst cavity with oral cavity. Finally, the cystic cavity was filled with iodoform gauze.

Results. Even if the recovery was more uncomfortable than a classic enucleation for the longer time, with this type of surgery we avoided iatrogenic fractures.

Conclusions. Certainly the marsupialisation of a cyst is a good therapeutic alternative, in all those cases in which a complete enucleation of the cyst is too dangerous for the patient age, or in cases of very large cysts or even in those cases when may be necessary a functional recovery of element involved in cyst (3).

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Reflectance confocal microscopy imaging of oral lichen planus: a case series

M. Contaldo, C. Maio, M. S. Tamaro, D. Di Stasio, A. Lucchese

Multidisciplinary Department of Medical, Surgical and Odontostomatological Specialties, II University of Naples, Italy

Objectives. Oral Lichen Planus (OLP) is a common disease of unknown aetiology affecting oral mucosae by T-cell mediated chronic inflammation. OLP diagnosis is based on clinical and histological criteria. Pharmacological treatment is useful in symptomatic cases. Life-long clinical follow-up is essential, due to low-risk of malignant transforma-

tion. *In vivo* reflectance confocal microscopy (RCM) offers a real-time virtual biopsy of tissues and does not require surgical excision. Aim of the present work is to image OLP by RCM to preliminarily define its confocal features.

Methods. 5 patients referred at the Oral Pathology Unit, Second University of Naples, affected by a plaque OLP involving buccal mucosae of the cheeks, underwent RCM imaging after informed and written consent. The OLP lesions were imaged *in vivo* by a commercially available handheld RCM (Vivascope3000®, first version, Lucid, Rochester, NY), operating with a diode laser at the wavelength of 830 nm and with a 30x water immersion objective lens. The laser power, varying in the range of 5-10 mW, does not cause tissue injuries and allows to evaluate subsequent 500 µm x 500 µm horizontal virtual stacks from surface to basal layers.

Results. *In vivo* RCM imaging of the plaque OLP correlated the clinically visible epithelial thickening with ortho- and parakeratosis of the upper layers; stratum spinosum keratinocytes showed strongly bright cellular boundaries and quite regular architecture. The epithelial-connective tissue disruption appeared as junctional dark areas corresponding to necrosis of basal keratinocytes and inflammatory infiltrate made up also by inflammatory cells carpet appearing as multiple small dotted bright cells in the connective tissues below the basal layers.

Conclusions. Preliminary imaging of OLP by RCM assessed the feasibility to image and define oral lesions with etiologies similar to interface dermatitis previously described in skin. Further studies are needed to better define criteria for OLP diagnosis by virtual biopsy with RCM.

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Possible role of lichenoid inflammation in proliferative verrucous leukoplakia

F. Croveri¹, L. Azzi¹, L. Cimetti², F. Spadari³, L. Tettamanti¹

¹Department of Surgical and Morphological Sciences, University of Insubria, Ospedale di Circolo Macchi Foundation, Varese, Unit of Oral Pathology, Italy; ²Department of Surgical and Morphological Sciences, Unit of Pathological Anatomy, University of Insubria, Varese, Italy; ³Department of Biomedical, Surgical and Dental Sciences, University of Milan, IRCCS Ca' Granda Foundation, Ospedale Maggiore Policlinico, Unit of Oral Pathology and Medicine, Milan, Italy

Objectives. Proliferative Verrucous Leukoplakia (PVL), is defined as a multi-focal warty leukoplakia, which is associated with a high risk rate of malignancy (85%) (1). The etiopathogenesis is unknown, even if several studies focused their attention upon a possible role of HPV or EBV viruses. The final diagnosis is still retrospective, based on clinical and microscopic evaluation of the lesions. Histopathology is still nonspecific, varying from hyperorthokeratosis to invasive oral squamous cell carcinoma (OSCC), passing through verrucous hyperplasia and dysplasia.

Methods. We report a series of cases of 5 patients with a retrospective diagnosis of PVL, based upon the most recent diagnostic criteria, elaborated by Rocio Cerero-Lapiedra (2), and revised by Isaïc van der Waal in 2013 (3). The 4 females and 1 male involved had multiple incisional biopsies and histopathological examinations. Hematoxylin-Eosin stain, HPV 16 and HPV 18 ISH and HPV subtypes molecular analyses were conducted.

Results. It has often been possible to reveal the presence of lichenoid infiltrate in every patient, such a band-like lymphocytic infiltrate, the presence of sporadic Civatte bodies and the absence of basal layer colliquation. In some cases it was possible to pose the histopathological diagnosis of lichenoid dysplasia.

Conclusion. PVL still remains an enigmatic pathology whose etiopathogenesis still remains unknown.

In addition to an eventual role of HPV virus, a possible immunologic and lichen-like mechanism could have a prominent role, and could explain the epidemiologic data reported in several reviews.

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Psychiatric disorders in burning mouth syndrome

D. Di Stasio¹, R. Migliozi², P. Gritti², R. Serpico¹, A. Lucchese¹

¹Multidisciplinary Department of Medical-Surgical and Odontostomatological Specialties, II University of Naples, Italy;

²Department of Mental and Physical Health and Preventive Medicine, II University of Naples, Italy

Objectives. The aim of this observational study was to evaluate the prevalence of psychiatric symptoms in the population of patients with Burning Mouth Syndrome (BMS).

Methods. 25 patients (mean age 61 y.o.), 23 females (92%) and 2 males (8%), with BMS, of the Dental Clinic of the Second University of Naples, underwent a psychiatric evaluation, with clinical interview and the feeding of five psychometric scales: Visual Analogue Scale (VAS), Hamilton Rating Scale for Depression (HRSD), State-Trait Anxiety Inventory (STAI 1-2), Distress Thermometer (DT) and Brief Fatigue Inventory (BFI). Pearson's analysis (r) was performed for variables distress, pain (VAS score), state and trait anxiety and depressive symptoms on the HAM-D. Distress was tested in a linear regression model with stepwise method, with independent variables VAS, STAI-state and STAI-trait.

Results. 48% of the sample presented a VAS score of severe type, 32% moderate type, and 20% mild type; 56% had depressive symptoms; 91% had a score above the cut-off for state anxiety and 83% for trait anxiety; 68% presented Fatigue (70% severe, 30% mild to moderate); 96% presented Distress (64% severe, 32% moderate type). Pearson's analysis (r) showed that variable Distress correlates with VAS score ($r = 0.723$, $p = 0.0001$), with state anxiety ($r = 0.584$, $p = 0.01$) and trait anxiety ($r = 0.637$, $p = 0.001$). Results showed that distress is influenced by pain (VAS) ($p = 0.0001$) and trait anxiety (STAI Y-2) ($p = 0.01$).

Conclusions. Significant correlation between the intensity of the pain (burning), the presence of anxious trait and the presence of Distress have been found; the anxious trait and a greater intensity of burning are predictors for the development of Distress. These results show the influence of psychiatric disorders in the pathophysiology of BMS so clinicians may suggest a psychiatric consultation to improve treatment efficacy.

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A review of 50 cases of ameloblastoma in Nigerians

M. Dioguardi¹, A. Cocco¹, F. Giancola², A.O. Adisa³, L. Laino¹

¹Department of Clinical and Experimental Medicine, University of Foggia, Italy; ²Department of Surgical, Oncological and Oral Sciences, University of Palermo, Italy; ³University of Ibadan, Nigeria

Objectives. The purpose of this study was the review of 50 ameloblastoma in Nigerian patients observed in the Hospital of Ibadan. Ameloblastoma represents nearly 1% of all neoplasm located in the oral cavity. In 80% of cases it could be found in the mandible: 70% of these involving the molar region or the ascending ramus, 20% the premolar region and 10% the anterior part. Ameloblastoma is considered a benign neoplasm with slow growing-pattern and locally aggressive behaviour.

Methods. We collected the clinicopathologic data of 50 ameloblastoma from the files of the Hospital of Ibadan.

Results. The 50 ameloblastoma occurred in patients from 8 years to 64 years, 25 cases (50%) were in their 3rd decade of life (20-29 years). Males were more frequently affected than females (27 to 23). On the basis of clinicoradiological findings, ameloblastoma were divided into 3 groups: solid or multicystic, unicystic and peripheral. The solid ameloblastoma represents nearly 60% of all cases (29 cases); it has a tendency to be more aggressive than the other types with a higher incidence of recurrence; there were also 20 cases of unicystic and 1 of peripheral. After the surgical treatment we reported 7 recurrences.

Conclusions. This review confirms the evidence of literature about ameloblastoma: the prognosis for ameloblastoma is more dependent on the method of surgical treatment rather the histologic type of tumour.

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Oral involvement in cases of mucous membrane pemphigoid: a retrospective hospital based study

A. Elia, A. Gambino, S. Giacometti, L. Carbone, R. Broccoletti

Department of Surgical Sciences, Oral Medicine Section, CIR-Dental School, University of Turin, Italy

Objectives. To undertake a retrospective review of the general features, oral clinical presentation and outcome of patients with mucous membrane pemphigoid (MMP), over a 20-year period.

