CHARACTERIZATION AND MORPHOLOGICAL TECHNIQUES FOR ORAL BIOFILM VISUALIZATION: STATE OF THE ART

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Aim: this review analyzes the morphological methods used to identify microbial species, the adhesion mechanisms involved in biofilm formation and stability, and the efficacy of microbicidal agents against pathological biofilms.

Methods: a literature review was performed to examine the main features of the oral ecosystem and the qualitative and morphological techniques used for biofilm analysis.

Results: the oral microbiome is essential for oral and systemic health. Biofilm is a structured microbial community whose pathological shifts in microbial metabolism can damage host surfaces. Microscopy remains the primary tool for morphological biofilm analysis. Stereomicroscopy and Confocal Laser Scanning Microscopy (CLSM) allow detailed visualization of structure, microbial distribution, and three-dimensional architecture. Electron microscopy (SEM and TEM) enables high-resolution analysis of bacteria, the extracellular matrix and adhesion mechanisms.

Advanced techniques like STEM, HR-TEM, and correlative microscopy help evaluate antibacterial strategies by visualizing biofilm disruption.

Conclusions: microscopy is crucial for understanding biofilm morphology and improving targeted therapies. Further studies are needed to investigate advanced techniques and microbiological and pathological aspects of oral biofilm.

BIODIRECTIONAL ASSOCIATION BETWEEN PERIODONTAL DISEASE AND REPRODUCTIVE DISORDER

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Aim: this systematic review aims to evaluate the type, presence and differences of salivary biomarkers of inflammation in patients suffering by Polycystic Ovarian Syndrome (PCOS) and the risk of periodontal disease according to emerging scientific evidence.

Methods: selected databases were PubMed, Scopus, Google scholar and Web of science. The search strategy included the following terms: "oral inflammatory biomarkers", "salivary mediators", "metabolic indicators", "periodontal diseases", "periodontitis", "polycystic ovary syndrome", "PCOS", "ovulatory dysfunction". Preferred Reporting Items for Systematic Reviews (PRISMA) guidelines were used.

Results: our review revealed that there are various possible salivary inflammatory biomarkers in women with PCOS, such as cytokines, C-Reactive Protein (CRP), Reactive Oxygen Species (ROS), MMPs, and microbiological diversity. Furthermore, these articles suggest an association between Periodontal Disease (PD) and PCOS, as periodontal parameters were more commonly altered in PCOS patients compared to healthy young women. This altered periodontal response in PCOS has been linked to an inflammatory state that appears to increase susceptibility to PD.

Conclusions: the salivary biomarkers of inflammation in patients affected by PCOS are a valid diagnostic method to assess the increased risk of periodontal disease. Further new studies are needed, with more rigid protocols, to investigate the best potential of inflammatory biomarkers as a diagnostic salivary index for PCOS patients and to evaluate the true inductive properties of the biomarker in early periodontal disease screening.

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THE INTECTION OF CYTOKINES IN ORTHODONTICS: A SYSTEMATIC REVIEW

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Aim: this systematic review aimed to explore the intricate relationship between cytokines and fixed orthodontics. Cytokines are crucial low molecular weight proteins involved in immune responses. The systematic review highlights the need for in-depth studies on cytokines biological mechanisms, providing insights into disease onset and potential therapeutic strategies in relationship with orthodontics therapies.

Methods: a comprehensive literature search identified 18 relevant articles, emphasizing the multifaceted role of cytokines in Orthodontic Treatment (OT). The quality assessment using the ROBINS-I tool ensures a rigorous evaluation of the included studies, contributing to the overall reliability of the findings.

Results: cytokines exhibit different properties, influencing cellular activities through autocrine, paracrine, and endocrine activities. Fixed orthodontics aimed at achieving stable occlusion, induce tension and compression in the periodontal ligament, triggering cytokine release. Proinflammatory cytokines play a role in inflammation, influencing bone and soft tissue metabolism. Studies show elevated cytokine levels in gingival crevicular fluid after orthodontic force application.

Conclusions: the choice of fixed orthodontic devices, such as self-ligating brackets, influences cytokine concentrations, indicating the importance of attachment design.

ORAL MICROBIOME AND SYSTEMIC DISEASES: WHAT IS THE CORRELATION? A NARRATIVE REVIEW

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Aim: the purpose of this review is to explore possible connections between the oral microbiome and systemic diseases. The oral cavity hosts several types of microorganisms, often aggregated and organized in communities. Commensal microorganisms play a crucial role in the body, as they contribute to the ability to resist pathogens, enable homeostasis, and influence the immune system.

Methods: a literature search was conducted in PubMed/MEDLINE, COCHRANE, Scopus and Web of Science databases. No filters were applied to the search.

Results: due to the large number of articles in the literature and the wide variety of methods and results among the studies found, it was not possible to obtain the results in the form of a systematic review or meta-analysis. After an initial check of the titles and abstracts, non-topical entries were excluded. A description of the microbiome present in the oral cavity was made under both physiological conditions and the most prevalent systemic pathological conditions. Therapeutic measures that can be used to influence the microbiome were then determined.

Conclusions: this study describes what reciprocal influence exists between the oral microbiome and systemic health in both healthy individuals and those with systemic diseases. A clear intercorrelation was observed between dysbiosis of the oral microbiome and systemic diseases such as diabetes, cardiovascular disease, chronic inflammatory diseases, and neurodegenerative diseases.

ONCOMIRS AS DIAGNOSTIC AND PROGNOSTIC BIOMARKERS IN ORAL SQUAMOUS CELL CARCINOMA: A SYSTEMATIC REVIEW

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Aim: Oral Squamous Cell Carcinoma (OSCC) is the primary malignancy of the oral cavity. OncomiRs are small, non-coding microRNAs (miRNAs) involved in tumorigenesis. The aim of this review is to assess miRNAs' potential as diagnostic and prognostic biomarkers.

Methods: a systematic search was performed through the electronic databases PubMed, Scopus and Web of Science using the keyword: "microRNAs", "oral squamous cell carcinoma", "biomarkers", "diagnosis", "prognosis". A total of 180 studies were identified (2009-2025), of which 27 met the inclusion criteria and were selected for final review.

Results: tissue and biological samples (i.e. saliva and plasma) from OSCC patients exhibited dysregulated levels of *miR-21, miR-31, miR-155, miR-375, miR-221, miR-210, miR-196a and miR-10b. miR-21 and miR-155* are correlated with higher TMN staging, are potential biomarkers predicting poor prognosis and are overexpressed in smokeless tobacco users. High miR-31 levels are associated with early stages tumors, absence of nodal metastasis, while low *miR-375* levels are expressed in late-stage, larger size tumor and the non-cohesive pattern of invasion in OSCC. *miR-221-3p* levels are higher in OSCC. *miR-210* is overexpressed in OSCC, indicates worse survival and regulates chemoresistance. *miR-10b-5p, miR-196a-5p and miR-31-5p* levels are higher in OSCC tumor epithelium in both never and ever smokers.

Conclusions: the evaluation of miRNAs in patient specimens can be valuable for diagnosing OSCC, assessing its clinical features, and determining prognosis. Further studies should aim to establish a specific panel of miRNAs to accurately identify the primary characteristics of OSCC.

ORAL MICROBIOME DYSBIOSIS AND PERIODONTAL PATHOGENS IN ORAL SQUAMOUS CELL CARCINOMA: A SYSTEMATIC REVIEW ON THEIR POTENTIAL ROLE IN CARCINOGENESIS

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Aim: Oral Squamous Cell Carcinoma (OSCC) is a multifactorial malignancy. Beyond traditional risk factors like tobacco, alcohol, and HPV, periodontal disease and its bacterial dysbiosis may contribute to OSCC pathogenesis. Periodontal pathogens can promote chronic inflammation, immune modulation, and carcinogenic changes. The review examines their prevalence, microbiome alterations, and functional impact in OSCC.

Methods: a systematic search was conducted in PubMed, Scopus, and Web of Science using the keywords: oral squamous cell carcinoma, periodontal pathogens, oral microbiome, dysbiosis, inflammation. A total of 166 studies were identified (2014-2024), of which 8 met the inclusion criteria and were selected for the final review.

Results: OSCC patients exhibited significant oral microbiome dysbiosis, with increased *Porphyromonas gingivalis*, *Fusobacterium nucleatum*, *Treponema denticola*, *Tannerella forsythia*, and *Prevotella intermedia*. *P. gingivalis* and *F. nucleatum* promoted immune evasion and epithelial-mesenchymal transition, while *T. denticola* and *T. forsythia* contributed to tissue destruction and tumor invasion. Functional analyses revealed altered lipopolysaccharide synthesis, amino acid metabolism, and oxidative stress pathways, fostering a pro-tumorigenic microenvironment in OSCC.

Conclusions: the increased presence of *P. gingivalis*, *F. nucleatum*, *T. denticola*, *T. forsythia*, and *P. intermedia* in OSCC suggests their role in tumor progression through inflammation and immune evasion. Further studies are needed to confirm their impact and biomarker potential.

RHEUMATOID ARTHRITIS PATIENTS AND DENTAL CARE MANAGEMENT: AN EVIDENCE BASED APPROACH

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Aim: moving towards the concept of personalized treatment for each patient, it's essential to consider the diseases he or she is affected by. This paper focuses on Rheumatoid Arthritis (RA), a chronic systemic autoimmune disease that affects 0.5% of the population and causes alterations throughout the entire body, including the oral cavity and the stomatognathic system. The dentist is one of the healthcare professionals who most frequently interacts with patients. The aim of this research is to determine whether, and in what way, the dentist can early identify the disease and treat patients affected by it in the most appropriate manner.

Methods: a systematic review of the currently available literature published between 2015 and 2025 was conducted by consulting PubMed, Cochrane Library, MDS Manuals, AIFA and Google with the following keywords: "RA dental management", "RA guidelines", "RA therapy", "RA and oral health", "Sjögren's Disease guidelines", "DMARD", "NSAID", "corticosteroids and oral health", "RA and temporomandibular joint".

Results: the research resulted in 161 articles and 7 guidelines, highlighting how the disease manifests and impacts the patient's life.

Conclusions: the dentist is not only required to understand rheumatoid arthritis and its consequences on general and oral health and how to adapt the treatment to the patient, but with a proper anamnesis, oral exam and observation can also suspect and identify the disease to ensure that the patient receives care at the earliest possible stage.

HEMORRHAGIC RISK IN ORAL SURGERY FOR PATIENTS WITH GLANZMANN'S THROMBASTHENIA: A SCOPING REVIEW

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Aim: Glanzmann's thrombocytopathy is a hereditary platelet disorder affecting the megakaryocytic lineage, causing impaired platelet aggregation and predisposing also severe bleeding, requiring specific protocols in oral surgery. This scoping review aims to develop a flowchart to reduce the hemorrhagic risk in such patients.

Methods: a scoping review was conducted using PubMed, Scopus and Web of Science, selecting articles with the keywords "Glanzmann," "oral surgery," and "thrombocytopathies," focusing on systematic and narrative reviews from the last five years.

Results: a thorough medical history and preoperative hematochemicals tests are essential for assessing coagulation. To prevent platelet alloimmunization, management should include local hemostatic treatments and/or desmopressin. If ineffective or before surgery, HLA-compatible platelet transfusion is used, with recombinant factor VIIa as a new prophylactic option.

In GT patients, bleeding may occur with the loss of deciduous teeth. Prolonged wound compression, hemostatic adhesive, and tranexamic acid are needed. Medications worsening hemostatic disorders and intramuscular injections should be avoided. Locoregional anesthesia is discouraged, while local pressure after subcutaneous injections and sutures are recommended to prevent hematomas.

Conclusions: hemostasis disorders require proper surgical planning to reduce the risk of bleeding. It is essential to use adequate anesthesia, manage bleeding with surgical and pharmacological methods, and know the necessary blood tests to assess the patient's health status and plan future treatments.

SALIVARY BIOMARKERS AS A DIAGNOSTIC TOOL FOR NEURODEGENERATIVE DISEASES: A SYSTEMATIC REVIEW AND A PROTOCOL OF STUDY

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Aim: this systematic review aims to answer the question: "Is there evidence that support the use of salivary biomarkers for diagnosis of neurodegenerative diseases?". On the evidence from the review, we structure a protocol of study to detect salivary biomarkers of patients with neurodegenerative diseases.

Methods:

A. This systematic review is based on multiple database research (Medline, Scopus, WOS) drawn up between June 2023 and January 2025 of the scientific English literature published after 2000. The entry terms "saliva" was combined through the Boolean indicator "AND" with "neurodegenerative disease", "Parkinson", "Alzheimer" and "ALS". Data were summarized into three Excel tables, and the quality was assessed by the NIH checklist. Level of evidence was assessed using the classification of the Oxford Center for Evidence-Based Medicine levels for diagnosis.

B. The pilot study is pending ethics committee approval. A cohort of 42 (28 with a diagnosis of neurodegenerative disease and 14 healthy subjects) will be enrolled for saliva collection after oral clinical examination, interview on general medical history, and salivary flow rate assessment by modified Saxon Test.

Results:

C. The 57 studies included in the review show 21 salivary biomarkers with a statistically different concentration between pathological and healthy patients.

D. By our study we expect to quantify and identify biomarkers distinguishing the pathological and control group.

Conclusions: reliable biomarkers will lead to the development of point-of-care salivary tests for degenerative diseases.

ORAL LICHEN PLANUS: USE OF THE OZONE AS A PALLIATIVE THERAPY

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Aim: Oral Lichen Planus (OLP) is a chronic inflammatory disorder of the oral mucosa, causing symptoms such as white lesions, ulcers, redness, dryness, and discomfort. Ozone therapy has shown promise in managing OLP by reducing symptoms through biological, antimicrobial, and immunostimulatory effects. The aim of this study was to evaluate the effectiveness of ozone therapy in treating OLP.

Methods: the research was conducted by reviewing studies from PubMed and Google Scholar databases, focusing on ozone therapy's role in treating oral mucosal lesions, particularly OLP.

Results: 9 articles were analyzed. The studies suggest that ozone therapy, applied via ozonated water, oils, or ozone gas insufflation, is effective and well-tolerated. It reduces inflammation, alleviates pain, promotes tissue healing, and prevents secondary infections due to its antimicrobial properties. Ozone therapy is first-line treatment for mild and moderate cases (reticular lesions) and for patients unable to use corticosteroids. In severe cases (ulcerative lesions), ozone therapy is combined with corticosteroids as adjunctive treatment. Ozone water is preferred due to its lower toxicity compared to ozone gas.