Methods. The case records of patients histologically diagnosed as MMP were detailed. A descriptive analysis was performed on age, gender, localisation of lesions, duration of follow-up, treatment modalities, extra-oral involvement, and presence of symptoms. Statistical analysis was performed with the Pearson's chi-square test.

Results. A group of 115 patients were finally studied; 25 men and 90 women. Extra oral locations involved 10% of female and 21% of male, and the eyes association is statistically significant ($\chi^2=4.39$; $p=0.036$). The maxillary gingiva was the site most commonly affected, followed by mandibular gingiva, buccal mucosa, soft palate and alveolar crest. The correlation between symptoms and sites of involvement were statistically significant in the mandibular gingiva ($p=0.004$), in the alveolar ridges ($p=0.006$) and in the soft palate ($p=0.003$). The 43% of patients were treated only with topical therapy, 37% performed topical and systemic therapy, 10% only systemic therapy, while the remaining 10% did not perform any kind of therapy.

Conclusions. Due to our experience in MMP patients with predominantly oral involvement, it is possible to report that: early diagnosis can possibly prevent extra oral involvement and most of the patients can be managed only with topical medication; the management of MMP requires a multidisciplinary approach, remarkably with the dental hygienist because the majority of the lesions are localized in gingiva and require particular treatment.

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Oral angiokeratoma: confocal laser scanning microscopic analysis of six cases

G. Favia¹, A. Tempesta¹, M. Favia², L. Limongelli¹, E. Maiorano³

¹Department of Interdisciplinary Medicine, Complex Operating Unit of Odontostomatology, "Aldo Moro" University of Bari, Italy; ²Medical school, "Aldo Moro" University of Bari, Italy; ³Department of Emergency and Organ Transplantation, Complex Operating Unit of Pathological Anatomy, "Aldo Moro" University of Bari, Italy

Objectives. Oral angiokeratomas are rare capillary vascular malformations, characterised by large vascular spaces and hyperkeratosis of the overlying epithelium and classified in: primary (not associated with systemic disorders) and secondary (in the context of generalized systemic disorders). The most frequent intra-oral localization is the tongue. This work was aimed at describing the main histopathological features of angiokeratomas analysed by Confocal Laser Scanning Microscopy (CLSM).

Methods. Six female patients with angiokeratomas were referred to the Oral Surgery Unit of the University of Bari for cauliflower-like, dark brownish, tongue (4 cases) or lip (2 cases) outgrowths. The lesions were excised and sent for histopathological examination using CLSM equipped with Argon-ion and Helium-Neon lasers, emitting at 488 and 543 nm wavelengths.

Results. Haematoxylin-eosin stains revealed juxta-epithelial large vascular spaces lined by flattened endotheli-

um, localised into the chorion, without muscle involvement, and filled with erythrocytes and organized thrombi. CLSM showed elongated rete pegs, acanthosis, papillomatosis and intense red/green fluorescence of the hyperorthokeratotic surface epithelium and much weaker fluorescence among vascular spaces, due to immature collagen fibres.

Conclusions. CLSM analysis helps to identify typical histopathological features of these rare lesions, thus allowing for proper therapeutic management.

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Diagnostic and therapeutical guidelines of oro-rhino-sinusal glomangiopericytoma

G. Favia¹, A. Tempesta¹, M. Favia², L. Limongelli¹, E. Maiorano³

¹Department of Interdisciplinary Medicine, Complex Operating Unit of Odontostomatology, "Aldo Moro" University of Bari, Italy; ²Medical school, "Aldo Moro" University of Bari, Italy; ³Department of Emergency and Organ Transplantation, Complex Operating Unit of Pathological Anatomy, "Aldo Moro" University of Bari, Italy

Objectives. Glomangiopericytoma is a rare sinonasal tumour demonstrating perivascular myoid phenotype. Maxillary sinus is uncommonly affected. The aim of this work is to underlying diagnostic and therapeutical guidelines of oro-rhino-sinusal glomangiopericytoma.

Methods. We report the cases of 2 oro-rhino-sinusal glomangiopericytoma referred to Complex Operating Unit of Odontostomatology. Patients complain of nasal obstruction, epistaxis, nasal discharge, pain and sinusitis. Intraoral examination highlight paramedian hard palate darkish lump 2-3 cm in size covered by intact mucosa with abnormal surrounding vascular net. Computed Tomography Imaging revealed sinus and nasal opacification with palatal bone erosion. In general anaesthesia, wide local excision with trans-oral access was performed. Specimen was sent for histological examination carried out with Confocal Laser Scanning Microscope (CLSM) allowed an optic and laser scanning analysis.

Results. We noticed a complete healing of the lesions with no evidence of recurrence. Haematoxylin-eosin stain showed closely packed cells, forming short fascicles and sometimes exhibiting a storiform, whorled, or palisaded pattern with many vascular channels. The latter are in the form of capillary-sized to large patulous spaces that may have a staghorn configuration. A prominent peritheliomatous hyalinization is characteristic. CLSM analysis highlighted a well evident perivascular red and green fluorescence positivity due to the presence of a hyalinized collagen fibres dislocations. In other fields of the specimen the fluorescence component revealed a dishomogeneous and spotty positivity due to deposition of collagen fibres around proliferating neoplastic spindle cells with whirling appearance.

Conclusions. It is interesting to keep attention to the fact that there are only few cases in literature with oral involvement. These cases need a combined transoral surgical approach and an accurate histological differential diagnosis.

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Early oral squamous cells carcinoma (Eoscc): tridimensional staging, prognostic correlations and 3d surgical treatment

G. Favia¹, A. Tempesta¹, M. Favia², L. Limongelli¹, E. Maiorano³

¹Department of Interdisciplinary Medicine, Complex Operating Unit of Odontostomatology, "Aldo Moro" University of Bari, Italy; ²Medical school, "Aldo Moro" University of Bari, Italy; ³Department of Emergency and Organ Transplantation, Complex Operating Unit of Pathological Anatomy, "Aldo Moro" University of Bari, Italy

Objectives. WHO TNM Classification of Oral Squamous Cell Carcinoma is bidimensional and does not give information about infiltration in depth, that is very important for prognosis and treatment. The aim of this work is to describe tridimensional clinical staging and surgical treatment, and their prognostic implications.

Methods. We report on the cases of 229 patients which came to our attention in the Complex Operating Unit of Odontostomatology (Policlinic of Bari) from January 1992 to January 2012. At clinical examination, they showed dyshomogeneous leucoerythroplastic lesions in different locations that were classified as Stage 1 or 2 according to TNM Classification (Early Oral Squamous Cell Carcinoma). Moreover, MRI and Intraoral Ultrasonography with 15 MHz oval head were performed to highlight the tumour depth. Before surgical excision, histological diagnosis was obtained by deep citological scraping and microbiopsy. Under general anesthesia, patients underwent a one-time wide excision of the lesions with intraoperative histological analysis of both superficial (anterior, posterior and lateral) and deep margins. Surgical specimens were sent for histological frozen sections analysis to evaluate the 6 following prognostic factors: Tumour Thickness, Invasion pattern (single cell, large front), vascular, neural, salivary gland ducts and muscular infiltration.

Results. After our treatment, we noticed the healing of 90% of the cases (mean time follow-up: 3 years). Local recurrences and regional lymphonodes metastasis were highlighted in 10% of the cases, all associated with the positivity of one or more of the 6 histological prognostic factors.

Conclusions. Considering these results, tridimensional staging and treatment seem to be simple, reproducible and effective, but they requires a multidisciplinary approach with a team of experts comprehending dentists, radiologists, surgeons and pathologists.

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Oral lichen planus in children: an italian case series with literature review

S. Franco^{1,2}, S. Miccoli^{1,2}, G. Campisi³, G. Favia², L. Lo Muzio¹

¹Department of Clinical and Experimental Medicine, University of Foggia, Italy; ²Department of Interdisciplinary Medicine, Odontostomatology Unit, "Aldo Moro" University, Bari, Italy; ³Department of Oral Sciences, University of Palermo, Italy

Objectives. Oral lichen planus is a chronic mucous inflammatory disease. The prevalence in adults ranges between 0.5% and 2%, whereas children are involved just in 0.03% of cases. The purpose of this paper is to review the current literature and to present six Italian cases of Oral Lichen Planus in children (OLPc).

Methods. We reported the data about a retrospective study on 6 cases of oral lichen planus in children. A detailed history was retrieved from clinical notes of each patient. Patients younger than 18 years old were enrolled in the study. All of them had the OLP diagnosis confirmed by clinical findings, history, and histopathology.

Results. The family history for lichen planus was negative in all patients, the mean age was 11 years (range 6-14); there was no cutaneous involvement, whereas 2 patients had concomitant autoimmune diseases. Topical corticosteroids was the only treatment used in 66.67% of patients with good response in a mean time of 4.75 weeks.

Conclusions. The rarity of OLPC may be due to the lack of symptoms that prevents the patient or his family from noticing the presence of the condition, but also to misdiagnosis of the dentist or the paediatrician. Thus, though LP in children is uncommon and oral mucosal involvement extremely rare, clinicians should be aware of its existence and management, and this diagnosis should be taken into account in children presenting oral white lesions.

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Mitochondrial DNA clonality assay and p53 mutations in oral squamous cell carcinoma and matched neck metastases

A. Gabusi, D.B. Gissi, L. Sozzi, M.P. Foschini, L. Morandi

Department of Biomedical and Neuro-Muscular Sciences (DIBINEM - Oral Sciences Unit, University of Bologna) Bologna, Italy

Objectives. Recent data have shown that mitochondrial DNA analysis is a useful technique to differentiate Local Recurrence from Second Primary Tumor in patients experiencing a second squamous cell carcinoma of the oral cavity (OSCC). The purpose of the present study was to see whether mtDNA D-loop analysis can be also applied in patients showing neck nodal metastasis to evaluate the presence or not of a clonal relationship with the index tumor.

Methods. The study population consisted of 8 patients treated for a primary OSCC and presenting synchronous neck-nodal metastases. MtDNA D-loop analysis was performed by deep sequencing and phylogenetic clusterization. Analysis of p53 mutations was additionally performed in each case to compare data obtained by the two different molecular techniques. DNA from exons 5-8 of the p53 gene was analyzed by deep DNA sequencing using 454 GS Junior platform.

Results. The results from mtDNA D-loop analysis (neighbor joining tree) revealed that 7 out of 8 cases (90%) of neck metastases were phylogenetically related with primary OSCC, while in the remaining one patient was not. The results from p53 analysis confirmed the absence of any relationship between neck-metastasis and OSCC in this patient and confirmed the clonal relationship between neck-metastasis and OSCC in other 3 patients, but was not informative in the remaining 4 patients.

Conclusions. mtDNA analysis seems to be more informative in establishing the presence or not of a relationship between neck-metastasis and primary OSCC with respect to the analysis of p53 mutations. The distinction between clonal neck-metastasis and new event not related with primary OSCC can be a key issue in defining a prognosis and may influence the choice of the appropriate treatment.

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Fusion of right upper second premolar with supernumerary teeth: a case report

A. Gambino, M. Carbone, L. Carbone, P.G. Arduino, R. Broccoletti

Department of Surgical Sciences, Oral Medicine Section, CIR-Dental School, University of Turin, Italy

Introduction. Fusion and germination are dental anomalies frequently detailed to identify clinical presentation of double teeth. Due to the union of two or more dental buds, fusion increase in tooth number especially when it takes place between normal and supernumerary teeth. The etiological factors are usually uncertain, probably due to trauma, systemic diseases or genetic factors. The incidence of fusion in permanent dentition is 0.1% in the Caucasian population.

Case description. We describe a case of a 16-year-old boy that decided to remove a supernumerary tooth joined with a #1.5 in buccal position, asymptomatic, mainly for aesthetic reason and to improve his dental hygiene in that position. While orthopantomography did not show the anomaly, CT scan images confirmed the presence of a fusion between the #1.5 and a supernumerary tooth at the apical third of the primary root.

The surgical treatment included an osteotomy followed by the sectioning off the crown and the common root with piezoelectric surgery. A buccal mucoperiosteal flap was performed under local anaesthesia.

After the extraction of the supernumerary tooth, we tried to maintain the vitality of the #1.5, avoiding the supposed endodontic treatment. There was not pulpar exposition of the #1.5 that did not require an orthodontic-restorative treatment. Follow-up appointments included clinical examination and vitality tests at 1-month intervals. A periapical radiograph was performed before the first 3 months.

Conclusion. In dental fusion, it can be considered the possibility to avoid an endodontic treatment if the CT image does not show a joined pulp chambers or joined root canals between the teeth involved.

However, during the surgical treatment, the vitality of the tooth can be compromised and in this case an endodontic-restorative treatment should be performed. Proper clinical and radiographic examination, together with a correct treatment planning are key features of successful vital maintain.

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Oral onset of extranodal non-hodgkin lymphoma: a retrospective study of 30 cases

A. Gambino, M. Carbone, D. Conrotto, L. Carbone, P. G. Arduino

Department of Surgical Sciences, Oral Medicine Section, CIR-Dental School, University of Turin, Italy

Objectives. The aim of this report was to analyse retrospectively the clinical and histopathological features of primary extranodal non-Hodgkin lymphoma (NHL) cases, presenting in the oral cavity as first manifestation of the disease.

Methods. The case records of patients diagnosed as NHL over a 20-year period, were retrospectively reviewed. Included patients were those with histologically confirmed diagnosis, according to the WHO/REAL classification. The Working Formulation has been used to identify the grading. A descriptive analysis was performed on age, gender, risk factor exposure, localisation of lesions, clinical and histological type; continuous variables are expressed as mean \pm SD.

Results. A group of 30 Caucasian patients were studied; two patients were excluded because the oral involvement was secondary: 10 men and 18 women (mean age 66.53 ± 16.95 years), showing a slightly female gender predilection (male: female = 1:1.8). The hard palate was the site most commonly affected (35.7%), followed by the gingiva (21.4%), alveolar mucosa (14.2%), border of the tongue (14.2%), buccal mucosa (7.1%) floor of the mouth (3.5%) and mandibular bone (3.5%). Sixteen cases were described as a not tender swelling (57.1%) and 9 cases as an infiltrating ulceration (32.1%); less frequently, two cases were described as a verrucous gingival lesion (7.1%), and one also as a numb chin syndrome (3.5%). Histologically, cases were described as diffuse large B-cell lymphoma (DLBCL) (57.1%), peripheral T-cell lymphoma (PTCL) (14.2%), mantle cell lymphoma (MCL) (3.5%); at the end, as lymphocytic (7.1%), follicular (7.1%) and MALT (10.7%) lymphomas. Grading of the lesions was divided as follow: high degree (71.5%), medium (3.5%) and low (25%).

Conclusion. Following this analysis, it is possible to report that: the keratinized tissues of the palate and the gingiva are more often involved; oral NHLs usually present as a not painful swelling; DLBCL is the more frequent histopathological subtype.

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Low level laser therapy in patients with burning mouth syndrome: a single blind placebo controlled trial

M. Garrone, A. Gambino, M. Carbone, P. G. Arduino, R. Broccoletti

Department of Surgical Sciences, Oral Medicine Section, CIR-Dental School, University of Turin, Italy

Objectives. The purpose of this study was to evaluate the effectiveness of Low Level Laser Therapy (LLLT) in patients with burning mouth syndrome (BMS) and verify if the benefits on symptoms are due to placebo therapy. A further comparison of efficacy was performed with pharmacological therapy (topical clonazepam).

Methods. The patients were divided into three therapeutic groups. The first group received LLLT with a diode laser (980 nm, 10 Joules/cm², 0.3 W). The second group received a placebo laser treatment. The third group was treated topically with clonazepam for twenty-one days. The effectiveness in reducing symptoms was evaluated by compiling the VAS (Visual Analogue Scale) scale, the McGill pain questionnaire, the PPI (Present Pain Intensity), the OHIP-49 (Oral Health Impact Profile). Moreover, the HADS (Hospital Anxiety and Depression Scale) and GDS (Geriatric Depression Scale) questionnaires evaluated the efficacy of the treatment proposed regarding the anxiety-depression profile.

Results. Forty-one patients were finally analyzed (mean age 66.29 years). During the follow-up of three months, we reported a significant improvement in pain reduction (88.2% in the laser group and 83.3% in the placebo laser group, without a statistical significant difference); however, only the 58.3% of patients treated with clonazepam reported an improvement. In these patients, the improvement is significant at the end of therapy. None of the treatments significantly influenced the anxious-depressive components.

Conclusions. LLLT improves symptoms of patients with burning mouth syndrome since the first application. LLLT seems to offer higher and more consistent therapeutic results compared to topical therapy with clonazepam.

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Salivary proteomic biomarkers of oral squamous cell carcinoma

G. Giannatempo¹, L. Lo Russo¹, G. Campisi², C. Gallo¹, L. Lo Muzio¹

¹Department of Clinical and Experimental Medicine, University of Foggia, Italy; ²Department of Surgical, Oncological and Oral Sciences, University of Palermo, Italy

Objectives. The aim of the present study is to investigate the presence of proteomic signatures of Oral Squamous Cell Carcinoma (OSCC) in saliva and their use as potential biomarkers for early and non-invasive diagnosis, as well as prognostication.

Methods. Saliva from 45 OSCC patients and 30 healthy controls was analysed by SELDI-TOF mass spectrometry and ProteinChip® technology. Proteomic profiles were tested with differential expression analysis and fold change of protein peaks, principal component analysis, Spearman rank correlation test and hierarchical clustering in order to identify a list of peaks of interest representative of controls, N- and N+ cases. Those peaks were used in a supervised artificial neural network in order to classify samples according to the following conditions: controls vs OSCC, controls vs N-, and controls vs N+.