Conclusions: ozone therapy has gained attention in oral medicine due to its antimicrobial, antioxidant, and immunomodulatory properties. Though limited in studies, it is a minimally invasive, side-effect-free option for managing OLP, particularly as palliative treatment.

ANTIBIOTICS IN THE PREVENTION OF MEDICATION-RELATED OSTEONECROSIS OF THE JAW IN PATIENTS UNDERGOING TOOTH EXTRACTION: A SCOPING REVIEW

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Aim: the aim of this study was to evaluate the literature on antibiotic prophylaxis and therapy to prevent Medication-Related Osteonecrosis of the Jaw (MRONJ) in patients treated with antiresorptive drugs undergoing tooth extraction.

Methods: a literature search of PubMed, Scopus, and Web of Science databases (2003-2025) was conducted. Studies selection and data extraction were performed by two independent reviewers.

Results: a total of 770 articles were found and 40 were considered relevant for inclusion. One study reported no antibiotic use. Six reported antibiotic therapy but no information on prophylaxis, while two reported prophylaxis but not postoperative therapy. The most used prophylactic antibiotic was amoxicillin, either alone or with clavulanic acid. Metronidazole was combined with amoxicillin or amoxicillin-clavulanic acid in 7 studies. Alternatives such as clindamycin, erythromycin, metronidazole, clarithromycin, azithromycin, and lincomycin were used in penicillin-allergic patients. In the reviewed protocols, antibiotics were administered from 1 h to 14 d before extraction (median: 2 d) and continued postoperatively for 1 to 20 d (median: 6 d). The median total duration of antibiotic use was 7 days. The included studies reported a total of 3252 patients and 70 cases of MRONJ or bone exposure.

Conclusions: the current literature showed heterogeneity regarding the prescription of antibiotics in the protocols adopted for MRONJ prevention. Few cases of MRONJ occurred regardless of the antibiotic protocol used. Further studies with larger sample sizes are needed.

THE IMPACT OF METFORMIN ON ORAL SQUAMOUS CELL CARCINOMA (OSCC)

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Aim: metformin, a commonly used antidiabetic agent, has been studied for potential anticancer effects. This work reviewed its association with the risk of Oral Squamous Cell Carcinoma (OSCC) and other squamous cell carcinomas in the head and neck regions (oropharynx, hypopharynx, and upper esophagus), which share similar histology.

Methods: a systematic literature search was conducted in PubMed, Scopus, and Web of Science (WoS) for articles published up to September 2024. The review included observational studies (cohort and case-control) and randomized controlled trials assessing the relationship between metformin use and the incidence or progression of OSCC and histologically similar head and neck squamous cell carcinomas. Screening and selection followed PRISMA guidelines. Data extraction included study design, population characteristics, metformin exposure, cancer type and location, follow-up period, outcomes measured, and main findings.

Results: twenty-five studies met the inclusion criteria. Fourteen reported a reduced risk of OSCC or related cancers in patients using metformin, particularly with long-term use, suggesting a dose-response effect. However, some studies found no significant association.

Conclusions: metformin may reduce the risk of OSCC and similar head and neck squamous carcinomas, especially with prolonged use. Further prospective studies are needed to confirm these associations and elucidate the underlying mechanisms.

DEEP-LEARNING-BASED IMAGE CLASSIFICATION FOR ORAL LESIONS: A MULTICENTER PILOT-STUDY EVALUATING REAL-WORLD APPLICABILITY

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Aim: Deep Learning (DL) image classification models can assist healthcare providers not trained in oral medicine. This study compared different AI models in classifying oral lesions.

Methods: images from four oral medicine centers (Sapienza University of Rome, University of Maryland Baltimore, UT Health San Antonio, Johns Hopkins University) were used to train a DL model (BEiT-BERT Pre-Training of Image Transformers) for classifying images into Normal Mucosa (NM), Reactive/Benign (RB), Potentially Malignant (PM), and Oral Cancer (OC). Images were annotated by an oral pathology resident and reviewed by two experts. The model was based on a pre-trained 87M-parameter model and fine-tuned on ImageNet datasets. We compared BEiT to six benchmark models (kNN, Logistic Regression, Random Forest) using Google Inception V3 and SqueezeNet embeddings. Performance was evaluated via Sensitivity/Recall, Specificity, Precision, and F1-score.

Results: the dataset included 289 images from 178 patients, split into training (79%, n = 228; NM = 42, RB = 95, PM = 77, OC = 10) and testing (21%, n = 61; NM = 11, RB = 24, PM = 19, OC = 3). BEiT achieved the highest accuracy (66.6%), exceeding the second-best (50.9%). Precision (72.3% *vs* 49.6%), Recall (62.3% *vs* 50.9%), and F1-score (65.8% *vs* 48.3%) confirmed its superior performance.

Conclusions: the BEiT model outperformed generic AI tools, with high precision and fewer false positives. Targeted datasets were crucial and not easily replaceable by general-use datasets. DL models show promise for real-world AI applications for referring providers not trained in oral medicine.

LIQUID BIOPSY: IDENTIFICATION OF MIRNAS AS POTENTIAL BIOMARKERS FOR ORAL SQUAMOUS CELL CARCINOMA AND ORAL POTENTIALLY MALIGNANT DISORDERS

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Aim: liquid biopsy has emerged as a new method for cancer detection and management, but studies on Oral Squamous Cell Carcinoma (OSCC) lack conclusive evidence. This study aimed to evaluate the expression of six circulating salivary and plasmatic miRNAs (-21, -31, -138, -145, -184, and -424) as diagnostic biomarkers in OSCC and Oral Potentially Malignant Disorder (OPMD) patients.

Methods: 37 patients (M:19, F:18, mean age: 68, range: 32-86), enrolled at the Department of Oral and Maxillofacial Sciences, were divided into three groups according to their diagnosis: OSCC (n = 20), OPMDs with mild or moderate dysplasia (n = 12), and healthy controls (n = 5). At the time of enrollment, they provided blood and saliva samples. MiRNA expression was evaluated by real-time PCR at the Department of Molecular Medicine. The Kruskal-Wallis test was performed to compare miRNA levels among groups (significance at $p < 0.05$).

Results: liquid biopsy from saliva showed promise in identifying biomarkers. Specifically, miR-138 had a significantly lower expression in saliva samples from OSCC and OPMD patients compared to healthy controls ($p = 0.012$). In contrast, miRNA expression levels in plasma were low across all groups, with no significant differences found.

Conclusions: liquid biopsy could revolutionize the clinical approach to oral lesions, enabling mass screening, risk stratification, treatment monitoring, and early detection of recurrences. Despite the limited sample size, this study provides evidence of the clinical relevance of circulating miRNAs as diagnostic biomarkers in oral oncology.

HAS THE GLYCEMIC CONTROL A POSITIVE IMPACT ON THE CLINICAL SEVERITY OF ORAL LICHEN PLANUS IN DIABETIC PATIENTS?

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Aim: the study aims to discuss the possible need to investigate correlation between glycemic parameters and severity of Oral Lichen Planus (OLP) in diabetic patients.

Methods: the association between Diabetes Mellitus (DM) and OLP has been widely reported. However, most studies have concentrated on epidemiological aspects and shared inflammatory pathways, with few investigating implications of this association on clinical course of OLP. A retrospective study conducted by our team at Sapienza University demonstrated that diabetic patients exhibit severe clinical presentation of OLP and require intensive management. However, that study did not examine the influence of DM severity on OLP manifestations. There is pressing need for future prospective studies involving patients with confirmed diagnosis of both DM and OLP, where comprehensive clinical information on OLP is collected alongside the study of glycemic parameters of DM.