Results. When compared with controls, four peaks (i.e. 6913, 11948, 13287 and 27280 m/z) were significantly altered in both N- group and N+ group; four peaks (i.e. 3353, 3433, 3482 and 4136 m/z) were selectively altered in N- group; eight peaks were selectively altered in N+ group (i.e. 4038, 7133, 11755, 13746, 13841, 14264, 16807, 17127 m/z). Those peaks were capable to classify 100% of cases and controls, thus being potential diagnostic and prognostic biomarkers for OSCC.

Conclusions. Proteomic profiling of saliva has the potential to provide an effective tool for early diagnosis and prognostication of OSCC.

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Osteonecrosis of the jaw after adjuvant endocrine therapy plus alendronate in a breast cancer patient

F. Giancola¹, O. Di Fede¹, L. Lo Russo², L. Lo Muzio², G. Campisi¹

¹Department of Surgical, Oncological and Oral Sciences, University of Palermo, Italy; ²Department of Surgical Sciences, University of Foggia, Italy

Background. Bisphosphonates-associated osteonecrosis of the jaws (BRONJ) is a serious complication, which has been defined by Bedogni et al. (1) as an adverse drug reaction consisting of progressive destruction and death of bone that affects the mandible and/or maxilla of patients exposed to the treatment with nitrogen-containing bisphosphonates (NBPs) in absence of a previous radiation treatment. Generally, IV NBPs have a strong association with BRONJ than oral NBPs as evidenced by the higher incidence of BRONJ (0-10%) in patients treated with IV drugs than in patients in oral therapy (<1%) (2).

Objectives. The aim of this study was to report a clinical case of BRONJ in an oncologic patient who has been treated with anastrozole and oral NBPs for secondary osteoporosis.

Case report. In February 2014 a 75-year-old woman was referred because of history of pain in the left posterior mandibular region and hypoesthesia/anesthesia of the homolateral inferior lip and chin. In the anamnesis, she had referred to be in therapy with alendronate since 2004, for a history of severe osteoporosis and, in multimodal chemotherapy and anastrozole since 2010 for a diagnosis of breast cancer. Furthermore, left lower molar extraction was performed on March 2013. Clinical examination revealed swelling of the extraoral soft tissue in the left emi-mandible; intraorally, the presence of a mucosal fistula on the left mandibular angle was identified. CT was performed and BRONJ diagnosis was defined with a stage 2A according to Bedogni et al. (1).

Conclusions. Administration of NBP is indicated to treat also osteoporosis anastrozole-induced in oncological patients, showing that patients with hormone receptor-positive early-stage breast cancer taking oral BP could represent a subset in which it would be useful to apply BRONJ prevention protocols.

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Tooth extractions in high-risk patients previously treated for osteonecrosis. Protocol supported by low level laser therapy

I. Giovannacci, E. Merigo, A. Sarraj, T. Simonazzi, P. Vescovi

Center of Oral Laser Surgery and Oral Medicine, Dental School. Department of Biomedical, Biotechnological and Translational Sciences, University of Parma, Italy

Objectives. Trauma during dental surgery is the main predisposing factor for Medication Related Osteonecrosis of the Jaws (MRONJ). Moreover, genetic factors are recognized in the pathogenesis. There are no specific guidelines for the management of tooth extractions in patients under Bisphosphonates Therapy (BPT).

The Authors proposed in 2013 a successful protocol for extractions in patients under BPT supported by Nd:YAG low-level laser therapy (LLLT). The aim was to validate this protocol reporting the data related to its application in high-risk patients because previously affected with MRONJ.

Methods. Eighty-two tooth extractions were performed in 36 patients at the Center of Oral Surgery and Oral Medicine of the University of Parma, Italy. Forty-nine tooth extractions were performed in 21 patients who were previously, successfully treated for MRONJ in a site different from the extraction site (Group 1 - G1). Thirty-nine extractions were performed in 14 cancer patients (6 multiple myeloma; 8 bone metastases) and 10 in 7 osteoporotic patients.

Thirty-three extractions were performed in 15 patients who had MRONJ in the same site of extraction (Group 2 - G2). All these extractions were performed in cancer patients (5 multiple myeloma; 10 bone metastases).

In all patients, intra- and post-operative sessions of LLLT through Nd:YAG laser (power 1.25 W; frequency 15 Hz - fibre diameter 320 µm, 5 application of 1 minute each) were administered. Antibiotic treatment was administered starting 3 days before extraction for at least 2 weeks until complete mucosal healing. Mean follow-up was 18.66 months in G1 (ranging from 3 to 44), 13.93 months in G2 (ranging from 3 to 22).

Results. A mild bone exposure was observed in 2 cases. Such an exposure was treated with Er:YAG laser vaporization and then completely healed.

Conclusions. The data confirmed that laser bio-stimulation is a reliable technique that can be considered in the surgical protocol for patients under BPT.

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Osteonecrosis and implant surgery in patients under bisphosphonates therapy

I. Giovannacci, M. Meleti, E. Merigo, M. Manfredi, P. Vescovi

Center of Oral Laser Surgery and Oral Medicine, Dental School. Department of Biomedical, Biotechnological and Translational Sciences, University of Parma, Italy

Objectives. The mechanism of development of jaw osteonecrosis related to the use of bisphosphonates (BP) and other medications (medication-related osteonecrosis of the jaws - MRONJ) associated with the placement of endosseous implants has not been defined. The administration with intravenously BPs in oncological patients represents a contraindication for implant surgery. However, there is no full agreement on implant management of patients taking BPs for osteometabolic diseases.

The purpose of this analysis is to report the experience with 18 patients who developed necrosis around implant-site.

Methods. Eighteen patients (7.2% - 13 F, 5 M, mean age 65.7) with peri-implant bone necrosis were selected in a group of 250 patients with MRONJ, at the Center of Oral Laser Surgery and Oral Medicine of Parma.

The patients were divided into 2 groups: Group 1 - patients who developed necrosis immediately after implant placement and defined as "implant surgery-triggered" MRONJ; Group 2 - patients who developed necrosis distant from implant placement and defined as "implant presence-triggered" MRONJ.

Groups 1 and 2 were compared with patients under BP therapy who received implant surgery without developing necrosis in the implant areas, but in other sites (Group 3).

Results. Group 1: 7 patients (38.89%). MRONJ was diagnosed in a time-range from 2 to 10 months. In this group, 2 patients (28.57%) were oncological and 5 were non oncological (71.43%). Group 2: 11 patients (61.12%). MRONJ was diagnosed in a time-range from 2 to 15 years. In this group, 9 patients (81.82%) were oncological and 2 were non oncological (18.19%). Group 3: 11 patients (4.4%): 6 were oncological (54.55%) and 5 were non oncological (45.45%).

Conclusions. The aetiology of MRONJ is multifactorial and probably involves a genetic predisposition. This analysis shows that not only the surgical procedure but also the presence of dental implants could lead to a non-negligible risk also in non oncological patients.

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Diode laser treatment of a large oral hemangioma

M. E. Licata¹, A. Albanese¹, M. Dioguardi², G. Giannatempo², G. Campisi¹

¹Department of Surgical, Oncological and Oral Sciences, University of Palermo, Italy; ²Department of surgical sciences, University of Foggia, Italy

Background. Several options can be taken into account to treat hemangiomas; the most considered is the surgical excision, although total removal is not always possible, especially for large lesions, since vital structures can be involved. Another treatment includes the diode laser therapy.

Objectives. The aim of this study was to report a clinical case of micro-invasive treatment of a large oral hemangioma in the buccal mucosa using a 900 nm diode laser.

Case report. A 49-year-old female patient was referred to our sector of oral medicine reporting difficult chewing, swelling, and occasionally bleeding, from a congenital neof ormation. Clinical examination revealed a dark blue and multiglobular (size 5x3 cm) lesion of the right buccal mucosa. After diascopy, loss of normal coloration in the place of the lesion was observed. After the eco-doppler evaluation, a diagnosis of congenital haemangioma was formulated, and the patient was treated by photocoagulation by diode laser at 900 nm wavelength, and 2.5 W of power, in continuous wave mode for 90 s. Irradiation was delivered by means of a flexible quartz fiber that was kept 2-3 mm away from the lesion. Treatment was performed without topical, local, or general anesthesia, in six-monthly-sessions. All stages of treatment and healing were photographically documented. After the treatment, the lesion was blanched and visible shrinkaged. No adverse effects (atrophy, scars, hyper- or hypopigmentation) were observed after the treatment. No intra and postoperative pain was reported by the patients. On 3-months follow-up, no recurrence was observed.

Conclusions. Likewise reported by other studies, diode laser photocoagulation treatment proved to be an useful method for the treatment of oral hemangiomas. For the safety of use and the absence of intra and postoperative discomfort for patients, it would be considered a valuable tool in the treatment of large hemangiomas.

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Metastatic pleural mesothelioma in the maxillary gingival

M. Lupatelli, G. Ficarra

Centro di Riferimento per lo Studio delle Malattie Orali, AOUC Careggi, Firenze, Italy

Malignant mesothelioma is a rare primary neoplasm that derives from mesothelial surfaces, pleura (65-70%), peritoneum (30%), tunica vaginalis testis and pericardium (1-2%). Male are affected more frequently than females (ratio 5:1); they are mainly adults in their fourth to seventh decade. It usually develops as a result of exposure to asbestos. There are three different histologic types: epithelioid (60%), sarcomatoid (10-20%), and biphasic (20-30%). Metastasis occurs at a late stage of the disease through direct invasion into adjacent tissues such as lymphatic and hematogenous dissemination. The most common sites are lungs, kidney, brain, uterus, adrenal glands, heart, pancreas, skin, lymph nodes, thyroid and bone marrow. Generally metastases of the oral cavity are uncommon in order only of 1% of oral malignant tumors. Most oral metastases involve the jaw bones more than soft tissues with a ratio of approximately 2:1, in particular mandibular molar and premolar regions. About oral soft tissues, the attached gingiva is the most common affect site. In the current report, the case of 52-year-old man with maxillary gingival metastasis from pleural mesothelioma is presented. From the results of the literature search, the tongue is the most common site of metastases from malignant mesothelioma. To the best of our knowledge, this is the second report about metastasis of mesothelioma to the maxillary gingiva.

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Prevalence of psychiatric disorders in patients with burning mouth syndrome

R. Marino¹, M. Ardore¹, G. Ferro², S. Gandolfo¹, M. Pentenero¹

¹Department of Oncology, Oral Medicine and Oral Oncology Section, University of Turin, Orbassano, Italy; ²Department of Clinical and Biological Sciences, Mental Health Department, University of Turin, "San Luigi Gonzaga" Medical School, Orbassano, Italy

Objectives. Burning Mouth Syndrome (BMS) is an enigmatic chronic pain condition that affects 1.5–5.5% of postmenopausal aged women. Recent studies on pathophysiology have identified dysfunctions in the peripheral and central nervous and comorbidity with psychiatric disorders. The present study evaluates the prevalence of psychopathological disorders in BMS patients according to the criteria of the DSM-IV-TR for Pain Disorder.

Methods. 60 BMS patients have been administered clinical interview, pain and psychometric questionnaires: Toronto Alexithymia Scale (TAS-20), Hamilton Anxiety Rating Scale (HARS), Montgomery & Asberg Depression Rating Scale (MADRS), Visual Analogue Scale (VAS), Paykell list (evaluation of life events).

Results. The mean TAS-20 score was 76.5 ± 8.5 and identified 44 alexithymic subjects (73.3%). The other ratings had the following mean values: HARS 23.6 ± 8.0 resulting 52 patients (86.7%) positive for anxiety; MADRS 7.9 ± 5.3 resulting in 9 patients (15%) positive for depression; VAS 7.6 ± 1.7 . 31 patients (52%) reported life events in the six months before the onset of BMS. Alexithymia is significantly related just to the depressive traits identified by the MADRS score ($p=0.02$).

Conclusions. The prevalence of alexithymia in BMS patients seems to be significantly high when considering that the reported prevalence in general population is lower than 10%. The present data confirm the first observation of a high occurrence of alexithymic traits in BMS subjects reported about 20 years ago. The presence of the already known psychological disorders and of such personality traits are even more stressing the complex personality of BMS subjects, with potential implication in the patient-doctor relationships.

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Evaluation of the ploidy status in patients with oral lichen planus

R. Marino¹, G. Marchitto¹, P. Castagnola², S. Gandolfo¹, M. Pentenero¹

¹Department of Oncology, Oral Medicine and Oral Oncology Section, University of Turin, Orbassano, Italy; ²Department of Advanced Diagnostic Technologies, Biophysics and Cytometry Section, National Cancer Research Institute, Genoa, Italy

Objectives. Oral Lichen Planus (OLP) is a potentially malignant disorder with a quite low incidence of malignant transformation. Several studies assessed the role of DNA content as a biomarker in oral oncology for both malignant

and premalignant lesions. This study aims to determine the degree and frequency of DNA-aneuploidy in OLP patients as assessed by high-resolution DNA flow cytometry (hr DNA-FCM) on fresh/frozen samples.

Methods. OLP patients referred to our clinic and scheduled for incisional biopsy were consecutively enrolled. Samples were subdivided for formalin fixation and assessment of both OLP diagnosis and ruling out of dysplasia by routine hematoxylin and eosin staining and for immediate storage at -20°C for later hr DNA-FCM. Nuclear DNA content FCM measurements (hr DNA-FCM). DNA Index (DI) values were evaluated. DNA diploid and aneuploid sublines have values, respectively, of $\text{DI} = 1$ and $\text{DI} \neq 1$.

Results. Sixty eight OLP patients entered the study: 57 patients with a reticular and plaque clinical form and 11 with an atrophic-erosive form. A DNA-aneuploid status was overall observed in 2 out of 68 cases (3%): 1 near-diploid ($\text{DI} \neq 1$; $\text{DI} < 1.4$) and 1 high-aneuploid ($\text{DI} \geq 1.4$). When considering the clinical aspect of the OLP lesions, all the aneuploid cases showed a reticular form, but the low prevalence of DNA-aneuploid status did not allow the assessment of statistical significance.

Conclusions. DNA-aneuploidy does not seem a common event in OLP lesions. When comparing the present data to the results from our previous studies on leukoplakia using the same methods, OLP seems to have a lower rate of DNA-aneuploidy when compared to non-dysplastic leukoplakia (3 versus 19%).

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Salivary gland tumors: an analysis of 409 cases

M. Mascitti¹, A. Santarelli¹, C. Rubini², A. Zizzi², L. Lo Muzio³

¹Department of Clinical Specialistic and Dental Sciences, Marche Polytechnic University, Ancona, Italy; ²Department of Neuroscience, Marche Polytechnic University, Ancona, Italy; ³Department of Surgical Sciences, University of Foggia, Italy

Objectives. The aim of this study was to determine the range of all histologically diagnosed salivary gland tumors along with age range, sex distribution, site of presentation and histological type over a 13-year period, and to compare the data obtained with those published in literature.

Methods. The samples of 409 salivary gland tumors treated between 2000 and 2013 were retrieved from the archives of the Institute of Pathology, Marche Polytechnic University, Ancona. Clinicopathological data were examined, and all tumors were classified according to the 2005 WHO histological classification of salivary gland tumors. Data were analysed using GraphPad Prism software version 5.00 for Windows. Statistical significance was set at $P < 0.05$. Significant differences between groups were determined using Mann-Whitney and Kruskal-Wallis tests.

Results. Results showed 318 benign (77.75%) and 91 malignant tumors (22.25%), with a slightly higher incidence in women, but without reaching statistical significance. The only exception was the Warthin tumor, more frequent in men (73.4%, $P < 0.05$). The mean age of onset of salivary gland tumors were 55.3 years, with a peak of incidence in the 5th decade. The mean age at diagnosis of malignant tumors (61.5 years) was significantly higher than benign tumors (53.5 years). Parotid gland was the most common affected site (277 cases), followed by minor salivary glands (79 cases), and the submandibular gland (26 cases), while no case of tumor was found in sublingual gland. Among all the benign tumors, the most frequent was the pleomorphic adenoma (163 cases), followed by Warthin's tumor (64 cases). Polymorphous adenocarcinoma was the most common malignant tumor (33 cases).

Conclusions. The comparison of our results with those found in the literature showed several differences, highlighting the high variability of the epidemiological data of salivary glands tumors. Therefore a greater uniformity of classification criteria and analysis is needed, also in relation to the various populations.

Low level laser therapy and socket healing in rats treated with zoledronate and dexamethasone: a macroscopic evaluation

G. Mergoni¹, E. Merigo¹, D. Corradi², R. Maestri², P. Vescovi¹

¹Oral Medicine, Pathology and Laser-assisted Surgery Unit, Dentistry Section, University of Parma, Italy; ²Department of Pathology and Laboratory Medicine, Section of Pathology, University of Parma, Italy

Objectives. Effective strategies are needed to manage dentoalveolar surgery in patients at risk for medication-related osteonecrosis of the jaw (MRONJ)^{1,2}. The aim of this study was to investigate macroscopically the effect of Nd:YAG laser therapy on the healing of post extractive sockets in a rat model for MRONJ.

Methods. Thirty male Sprague Dawley rats were randomly divided in 2 groups: treatment group (group T, n=20) and control group (group C, n=10). Rats of group T received zoledronate 0,1 mg/Kg and dexamethasone 1 mg/Kg every 2 days for 10 weeks. Controls were infused with vehicle. After 9 weeks the first maxillary molars were extracted in all the rats. The operative surgical time and the frequency of teeth fractures were recorded. Rats of each group were randomly allocated to two further groups: one underwent laser therapy (Nd:YAG, 1064 nm, 1,25W, 15Hz, 5 min, 7 J/cm²) at the socket area at days 0, 2, 4 and 6 after surgery, the other did not undergo laser treatment. At 8 days from extraction, the socket was clinically assessed with a grading score and the wound area was measured with a dedicate software (ImageJ 1.48v). One way ANOVA was used to compare continuous variables, Kruskal-Wallis or Fisher test was used for categorical variables.