Results: it is hypothesized that poor glycemic control is associated with greater clinical severity of OLP. Consequently, higher levels of HbA1c, HOMA-IR, blood glucose concentration, albuminuria, lipids, and ketonuria are anticipated to be linked with more severe clinical subtypes, frequent follow-ups, and increased prescriptions.

Conclusions: if this correlation is confirmed, it would underscore the necessity for interdisciplinary approach to managing these patients, which could potentially enhance clinical outcomes. Building upon previous findings, we aim to validate preliminary observations, similar to those identified for vascular damage or periodontitis.

PRESENCE OF VERY HYPOECHOIC AREAS ON SALIVARY AND LACRIMAL GLANDS ULTRASONOGRAPY AS A HALLMARK OF SJÖGREN'S DISEASE

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Aim: this study evaluated the severity of lacrimal and salivary glands involvement in Sjögren's Disease (SD) by means of ultra-high frequency ultrasonography, with the aim of performing phenotypic stratification.

Methods: consecutive patients with suspected SD and scheduled for minor salivary glands biospy were included. Lacrimal and minor salivary glands were checked for ultrasonographic glandular inhomogeneity based on the presence of Very Hypoechoic Areas (VHA). Patients were categorized as VHA-absent, single-positive VHA (single glandular involvement), or double-positive VHA (both glands). Autoantibody titers (anti-Ro52, anti-Ro60, anti-SSB/La) were quantified via band densitometry. Statistical analysis was performed using SPSS.

Results: among 71 subjects (10 males, 61 females), 48 were confirmed for SD. Patients presenting with VHA in both glands were consistently diagnosed with SD. Double-positive VHA patients exhibited higher inflammatory markers, autoantibody titers, and disease activity, while VHA-absent patients had lower inflammatory biomarkers and autoantibody levels.

Conclusions: UHFUS assessment of multiple exocrine glands may enhance SD diagnosis. Increased glandular involvement correlates with higher disease activity and biohumoral markers, mirroring trends seen in joint ultrasound.

RATE OF MALIGNANT TRANSFORMATION AND CLINICAL CHARACTERISTICS AMONG AN ORAL LICHEN PLANUS POPULATION: A RETROSPECTIVE CLINICAL STUDY

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Aim: this study aimed to assess the malignant transformation rate of Oral Lichen Planus (OLP) and identify potential risk factors influencing its progression onto Oral Squamous Cell Carcinoma (OSCC) in a cohort of patients from a single medical center.

Methods: a retrospective observational study was conducted on OLP patients followed between 2007 and 2024 at the Oral Medicine Department of University Polyclinic Agostino Gemelli. Clinical, histopathological, and demographic data were analyzed, including lesion types, biopsy frequency, Candida spp. colonization, systemic diseases, and smoking habits. Statistical analyses included univariate and multivariate regression models.

Results: a total of 246 patients were included in the study. The overall malignant transformation rate was 3.25%, with 8 cases of infiltrative OSCC and 6 cases of carcinoma in situ. Patients who developed OSCC underwent significantly more biopsies (mean: 4.62, $p = 0.003$). Older age ($p = 0.037$) and multiple lesion localizations ($p < 0.001$) were associated with higher transformation risk. No significant association was found with sex, smoking, Candida spp. colonization, or systemic diseases.

Conclusions: the findings highlight the need for long-term clinical and histological monitoring of OLP, especially in older individuals and those with multifocal lesions. Although histological examination remains essential for understanding lesion behavior, the elevated number of biopsies in transforming cases suggests the crucial role of clinicians in identifying high-risk lesions through careful inspection and monitoring.

A COST OF ILLNESS ANALYSIS OF MEDICATION RELATED OSTEONECROSIS OF THE JAWS: AN OUTPATIENT PRELIMINARY STUDY

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Aim: to estimate the economic costs of Medication Related Osteonecrosis of the Jaws (MRONJ) treatment through an outpatient preliminary study.

Methods: a retrospective outpatient-study was conducted among patients affected by MRONJ at IRCCS A. Gemelli University Polyclinic Foundation, between 2022 and 2025. Inclusion criteria were clinical and radiographic diagnosis of MRONJ according to SIPMO diagnostic criteria; minimum 6 months of follow-up. Direct costs concerning diagnostic procedures, therapeutic management, and follow-up visits were obtained from clinical records. The cost related to transfer, mobility and overnight stay were retrieved through patient's interview. The study was approved by the local Ethical Committee (Prot.0044593/21).

Results: fifty-one patients with a confirmed clinical-radiographic diagnosis of MRONJ with a mean age of 69 years old were enrolled in this study. The mean follow-up was 13 months. Eighteen MRONJ were located in the upper jaw, 28 in the lower jaw and 5 in both jaws. The mean annual cost was 802.20 € per patient. Specifically, 228.10 € were identified for movement, 454.10 for diagnostic procedures, surgery and follow-up costs and 125.80 for drug therapy. Patients coming from Latium reported an average cost of 700.35 € while patients from other regions reported an average cost of 1682.10 € ($p < 0.05$).

Conclusions: this outpatient study provides a preliminary estimate of MRONJ treatment costs. Moreover, patients who undergo surgical treatment and foreigner patients, who need overnight stays and more travelling, face more expenses.

CLINICAL AND RADIOLOGICAL EVALUATION AFTER SURGICAL TREATMENT FOR MEDICATION-RELATED OSTEONECROSIS OF THE JAW (MRONJ): A 12 MONTH FOLLOW-UP STUDY

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Aim: to assess clinical and radiological healing after surgical treatment of MRONJ at 12 months follow-up and to identify risk factors for poor healing and recurrence.

Methods: this retrospective cohort study included patients who underwent surgical treatment of MRONJ (i.e., dentoalveolar curettage, sequestrectomy and marginal resection) at IRCCS A. Gemelli University Polyclinic Foundation, Rome, between 2022 and 2025. Necrotic bone was evaluated through radiographic and intra-operative assessment according to SICMF-SIPMO. Healing was defined as complete absence clinical and radiological signs after 12 months, remission as clinical resolution with radiological stability and recurrence as reappearance of MRONJ within a year. Early failure cases were surgically re-treated immediately and re-entered in the follow-up examination. The study was approved by the Ethics Committee (ID:4139).

Results: out of 41 patients, a total of 53 sites (22 maxilla, 31 mandible) were identified: 36 sites at stage 1, 16 at stage 2, and 1 at stage 3. At 12 months follow-up, 96% of the sites showed clinical healing: specifically, 59.5% showing both clinical and radiographic healing, while 36.5% showed clinical remission but non-specific radiographic signs of osteonecrosis (remission). Stage 2-3 was identified as a significant risk factor for poor healing (OR: 10.93, 95% CI:1.88-63.72, p <0.01).

Conclusions: stage 2-3 MRONJ is associated with poor healing at 1, 6, and 12 months. A combined medical-surgical approach is effective, and a second surgery may improve success rates.

RADIOLOGICAL AND HISTOPATHOLOGICAL MEASUREMENTS IN ORAL SQUAMOUS CELL CARCINOMA: A COMPARATIVE ACCURACY STUDY

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Aim: definitive staging of Oral Squamous Cell Carcinoma (OSCC) is performed through postoperative histopathological evaluations, although imaging techniques such as CT scan can estimate histological parameters with some degree of accuracy. Due to the importance of these parameters for prognosis and treatment strategies, the aim of this retrospective study is to assess the reliability of radiologic-versus-pathologic measurement in a cohort of OSCC patients.