Results. The operatory surgical time and the frequency of teeth fractures were similar in group T and C (126 ± 93 s vs 128 ± 67 s and 47% vs 45%, respectively). Irradiated rats in group T showed a better clinical grading score compared to not irradiated rats (grade I 22% vs 28% - grade II 56% vs 28% - grade III 22% vs 44%, respectively), without reaching statistical significance. The average wound area was similar in group T and C (62609 ± 27989 pxl vs 72926 ± 41226 pxl), both in irradiated and not irradiated rats. One case of clinical ONJ was observed in group T.

Conclusions. The present study did not show a significant clinical effect of laser therapy on post extractive socket healing, maybe due to the small size of sample.

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Cocaine-Induced Midline Destructive Lesions (CIMDL): report of eight cases

S. Miccoli^{1,2}, S. Franco^{1,2}, A. Santarelli³, G. Favia², L. Lo Muzio¹

¹Department of Clinical an Experimental Medicine, University of Foggia, Italy; ²Department of Interdisciplinary Medicine, Odontostomatology Unit, "Aldo Moro" University, Bari, Italy; ³Department of Clinic Specialistic and Stomatological Sciences, Polytechnic University of Marche, Ancona, Italy

Objectives. The prolonged use of intranasal cocaine can destroy the nasal architecture with erosion of the palate, turbinates, and ethmoid sinuses causing cocaine-induced midline lesions (CIMDL). In this study, a series of eight patients with CIMDL has been evaluated, highlighting the difficulties in reaching a correct diagnosis and differential diagnosis.

Methods. The diagnostic procedures followed in these patients with midline destructive lesions included: detailed medical history, extra- and intra-oral examination, histological examination on mucosal biopsies, computed tomography (CT) and MRI, laboratory findings [complete blood count, sedimentation rate, antinuclear antibody (ANA) test, rheumatoid factor, venereal disease research laboratory (VDRL) test, leishmaniasis and fungal serology, ANCA test], and chest X-ray.

Results. All patients had a long history of cocaine abuse by inhalation and complained of epistaxis, halitosis, nasal scabs and obstruction, decreased sense of smell and/or taste, oro-nasal regurgitation of solids and liquids with recur-

rent sinus infections, and chronic facial pain. On clinical examination all patients showed palate perforation with variable nasal structures involvement and presented a strong positivity for ANCA tests with a p-ANCA pattern, whereas chest radiographies were normal. Biopsies of nasal mucosal lesions revealed necrotic tissue with an inflammatory infiltrate, without granuloma or vasculitits in all patients.

Conclusions. Often CIMDL are overlooked in clinical practise, particularly if a history of cocaine inhalation is not sought or volunteered. The essential element for a correct diagnosis of CIMDL would be a detailed medical history. The followed protocol for the CIMDL diagnosis allowed a relatively quick and conclusive diagnosis in all patients. A multidisciplinary approach is mandatory in the management of CIMDL, involving dental professionals, maxillofacial surgeons, and psychologists.

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Evidence of field cancerization of oral squamous cell carcinoma: a case report

V. Panzarella¹, R. Mauceri¹, M. Dioguardi², G. Troiano², O. Di Fede¹

¹Department of Surgical, Oncological and Oral Sciences, University of Palermo, Italy; ²Department of Clinical and Experimental Medicine, University of Foggia, Italy

Objectives. From 1953 (1) the term “field cancerization” has been used to describe an “increased risk of cancer development in the entire upper aerodigestive tract due to multiple genetic abnormalities in the whole region after prolonged exposure to carcinogen” (2). This phenomenon implies the occurrence of multiple primary tumors/potentially malignant disorders as results of cell-molecular aberrations in different independent sites (polyclonal theory) or from the same site through widespread expansion or later spread across the mucosa (monoclonal theory).

Case report. A 63-year-old female patient referred in June of 2014 for exophytic/ulcerative lesion in the hard palate. At the same time, several teeth (1.5, 1.6 and 3.6) with poor prognosis and an incisional biopsy were performed. The histological examination reported a diagnosis of oral squamous cell carcinoma (G1) and the management (imaging and TNM staging) was scheduled. Unfortunately, 30 days after exodontia, one of alveolar sites (3.6) showed proliferative tissue and not healing. A new biopsy was carried out, revealing an histological diagnosis of “epithelium with marked parakeratosis, acanthosis and papillomatosis associated with areas of moderate dysplasia (IIC: PanCK)”.

Conclusions. The features described in different areas of the oral cavity led us to make a diagnosis of oral field cancerization. This condition still must be analyzed in order to clarify the onset and development but, most importantly, a protocol for manage these patients have to be developed. Chemoprevention and cessation of smoking and alcohol may impact new tumors. Amelioration of surgery, radiotherapy, chemotherapy and gene therapy may influence the morbidity and mortality of oral cancer patients, even if a short follow up and the secondary prevention may warrant a life-long surveillance.

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Effects of low level laser therapy on the healing of post-extractive socket in rats treated with zoledronic acid and dexamethasone: a pilot study

P.M. Passerini, M. Bianchi, R. Sala, O. Bussolati, P. Vescovi

Center of Oral Laser Surgery and Oral Medicine, Dental School, Department of Biomedical, Biotechnological and Translational Sciences, University of Parma, Italy

Objectives. Bisphosphonate-Related Osteonecrosis of the Jaws (BRONJ) is a severe complication of bisphosphonate therapy, often triggered by traumatic events such as extractions. Low Level Laser Therapy (LLLT) might turn out to be useful for the prevention of post-extractive BRONJ.

Our aim was to perform a clinical, histological and immunological study, evaluating the effects of LLLT on the post-extractive socket healing in rats treated with zoledronic acid and dexamethasone.

Methods. Ten Wistar rats in the experimental group received zoledronic acid (intraperitoneal) and dexamethasone (intramuscular). Two controls were infused with vehicle. After 8 weeks the first maxillary molars were extracted bilaterally. Half rats of each group had the post extractive sockets irradiated with Nd:YAG laser every other day for 8 days (1064 nm; 1,25 W; 15 Hz; VSP; 5 min; fluence: 117,94 J/cm²; power density: 1769,29 W/cm²). Macroscopic and microscopic evaluation of post-extractive sockets at 8 days was performed, altogether with Western Blot analysis of the expression of markers of bone metabolism (alkaline phosphatase, osteopontin, osteocalcin).

Results. Rats in experimental group showed macroscopic and microscopic delayed healing compared to controls, with modifications of bone density and tissue remodelling. Osteopontin expression was higher in irradiated rats of experimental group.

Conclusions. Our results confirmed that rat is a suitable animal model for BRONJ studies and that an extended therapy with bisphosphonates and dexamethasone is associated with a worsening of the healing process of the post-extractive socket. Further researches with larger populations are needed to test the preventive effect of laser biostimulation on post-extractive BRONJ development.

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Real-time cell analysis by xCELLigence®: a new method for dynamic, quantitative measurement of adhesion and proliferation of cell lines

D. Perrone¹, F. Ardito¹, G. Campisi², C. Piccoli³, L. Lo Muzio¹

¹Section of Oral Pathology, Department of Clinical and Experimental Medicine, University of Foggia, Italy; ²Department of Oral Sciences, Section of Oral Medicine, University of Palermo, Italy; ³Section of Biochemistry, Department of Clinical and Experimental Medicine, University of Foggia, Italy

Objectives. In this study, we report the use of a real-time cell analysis (RTCA) test system, the xCELLigence® RTCA, as efficient tool for a fast growth kinetics analysis of cell lines. This new dynamic real-time monitoring and impedance-based assay allows for a combined measurement of cell adhesion, spreading and proliferation (1).

Methods. We used four representative human OSCC derived cell lines, PE49, HSC2, HSC3 and PE15 cells. The measured impedance values could be correlated to characteristic cell culture behaviours. In parallel, were evaluated proliferation and cell viability of the cell lines by the 3-[4,5-dimethylthiazol-2-yl]-2,5-diphenyltetrazolium bromide (MTT) assay.

Results. Through the analysis we were able to quantitatively characterize the growth kinetics of the cell lines. The results are in agreement with the analysis MTT and for us will be the basis for future studies with respect to these lines.

Conclusions. The advantage of impedance-based measurements is mainly based on these continuous monitoring of cell responses for a broad range of different cells and with different parameters of culture. Therefore, the xCELLigence system can be used as a rapid monitoring tool for cellular viability and used for multiple applications, such as toxicity testing of xenobiotics, biocompatibility of dental materials, tests of invasion and migration using *in vitro* cell cultures (2, 3).

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Reconstructive oral surgery using Integra® skin substitute: preliminary results

R. Pertile¹, P. Salvatori², M. Bosotti¹, G.P. Bombecari¹, F. Spadari¹

¹Department of Biomedical, Surgical, and Dental Sciences, Fondazione IRCCS Ca' Granda Ospedale Maggiore Policlinico, University of Milan, Italy, Unit of Oral Pathology and Medicine; ²Otolaryngology Unit, Department of Neuroscience Legnano Hospital, Milan, Italy

Introduction. The main types of reconstructions after tumor resection in head and neck surgery are based on the use of grafts, traditional flaps and microvascular flaps.

However, all the above-mentioned flaps need of donor site, with potential and variable minor and major complications both at the recipient and donor site. We describe two cases of extensive intraoral defects subsequent to surgical resection and an alternative strategy of reconstructive surgery using the Integra® Dermal Regeneration Template (IDRT).

Methods. In 2012, a 49-year-old male, and a 72-year-old woman with hyperkeratosis of the left buccal region and the right ventral side of the tongue respectively, received histological diagnosis of oral leukoplakia. Both patients have been underwent to surgical exeresis and considering the relative superficiality and amplitude of excision, 3 x 2 cm and 4 x 3 cm resp., the surgical defects were covered with a double layer IDRT (Integra LifeSciences Corp., Plainsboro, NJ). Antibiotics drugs were administered and no sign of infection were visible in the post-operative. After 4 weeks the silicone layer of the dermal substitute was removed. An appreciable re-epithelialization was observed.

By 18 months of follow-up the scar appears to be of a normal mucosa colour and there is no evident retraction of the tissues.

Discussion. Reconstructive surgery to achieve functional restoration of resected head and neck areas, represents a challenge, because of them nodal role within the aesthetic and functional contest. Wide local excision may leave patients with defects requiring complex reconstructive surgery. The choice of reconstruction influenced by patient factors such as age, co-existing medical conditions, length of procedure and fitness for general anaesthesia.

Conclusions. In the cases here reported we have found the use of Integra® to be a safe and viable alternative to traditional methods of wound closure.

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Peri-operative advantages and healing evaluation for Er,Cr: YSGG laser excision of intraoral focal fibrous overgrowth: case series

B. Polizzi¹, M. E. Licata¹, G. Giannatempo², A. De Lillo², O. Di Fede¹

¹Department Surgical, Oncological and Oral Sciences, University of Palermo, Italy; ²Department Clinical and Experimental Medicine, University of Foggia, Italy

Objectives. The erbium lasers are still used mainly for the treatment of bone tissue and the preparation of hard dental tissues, thanks to their wavelengths that have a great affinity for water and hydroxyapatite. That high absorption in water makes their application appropriate also for ablating oral soft tissue but in this regard there are few studies in literature. The aim of this study is to evaluate the safety and efficacy of an Er,Cr:YSGG laser (2780 nm) for treatment of benign oral soft tissue lesions.

Methods. Ten patients with large (>1.5 cm) benign soft tissue lesions of the oral cavity were treated, after superficial desensitization with application of a lidocaine 2.5% + prilocaine 2.5% cream (EMLA®), by Er,Cr:YSGG laser (2780 nm), Waterlase, (BIOLASE Technology, Inc., San Clemente, CA, USA), that is used at 1.50 watts, 20 pps, 8% water and 11% air as recommended by the manufacturer; surgical wound healing occurred by secondary epithelialization. Tissue samples were formalin-fixed and submitted for histological examination and evaluation of microscopic margins. Variables considered were: intraoperative pain and bleeding, use of analgesic drugs, post-operative swelling and healing. Follow up was registered at 3-7-15-30 days.

Results. Histopathological evaluations confirmed diagnosis of six fibromas and four epulis; all margins are free of carbonization. No complications have been registered during or immediately following laser surgery. The immediate postoperative course was excellent, with no pain and no swelling. All patient showed an excellent compliance. Healing was obtained in all cases, with secondary epithelialization: after 1 week was good and after 2 week was completed.

Conclusions. The use of Er,Cr:YSGG laser should be effective in surgical treatment of benign oral soft tissue lesions, thanks to good and fast healing for secondary epithelialization and absence to complications. These data appears promising, although further studies (e.g. RCT) are needed in literature to confirm these preliminary data.

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Assessment of a non invasive genetic procedure to early detect potentially malignant oral lesions

L. Sozzi, A. Gabusi, L. Morandi, V. Monti, D. B. Gissi

Department of Biomedical and Neuro-Muscular Sciences (DIBINEM - Oral Sciences Unit), University of Bologna, Italy

Objectives. The overall survival of patients with oral cancer has not improved significantly during the past 20 years and most of patients is still diagnosed with advanced stage disease. A genetic procedure for the early detection of asymptomatic carcinoma or precursor lesions is an attractive strategy to reduce the burden of Oral Squamous Cell Carcinoma (OSCC). The use of serum, plasma, urine, saliva and exfoliated cells in screening for different types of tumors, has been shown as an effective method for detecting cancer-related genetic and epigenetic alterations, including aberrant promoter methylation. Aim of the present study is to develop a new non-invasive assay, based on brushing of oral mucosa, able to early diagnose OSCC and Oral Premalignant lesions having a high risk to develop OSCC.

Methods. Oral brushing DNA from 10 OSCC and 8 healthy donors were collected and bisulfite treated. A set of differentially methylated promoter genes in OSCC (GP1BB, ZAP70, p16, MGMT, CDH1, KIF1A, miR137, miR375) was investigated by Next Generation Sequencing (Bisulfite-NGS, 454 Roche). ReadSeqs in Fasta format were analyzed by QuMA (<http://quma.cdb.riken.jp/>). The statistical significance between the normal pool of healthy donors and each lesional sample of all CpG sites were evaluated with the Mann-Whitney U-test.

Results. OSCC cases showed a different methylated profile for GP1BB, ZAP70 and miR137 genes. GP1BB hypomethylation was detected in 90% of OSCC cases; ZAP70 and miR137 were found to be hypermethylated in 100% and 66% of OSCC cases respectively. Eight healthy donors revealed no aberrant methylation pattern for all of the 8 markers.

Conclusions. In our preliminary results, DNA methylation analysis on epithelial cells collected brushing the oral mucosa seems to be a promising genetic procedure to distinguish lesions at high risk to develop OSCC. Bisulfite-NGS analysis of GP1BB, ZAP70 and miR137 promoters from oral brushing allows to discriminate OSCC and normal samples.

Proliferative verrucous leukoplakia associated with HPV infection: surgical approach using a diode laser

F. Spadari¹, M. Porrini¹, L. Azzi, F. Pallotti², G. P. Bombeccari¹

¹Department of Biomedical, Surgical, and Dental Sciences, Unit of Oral Pathology and Medicine, Fondazione IRCCS Ca' Granda Ospedale Maggiore Policlinico, University of Milan, Italy; ²Unit of Anatomical Pathology, Fondazione IRCCS Ca' Granda Ospedale Maggiore Policlinico, University of Milan, Italy

Objective. Proliferative Verrucous Leukoplakia (PVL) is of uncertain etiology and may be associated with human papillomavirus (HPV) infection, and mainly affecting older women. Frequently, it is characterized by multifocal and progressive lesions, with a high rate of malignant transformation. There is no effective management reported for PVL and many of the lesions recur after treatment.

We describe a case of PVL of the maxillary gingival tissues treated with diode laser and followed over time.

Methods. A 58-year-old Caucasian male presented with an extensive verrucous hyperkeratosis on the maxillary gingiva and palatal alveolar ridge. No symptom was referred by patient, but he noted a progressive increasing of the lesion size. The patient was non-smoker and non-drinker. Multiple samples of tissue were taken from the lesion.

Results. Microscopically, two samples showed a hyperkeratosis with focal mild degree dysplasia. Some areas showed intraepithelial alteration compatible with HPV infection. One portion of the biopsy specimen, previously frozen, was used for DNA extraction. Viral typing, by direct sequencing of DNA common genomic region L1, showed positive result for subtype 16 HPV research.

We decided for the excision of the lesions, under local anaesthesia, using a diode laser (wavelength 810 nm) set at 4 W in a pulsed wave mode to reach analgesia and then at 2 W in continuous mode to reduce the layer carbonization of the tissues. Diode laser applications were also performed in the days following, in delocalised modality to induce biostimulation effects. At present, 11 months later, the patient has no showed recurrences.

Conclusions. It appears that any association between PVL and HPV may be present in some but not all lesions of PVL. In our case it was believed to be justified the use of diode laser, by considering the high risk of subtype 16 HPV. We suggest a deep ablation at least below the basal layer, to avoid recurrences.

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Immunohistochemical analysis of cytokeratin-19 in the malignant transformation of oral lichen planus

F. Spadari¹, M. Rossi¹, G. Guzzi², F. Pallotti³, G.P. Bombeccari¹

¹Department of Biomedical, Surgical and Dental Sciences, Ospedale Maggiore Policlinico Fondazione Ca' Granda IRCCS, University of Milan, Italy; ²Italian Association for Metals and Biocompatibility Research – AIRMEB, Milan, Italy; ³Unit of Anatomical Pathology, Foundation IRCCS Ca' Granda, Ospedale Maggiore Policlinico, University of Milan, Italy

Objectives. The expression profile of cytokeratin-19 (CK-19) in oral lichen planus (OLP) remains matter of debate. Several studies reported Ck19 immunostaining in dysplastic lesions and carcinomas as a marker of malignant alteration of the epithelium. We investigated whether the degree of expression of CK-19 in OLP lesions is associated with malignant transformation of OLP.