Methods: the study included 88 randomly selected OSCC patients treated at the Marche Regional Hospital, Ancona, Italy, between 2014-2024. Pathological (p) and radiological (rx) data were retrieved from the Department of Pathology and Neuroradiology, by two pairs of operators, each of which was blinded to the results of the other group. Data retrieved were Depth of Invasion (DOI), Tumor depth (Td), Maximum diameter (Md), TNM, Muscle invasion (Mi), Bone invasion (Bi), and Extra-Nodal invasion (ENE). Spearman's rank correlation and weighted Cohen's Kappa were performed. A p-value <0.05 was considered as statistically significant.

Results: Spearman's rank correlation was significant (p <0.001) between: rx-Md and p-Md (ρ = 0.709), rx-DOI and p-Td (ρ = 0.695), rx-Td and p-Td (ρ = 0.617), rx-T and p-T (ρ = 0.754), rx-N and p-N (ρ = 0.391), rx-Mi and p-Mi (ρ = 0.268), rx-Bi and p-Bi (ρ = 0.562), rx-ENE and p-ENE (ρ = 0.738). Comparison of rx-T and p-T obtained a weighted Cohen's Kappa of 0.625.

Conclusions: these results demonstrate a good radiologic-*versus*-pathologic correlation of primary tumor measurements.

FROM RISK TO REMEDY: PERINEURAL INVASION FLAGS POOR PROGNOSIS IN EARLY-STAGE PATIENTS AND OPENS THE DOOR TO FERROPTOSIS-BASED THERAPIES

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Aim: Oral Squamous Cell Carcinoma (OSCC) shows poor prognosis due to high recurrence and low survival. Ferroptosis, an iron-dependent regulated cell death, has emerged as a promising therapeutic target. Increasing evidence suggests ferroptosis may influence OSCC progression by modulating the Tumor Microenvironment (TME).

Methods: transcriptomic data from 360 OSCC samples (The Cancer Genome Atlas) were analyzed to identify a Ferroptosis-Related Gene (FRG) signature. Real-time PCR validated the signature in 50 primary OSCC samples. Functional enrichment was performed by Gene Set Enrichment Analysis (GSEA). Perineural Invasion (PNI) was assessed by Immunohistochemistry (IHC). An *in vitro* PNI model was developed using 3D OSCC spheroids and iPSC-derived neural stem cells. Migration, invasion, and secretome profiles were analyzed. Ferroptosis sensitivity in OSCC cell lines was tested using ferroptosis inducers (FINs: RSL3, erastin, ferlixit).

Results: a 9-gene FRG signature (TFRC, GOT1, GCLC, HSF1, CD44, PARP3, AGPAT3, SRC, USP35) associated with poor prognosis and Ferroptosis sensitivity (FPS^high-risk) was identified. FPS^high-risk OSCC showed enrichment in neuro-cancer crosstalk pathways, increased PNI, and enhanced invasiveness. FPS^high-risk cells were highly sensitive to FINs, inducing cytotoxicity via mitochondrial dysfunction and ferritinophagy.

Conclusions: ferroptosis may drive OSCC progression by modulating neuro-cancer interactions. The FRG signature predicts Ferroptosis sensitivity, offering therapeutic insights.

ASSESSMENT OF ISOLATED DRYNESS IN SJÖGREN'S DISEASE: RETROSPECTIVE ANALYSIS OF SYMPTOMS, GLANDULAR FUNCTIONALITY AND DISEASE ACTIVITY

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Aim: isolated ocular and oral dryness are distinct phenotypes of Sjögren's Disease (SD) with unique clinical features. Their underlying mechanisms remain unclear, and differences in glandular imaging findings are not well explored.

Methods: this retrospective study analyzed consecutive patients with confirmed SD diagnosis. Labial salivary gland biopsies and ultrasonography (18 MHz, 48 MHz, 70 MHz probes) assessed major salivary, lacrimal, and labial salivary glands to evaluate glandular involvement. Patient-Reported Outcomes (PROs) included ESSPRI, OSDI, OHIP, and VAS for dryness severity. Patients were classified into four groups: no dryness, isolated ocular dryness, isolated oral dryness, and double dryness. Systemic activity (ESSDAI) and functional tests (USWR, Schirmer's test) were recorded.

Results: among 191 patients (55.3±1.9 years, 8.4% male), 22 (11.5%) had no dryness, 32 (16.8%) had isolated ocular dryness, 24 (12.6%) had isolated oral dryness, and 113 (59.1%) had both. Isolated dryness groups had intermediate PRO scores, with the best QoL in no dryness. Isolated ocular dryness had lower Schirmer's values ($p < 0.001$), and isolated oral dryness had lower USWR but higher than double dryness. No significant histological or ultrasonographic differences were found. ESSDAI was lower in isolated dryness groups.

Conclusions: isolated dryness in SD is linked to functional gland impairments but not histological or imaging differences. These subtypes are milder phenotypes with less systemic involvement. Further studies should explore advanced imaging techniques.

HISTOLOGICAL FINDINGS OF NON-EXPOSED MEDICATION-RELATED OSTEONECROSIS OF THE JAW IN POST-EXTRACTION SOCKETS: A RETROSPECTIVE SINGLE-CENTER STUDY

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Aim: to demonstrate, through bone biopsies during tooth extractions in patients under Bone Modifying Agents (BMAs), that Medication-Related Osteonecrosis of the Jaw (MRONJ) was already present at the time of dental extraction.

Methods: patients were enrolled at the Oral Medicine Unite V. Margiotta of the A.U.O.P. P. Giaccone of Palermo and underwent clinical-radiological evaluation and Periodontal Screening and Recording (PSR). Patients with tooth with poor prognosis underwent dental extractions with a standardized medical-surgical protocol. In presence of suspicious clinical-radiological signs of MRONJ, a bone biopsy was performed.

Results: fifteen patients were included, of which 5 were cancer patients assuming high-dose BMAs (HD-BMAs) for bone metastasis (Group A), 5 were cancer patients assuming low-dose BMAs (LD-BMAs) for prevention of cancer treatment-induced bone loss (Group B), and 5 assuming LD-BMAs for osteoporosis (Group C). The mean durations of BMAs therapy were group A 3±24 months, group B 24 (±12) months and group C 123 (±122) months.
The mean higher PSR score were group A 4, group B 4 and group C 3.
A total of 64 teeth were extracted, among them 15 bone biopsies were performed on tooth compromised by periodontal disease (46%), extended decay (40%) and vertical fracture (14%).
Bone biopsies confirmed MRONJ diagnosis in 12 cases (80%, 5/5 of group A, 4/5 from group B and 3/5 from Group C).

Conclusions: the present study suggests that the surgical act does not turn out to be responsible for MRONJ onset, but rather the underlying infection is the main trigger of it.

PREVENTIVE ROLE OF TOOTH EXTRACTION IN CANCER PATIENTS ASSUMING LOW-DOSE BONE-MODYFING AGENTS FOR CANCER TREATMENT-INDUCED BONE LOSS: A SINGLE-CENTER STUDY

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Aim: this study aims to evaluate periodontal health and to assess the incidence of Medication-Related Osteonecrosis of the Jaw (MRONJ) after extraction of periodontally compromised teeth in a cohort of cancer patients exposed to Low-Dose Bone-Modyfing Agents (LD-BMAs) for Cancer Treatment-Induced Bone Loss (CTIBL) prevention.

Methods: patients were enrolled at the Oral Medicine Unit V. Margiotta of the AOUP P. Giaccone in Palermo. Patients underwent clinical-radiological examination and Periodontal Screening and Recording (PSR). Teeth with poor prognosis were extracted with a standardized medical-surgical protocol for MRONJ prevention. Patients went through periodic follow-up visits.

Results: ten patients who underwent dental extraction were included in the study. All patients were female with a mean age of 67±11.07 years. Regarding BMA therapy, 7 patients were assuming bisphosphonates and 3 denosumab. The mean duration of LD-BMAs therapy was 46±20,6 mth. Five patients had been exposed to chemotherapy treatment; additionally, the patients presented other comorbidities: hypertension (90%), rheumatoid arthritis (10%), diabetes (20%), and thyroid diseases (40%). Regarding life habits, smoking was present in 10% of patients. The mean higher PSR score was 2,4±0,9. A total of 24 extractions were performed, evenly distributed between the upper and lower jaws. After a 12-month follow-up, none of the patients developed MRONJ.

Conclusions: when properly and timely performed, tooth extraction is a preventive measure in the dental care of cancer patients undergoing LD-BMA therapy for CTIBL.

MODIFIED CORONALLY ADVANCED FLAP APPROACH COMBINED TO EXCISION OF CLINICALLY BENIGN GINGIVAL LESIONS: A MULTIDISCIPLINARY APPROACH

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Aim: this study evaluates the clinical efficacy and esthetic outcomes of modified coronally advanced flap technique, as a minimally invasive surgical approach, combined to excision of clinically benign gingival lesions.

Methods: four patients, aged 35-60, with clinically benign gingival lesions, mostly in esthetics areas, were treated using the modified surgical approach. Unlike conventional coronally advanced flap technique, which often result in soft tissue defects, release incisions were avoided, and the free portion was rotated into the adjacent space to reconstruct the gingival papilla, avoiding a second surgical site or autologous graft. Clinical outcomes were evaluated 1 month, 3 months and 6 months follow-up.

Results: biopsy and histopathologic study were performed, and the benign nature of the lesions were confirmed with histological analysis. After 1 month the gingiva was optimal in color, contour, consistency and there was no swelling. The surgical results remained stable, no recession or recurrence was observed throughout the 6-month follow-up.

Conclusions: the modified coronally advanced flap technique combined to excision of benign gingival lesions, could be curative but also resulted in patient esthetic outcome, avoiding secondary surgery, and simplify the main surgical approach.

In these cases, the innovative technique perfectly reconstructs the gingival papilla, and no recessions were observed, maintaining the keratinized tissue, achieves the ideal aesthetic appearance and demonstrates no tendency of recurrence.

LATEST RESEARCH PROGRESS OF BIOMARKERS IN ADVANCED ORAL MEDICINE AND ORAL PATHOLOGY: A NARRATIVE REVIEW

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Aim: the aim of this narrative review was to summarize the current knowledge about saliva, blood and tissue biomarkers in the early detection and management of Oral Cancer and Oral Potentially Malignant Disorders (OPMDs).

Methods: the articles were selected from PubMed and Scopus databases, in English language, using a combination of keywords (biomarkers, Oral Cancer, OPMDs, dysplasia, liquid biopsy, saliva, blood, tissue) with publication date ranging from January 2020 to February 2025.

Results: a total of 41 articles were included in this review. The biomarkers of major interest were: regarding saliva, IL-6, IL-8, sCD44, TNF-α, CPLANE1, multipanel mRNA OAZ1, SAT, DUSP1, miRNA -21, -134, -138, -146a, -371, -424; regarding plasma and serum, IL-1β, p-53, TP53 (ctDNA), exosome-derived miRNAs and Cluster of Differentiation, Circulating Tumor Cells (CTCS); regarding tissues, E-cadherin, N-cadherin, caveolin-2, DEC1, CD44, CD11b, CD33, p53, Ki-67, p62, S100A7, ZNF582, PAX1 (DNA Methylation).

Conclusions: a wide range of biomarkers have been proven to be very effective and useful in clinical application with diagnostic, prognostic and predictive potential. Nowadays, miRNAs are wide-spreading due to the non-invasiveness and rapidity of saliva sampling and their stability of over 48 hours. CTCS, ctDNA and exosomes provide an improving real-time monitoring and progression predict of the disease through blood examination, although their half-life reaches at most 2.4 hours. Tissue biomarkers, especially CD44, offer more reliable and accurate results through immunohistochemistry.

EVALUATION OF ULTRA-HIGH FREQUENCY ULTRASOUND AS A GUIDE FOR DIAGNOSIS AND FOLLOW-UP IN ORAL MEDICINE: A NARRATIVE REVIEW

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Aim: Ultra-High Frequency UltraSound (UHF-US) is an emerging tool in oral medicine, offering high-resolution imaging of superficial soft tissues. This narrative review explores current and potential applications of UHF-US in diagnosing and monitoring autoimmune and inflammatory oral diseases, focusing on Sjögren's Syndrome (SS), Oral Lichen Planus (OLP), and vesiculobullous disorders.

Methods: the review integrates clinical evidence from primary studies, such as cross-sectional, observational, and pilot studies, to provide a comprehensive overview of the state of the art and highlight areas for further research.

Results: according to the literature, UHF-US operates between 30-100 MHz, enhancing spatial resolution while reducing tissue penetration. Probes in the 48-70 MHz range reach depths of about 10 mm, making them ideal for superficial oral structures. For SS, UHF-US showed the ability to evaluate glandular morphology and early structural changes in both adults and pediatric patients. For OLP, it allowed the measurement of epithelial thickening and subepithelial heterogeneity, which is indicative of chronic inflammation. For vesiculobullous diseases, it facilitated differential diagnosis through ultrasound parameters, identifying echo-structural patterns and aiding biopsy site selection.

Conclusions: UHF-US may be a promising non-invasive diagnostic technique for autoimmune oral diseases. While it does not entirely replace traditional diagnostic methods, its integration with other techniques could enhance diagnostic accuracy and reduce the need for invasive biopsies.

SALIVARY BIOMARKERS FOR DIABETES MELLITUS: TOWARDS A NON-INVASIVE DIAGNOSTIC TOOL

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Aim: Diabetes Mellitus (DM) is a chronic disorder characterised by persistent hyperglycaemia due to impaired insulin function. Traditional diagnosis relies on blood tests, which are invasive and uncomfortable. This study explores the feasibility of saliva as a less invasive alternative for DM diagnosis and which biomarkers are more suitable to reach a diagnosis.

Methods: a systematic literature review was conducted following PRISMA guidelines across databases including PubMed, Medline, Scopus, Web of Science, LILACS, Open Grey, and Cochrane Library. A total of 33 studies were analysed.

Results: findings indicate that salivary glucose correlates well with blood glucose, making it a promising biomarker. Other potential biomarkers include 1,5-anhydroglucitol, alpha-amylase, N-acetyl-β-D-hexosaminidase, asprosin, resistin, and fructosamine, while cystatin SA proved unreliable. Despite its advantages, challenges remain regarding standardized saliva collection and biomarker validation.