Methods. Of 7 OLP patients, immunohistochemical studies were performed with monoclonal antibodies against CK-19 in OLP lesions who have undergoing malignant transformation. Tissue samples (2 for each OLP patient: first obtained from OLP lesions and second from OLP-related cancer lesions) were fixed in formalin, paraffin-embedded and processed. The expression level of CK-19 was analyzed using Multimer Ultraview Biotin free. As regard CK-19, positive reaction was considered as clear staining within the epithelium (basal and/or suprabasal) of OLP.

Results. Of 7 OLP lesions, 4 lesions (57%, 4 of 7 lesions) were positive for CK-19. In particular, 2 histological samples were positive in both OLP lesion as well as in OLP cancer lesion. Two OLPs was positive for CK-19 but in the oral

cancers that subsequently developed CK-19 was negative. In one case, both OLP lesion as well as OLP cancer were negative for CK-19. And in two cases the histological preparation of OLP lesion was negative for CK-19, whereas oral cancer samples tested positive, focally, for CK-19 in both basal and suprabasal cell layers of neoplastic tissue.

Conclusion. In these 7 patients, CK-19 does not seem to predict the risk of malignant transformation in OLP lesions due to differences in the level of expression patterns. Variable expression in basal focal marking of CK-19 in OLP lesions could be influenced by amount of inflammatory cell infiltrate.

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Oral amelanotic melanoma: a case report

P. Tozzo¹, N. Termine¹, A. De Lillo², D. Ciavarella², G. Campisi¹

¹Department Surgical, Oncological and Oral Sciences, University of Palermo, Italy; ²Department Clinical and Experimental Medicine, University of Foggia, Italy

Objectives. Primary oral melanoma is a very rare malignancy, representing about 0.5% of all melanomas, characterized by a wide clinical-histological variability and a very aggressive behavior. Aim of the present study is to describe a case of oral amelanotic melanoma, an infrequent variant with a poorer prognosis than that of pigmented melanomas for a more aggressive biological behavior and frequent delays for the correct diagnosis and for starting the treatment.

Case report. A 53-year-old white man referred at the Department Surgical, Oncological and Oral Sciences for a macular, scarcely pigmented lesion with irregular margins, located on anterior region of hard palate. The lesion, completely asymptomatic and without any history of trauma or injury, was observed by his dentist some months ago. The patient was a smoker (about 20 cigarettes a day for 30 years) and his anamnesis was negative for any systemic diseases and drug assumption. Histological examination, following the incisional biopsy, showed the hyperplasia of the junctional melanocytes with occasionally dendritic appearance and light atypia; on the recommendation of pathologist, a second incisional biopsy was performed, and a definitive diagnosis of "amelanotic melanoma *in situ*" was confirmed. After diagnosis, the patient was referred to the unit of Head and Neck Surgery for staging and surgical approach of the lesion.

Conclusions. This case report underlines the importance to perform biopsy of all lesions of the oral cavity to rule out malignancy, even when slightly colored, asymptomatic and with a clinically harmless presentation. Besides benign diseases (e.g melanotic macules, nevi, extravasation of blood pigments, amalgam tattoos and deposition of other exogenous/endogenous pigments), rare variant of non-pigmented melanoma should be considered in order to avoid a dangerous diagnostic and therapeutic delay.

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Synchronous tumors arising in the hard palate

G. Troiano¹, L. Lo Russo¹, V. Panzarella², N. Termine², L. Laino¹

¹Department of Clinical and Experimental Medicine, University of Foggia, Italy; ²Department of Surgical, Oncological and Oral Sciences, University of Palermo, Italy

Objectives. The concept and term "field cancerization" was first put forward by Slaughter et al. in 1953. Oral field cancerization implies that oral cancer does not arise as a singular cellular phenomenon but rather as an anaplastic tendency involving many cells at once and results in the multifocal development of cancer at various rates within the entire field in response to a carcinogen especially tobacco. This concept has been frequently used to explain the occurrence of multiple primary cancers and recurrences following complete excision of oral cancer.

Methods. In this work we report a case of oral field cancerization in a 75-year-old man. He came at University of Foggia Dental Clinic reporting the presence of a painless lesion on the middle of the hard palate. He referred that the lesion appeared nearly 15 days before.

Results. At general anamnesi the patient did not report the presence of systemic pathologies, but he declared to be smoker and he wears a maxillary total removable dentures. At intraoral examination were visible two red ulceration lesions, the first was localized in left anterior part of hard palate while the second in the opposite part. We decided to perform a vital coloration with toluidine blue. This test turned out to be positive for all the two ulcerations. Following these results we decided to perform two excisional biopsy.

Conclusions. The results of histological examination revealed the presence of oral squamous cells carcinoma in each lesions. This two carcinomas result to be two different primary tumors in an extensive oral field cancerization. These two lesions having developed in the same period are considered as synchronous lesions originated from an only field cancerization (1-3).

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Use of a new collagen matrix (mucograft) in soft tissues reconstruction after bioptic excision

G. Troiano¹, D. Ciavarella¹, M.E. Licata², O. Di Fede², L. Laino¹

¹Department of Clinical and Experimental Medicine, University of Foggia, Italy; ²Department of Surgical, Oncological and Oral Sciences, University of Palermo, Italy

Objectives. The purpose of this study is to evaluate the use of a new collagen matrix (Mucograft®; Geistlich Pharma AG, Wolhusen, Switzerland) in the soft tissue reconstruction after excisional biopsy. Some oral pathologies have a neoplastic potentiality that may reduce patients life. Surgical excision represents the most recommended approach and a total excision of lesions is the goal for the surgeon in order to avoid a future recurrence of the disease. However, this surgical option is difficult to perform in very extensive lesions since they can be disfiguring for patients. In fact reconstruction after rescission of mucosal biopsy requires the levy of a graft from the patients or healing by secondary intention that often improve morbidity. Nowadays, a new collagen matrix is available to avoid surgical grafts and improve the postoperative confort.

Methods. Mucograft® is a pure collagen type I and III matrix of porcine origin without further cross-linking (1). Until today this material has been mostly used in periodontal surgery, however we think that it could be of great help to the surgeon after bioptical excision (2, 3). In this work we report a case of an extensive verrucous proliferative leukoplakia located in the cheek, its total removal and tissue reconstruction with the use of Mucograft® membrane.

Results. Three months follow-up revealed a complete re-epithelialization in the area of the lesion and an improvement in postoperative comfort for the patient.

Conclusions. We report a new possibility for the soft tissues reconstruction after bioptic excision using a new collagen matrix (mucograft).

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Awareness of prevention and treatment of bisphosphonate-related osteonecrosis of the jaws among dental practitioners in Ferrara

L. Trombelli, R. Vecchiatini, P. Felisatti, E. Tadres

Dental Clinic, Dental School, University Hospital Ferrara, Department of Biomedical and Specialty Surgical sciences, University of Ferrara, Italy

Objectives. The aim of this study was to assess the awareness of bisphosphonate-related osteonecrosis of the jaws (BRONJ) among dental practitioners from Ferrara (Italy) and to verify their knowledge about BRONJ primary and secondary prevention, early diagnosis and therapy.

Methods. Within a period of 12 months two different questionnaires were created *ad hoc*, consisting of 27 questions and delivered as online and hard copy form to 310 dental practitioners. The online survey was carried out by the data processing platform Google Docs®. During local cultural meetings, developed periodically by cultural Association ANDI and AIO in Ferrara, printed questionnaires were delivered hand by hand to dental practitioners.

Results. Total responsiveness was 37.3%. 7% of respondents had never treated patients taking BP medications. Among dentists who have been in contact with patients taking BP medications (93%), both oral or intravenous. Large part noticed BRONJ in patients taking BP medications (34.6%). Considering BRONJ onset, 21% lesions were related to dental extractions or trauma to the jaw bones. 70% of those observing BRONJ required x-ray of jaws for complete staging and diagnosis. After BRONJ diagnosis, 56% of respondents haven't dealt with BRONJ patients anymore. 10.5% of respondents who diagnosed at least one lesion, decided to recommend drug holiday, local antiseptic and oral antibiotic therapy, analgesic/anti-inflammatory therapy and surgical debridement of necrotic bone. 36% of respondents chose clinical features and guidelines for the management of BRONJ from articles in scientific journals and national and international guidelines. 87% are interested in more information on the prevention and management of risk of BRONJ.

Conclusions. The advantages of the online questionnaire are related to a larger pool of sampling and to the great congruence between answers provided. Considering different studies in literature, responsiveness to this questionnaire achieved the highest percentage of responsiveness. The dual mode of administration of the questionnaire was useful to overcome digital bias.

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