Conclusions: saliva offers a promising, non-invasive alternative for DM diagnosis. However, further research is needed to define biomarker thresholds and standardize methods. With continued advancements, salivary diagnostics could improve accessibility and early diabetes detection.

ORAL MANIFESTATIONS OF LANGHERANS CELL HISTIOCYTOSIS: A NARRATIVE REVIEW

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Aim: the study aims to discuss oral cavity involvement in Langerhans Cell Histiocytosis (LCH) and to raise awareness of the features of this diagnostically challenging entity.

Methods: LCH, previously recognised as histiocytosis X, represents a spectrum of clinicopathologic disorders characterized by abnormal proliferation of bone marrow-derived immature myeloid dendritic cells "Langerhans cells" in single or multiple organs. The standard histological diagnosis is based on recognition of Birbeck granules and positive immunohistochemistry for S100 and CD1a. Children and younger age are more common than adults.

Results: LCH demonstrates extensive clinical and radiographic features involving multiple sites. Oral signs and symptoms such as gingival bleeding, early tooth loss, and intraoral chronic abscesses, may suggest an initial manifestation of LCH. Oral mucosa may be involved showing painful ulcerative/erythematous lesions. Maxillary bones may be also involved showing radiographic well-defined radiolucent areas, dental mobility, and/or localized sensitivity.

Conclusions: untreated LCH can lead to irreversible oral tissue damage, including bone and tooth loss; in advanced cases, bone resorption may result in facial deformities or compromised masticatory function. Localized LCH, typically seen in young patients, can be successfully treated with surgical curettage, intralesional corticosteroid injections, or low-dose radiotherapy. Some localized cases regress spontaneously without treatment. Long-term follow-up is crucial to monitor for systemic involvement and recurrences.

A RARE CASE OF BULLOUS PEMPHIGOID FOLLOWING IMMUNE CHECKPOINTS INHIBITOR TREATMENT: A CASE REPORT AND A SYSTEMATIC REVIEW

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Aim: Immune Checkpoint Inhibitors (ICIs) have revolutionized cancer treatment, yet they can evoke immune-related Adverse Events (irAEs), some of which may be severe. This study aimed to describe a rare case of Bullous Pemphigoid (BP) induced by ICI therapy (ICI-BP). Moreover, a systematic review of published cases was performed.

Methods: a 71-year-old man was referred to our Oral Medicine Department in March 2024 with blistering lesions. His history revealed metastatic melanoma (diagnosed in 2019) treated with pembrolizumab. Clinical examination showed muco-cutaneous bullous lesions.

Laboratory tests detected anti-BP180 antibodies, while histology and direct immunofluorescence confirmed the diagnosis of BP. ICI therapy was discontinued, and systemic and topical steroids were initiated. After three months, his condition significantly improved, with no cancer relapse.

Results: a systematic PubMed search following PRISMA guidelines identified 243 studies, of which 36 were included, reporting 143 cases (107 males, 30 females; mean age: 68.9 years). BP was most commonly linked with PD-1 inhibitors, particularly pembrolizumab (n = 58) and nivolumab (n = 60). ICI interruption was necessary in 102 cases (71.8%).

Conclusions: ICI-BP presents a therapeutic challenge, requiring increased awareness among oncologists, dermatologists, and oral specialists to balance cancer treatment with managing immune complications.

BEHÇET'S DISEASE AND ITS MANIFESTATIONS IN DENTAL AND OCULAR FIELDS: A NARRATIVE REVIEW

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Aim: Behçet's Disease (BD) is a rare chronic systemic auto-inflammatory vasculitis of unknown etiology. The purpose of this narrative literature review is to analyze the complex pathogenesis of BD, focusing on its dental and ocular manifestations, as well as immunological aspects.

Methods: the research was conducted on March 2025 using PubMed and Scopus databases using the search terms: "Behçet disease" AND "Clinical manifestation" AND "Dentistry".

Results: BD typically affects young adults between the ages of 20-30. Pathogenesis involves dysregulation of both the innate and adaptive immune systems. Key clinical manifestations include recurrent oral aphthous ulcers, genital ulcers, and uveitis. Oral ulcers are the most common manifestation, occurring in 97-99% of patients. Ocular involvement, affecting approximately 30-70% of patients, carries a risk of severe vision loss and blindness. Uveitis is the most common ocular manifestation, often associated with retinal vasculitis.

Immunologically, BD is considered both an auto-inflammatory and autoimmune disease. Infections, particularly by Streptococcus species and herpes simplex virus (HSV)-1, have been suspected as potential environmental triggers.

Diagnosis is primarily clinical, based on a combination of symptoms and signs. Treatment aims to reduce inflammation, manage symptoms, and prevent serious complications.

Conclusions: future research should focus on identifying specific biomarkers and developing targeted therapies to improve the management of BD and the quality of life of patients.

SIMULATIONS FOR LEARNING IN FACIAL AESTHETIC AND REGENERATIVE MEDICINE; PREVENTION OF COMPLICATIONS IN THE USE OF BOTULINUM TOXIN AND HYALURONIC ACID

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Aim: the use of botulinum toxin and hyaluronic acid in Aesthetic Medicine (AM) procedures requires the acquisition of correct administration techniques through rigorous training to prevent local and systemic complications. The use of virtual reality headsets and high-fidelity facial simulators creates an ideal learning environment for the safe acquisition of theoretical and practical skills.

Methods: this paper aims to highlight the importance of theoretical and practical learning before embarking on AM practice.

Results: the use of botulinum toxin and hyaluronic acid is secondary to the acquisition of specific injection techniques and knowledge of the anatomical variability of patients. All this requires a high level of expertise from healthcare professionals, achievable following an appropriate training path with simulators and technologies that offer a controlled and repeatable learning environment.

Conclusions: the use of facial simulators and navigable anatomy viewers allows healthcare professionals to acquire theoretical and practical skills in a safe and controlled environment, reducing the risk of complications and improving the quality of procedures performed. However, clinical simulation cannot completely replace direct experience; it is essential to combine simulation sessions with direct practice on real patients under the supervision of expert tutors. Furthermore, it is crucial to continue research to develop increasingly realistic simulators and to evaluate the long-term effectiveness of simulation in AM training.

THE ROLE OF BIOPSY IN DIFFERENTIAL DIAGNOSIS

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Aim: since lichen planus presents signs and symptoms similar to other oral cavity pathologies, biopsy is the only analysis that allows for an accurate differential diagnosis.
Methods: a 78-year-old patient presented to the dental clinic of the IRCCS Ospedale San Gerardo di Monza with an extensive lesion affecting the palatal region and the upper alveolar process. Intraoral examination revealed a positive Nikolsky sign, and the patient referred pain and a burning sensation; besides he was diagnosed with diabetes. Consequently, a palatal biopsy was performed, as the lesion could be reconducted to either a bullous pathology or a lichen planus. If the former hypothesis had been confirmed, direct immunofluorescence and specific blood tests would have been prescribed, including the assessment of circulating autoantibodies (anti-Dsg1 and Dsg3 for pemphigus and anti-BP180 and BP230 for pemphigoid).
Results: the analysis of the biopsy sample performed at the pathology laboratory confirmed the presence of an erosive lichen planus lesion. Therefore, further tests for bullous pathology were not prescribed. A pharmacological therapy with Deltacortene 25 mg for six days was prescribed to alleviate the symptoms.
Conclusions: bioptic analysis represents the best procedure for establishing an accurate differential diagnosis in cases of suspected Lichen Planus. In particular, it is essential to avoid misidentifying an erosive phenotype as a bullous disease (pemphigus or pemphigoid).

CONSERVATIVE TREATMENT OF MEDICATION-RELATED OSTEONECROSIS OF THE JAW WITH HYPERBARIC OXYGEN THERAPY (HBOT): A COMPLEX CLINICAL CASE

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Aim: medication-related osteonecrosis of the jaw is defined as a drug-related adverse reaction characterized by the progressive destruction and necrosis of the mandibular and/or maxillary bone in patients exposed to medications known to increase the risk of the condition, in the absence of previous radiation therapy (SIPMO-SICMF 2023). When surgery is contraindicated, conservative treatments such as HyperBaric Oxygen Therapy (HBOT) may be considered. This report presents a complex MRONJ case treated with HBOT.
Methods: a 63-year-old woman with advanced papillary thyroid carcinoma had previously received high-dose zoledronic acid (cumulative dose 32 mg) and is currently on TKI therapy (Lenvatinib, Larotrectinib). In 2021, she developed MRONJ, which was unresponsive to topical ozonized gel therapy. Given that discontinuation of Lenvatinib was not feasible, surgical intervention was contraindicated. As a result, the patient was treated with HBOT.
Results: after eight HBOT sessions, symptoms improved, but necrotic bone persisted. A second cycle led to spontaneous sequestration and full re-epithelialization. However, a secondary infection with an extraoral draining fistula required targeted antibiotic therapy. The infection was resolved, and the lesion stabilized.
Conclusions: HBOT alleviated symptoms and promoted necrotic bone sequestration, allowing re-epithelialization. Despite its benefits, secondary infections require careful monitoring. A multidisciplinary approach integrating HBOT and antimicrobial therapy may optimize outcomes in MRONJ patients ineligible for surgery.

MEDICATION-RELATED OSTEONECROSIS OF THE JAW (MRONJ): DIAGNOSTIC CHALLENGES AND CONSERVATIVE MANAGEMENT IN HIGH-RISK PATIENTS

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Aim: Medication-Related Osteonecrosis of the Jaw (MRONJ) is an adverse reaction that leads to the progressive deterioration and necrosis of the mandibular or maxillary bone. It occurs in patients receiving medications that increase the risk, without a history of radiation therapy (SIPMO-SICMF 2023). Diagnosis relies on clinical and radiographic criteria, although radiological signs are often nonspecific. Persistent bone exposure for ≥8 weeks is the primary clinical criterion. This study presents a case of MRONJ with an unclear diagnostic presentation.

Methods: an 80-year-old patient with multiple myeloma on high-dose zoledronic acid (cumulative dose: 48 mg) presented with pain in the left maxilla. Metronidazole and clarithromycin were prescribed for a suspected prosthetic infection, and panoramic radiography yielded normal findings. One month later, a CT scan showed bone rarefaction at the left mandibular angle (tooth 37 extraction site, 18 months prior) without bone exposure. Clinical signs appeared a week later, confirming MRONJ. The patient was referred to our unit.

Results: weekly ozonated gel (Ozosan®) applications relieved symptoms and promoted re-epithelialization in two weeks. Despite atypical radiographic findings, MRONJ was confirmed upon bone exposure, reinforcing SIPMO-SICMF recommendations for early suspicion in symptomatic patients on antiresorptives.

Conclusions: early signs are often absent, complicating MRONJ diagnosis. Close monitoring is crucial for high-risk patients. Ozonated gel prevented surgical intervention, alleviating symptoms and supporting healing.

COLORECTAL ADENOCARCINOMA METASTASES TO THE ORAL CAVITY: CASE REPORT AND SYSTEMATIC REVIEW OF LITERATURE

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Aim: metastatic tumors in the oral cavity originating from rectal adenocarcinoma are extremely rare. This research aims to present a case of colorectal cancer metastasis in the oral cavity and to conduct a systematic review assessing the existing literature on similar occurrences.

Methods: a case of colorectal cancer metastasis to the oral cavity was reported. A literature review was conducted using PubMed, EMBASE, and the Cochrane Library to evaluate the clinical and radiological features, therapeutic approaches, and survival outcomes of colorectal cancer metastases in the oral cavity.

Results: we report a rare case of a 71-year-old male patient who was referred due to the appearance of a swollen, bleeding and painful lesion in the mandibular gingiva. Radiographic examination showed a radiolucency in the mandibular region. Incisional biopsy indicated a metastatic lesion originating from a primary colorectal adenocarcinoma. A literature review identified 70 cases of colorectal cancer metastases in the oral cavity, with a predilection for the mandible as well as the mandibular and maxillary gingiva. The treatment of metastatic colorectal cancer in the oral cavity most commonly included chemotherapy combined with adjuvant radiotherapy.

Conclusions: colorectal cancer metastases in the oral and maxillofacial region are uncommon. Consequently, identifying a metastatic lesion in the oral cavity represents a diagnostic challenge for both clinicians and pathologists.

MUCO-GINGIVAL LESIONS FROM SCURVY: CASE REPORT

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Aim: oral evaluation is essential in patients with suspected scurvy, a rare disease but still present in malnutrition settings. The oral cavity examination allows to identify early signs such as gingival bleeding, hypertrophy and dental mobility, indicative of ascorbic acid deficiency.

Methods: a 49-year-old female patient presented for clinical observation at our Oral Medicine and Pathology Clinic of the Department of Dentistry and Maxillofacial Surgery, of the IRCCS Fondazione Ca' Granda del Policlinico di Milano for generalized gingival hypertrophy. On physical examination, generalized gingival hypertrophy, bleeding and hyperpigmentation of the mucosa were present. Drug-related causes were excluded, investigating the patient's clinical history, Kaposi's sarcoma and possible vasculitis were placed in the differential diagnosis. Investigating the patient's habits, a strong nutritional deficiency was noted due to a diet based exclusively on dairy products for eight years.

Results: an incisional biopsy was performed, the histopathological result showed mucosal ulceration with vascular proliferation, blood extravasations and hemosiderin deposits. The patient was sent for an opinion visit to the immunology unit, who formulated the clinical suspicion of ascorbic acid deficiency and malnutrition secondary to severe food restriction and then the hypothesis was confirmed by the evaluation of the internal medicine unit.

Conclusions: the oral evaluation proved to be preliminary to identify early ascorbic acid deficiency in this patient, allowing a multidisciplinary approach and timely intervention. This case highlights the importance of a careful dietary history in the differential diagnosis of gingival hypertrophy, placing attention on pathologies that may be considered obsolete nowadays.

UPPER LIP HEMANGIOPERYCITOMA: A CASE REPORT

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Aim: to describe a case of upper lip hemangiopericytoma, a rare vascular tumor that can occasionally manifest in the oral cavity.

Methods: a 58-year-old woman was referred for evaluation of a sessile exophytic lesion, approximately 5 mm in diameter, located on the right upper hemilabium. The lesion was red, highly vascularized, firm, mobile over underlying tissues, and slightly painful upon palpation. The patient reported a progressive increase in size over time. An incisional biopsy suggested a hemangiopericytoma. Consequently, an oncological consultation and a head and neck ultrasound were requested. Additionally, a Magnetic Resonance Imaging (MRI) scan with and without contrast was prescribed in preparation for excision.

Results: the biopsy site healed without complications. Both MRI and ultrasound showed no lymph node involvement or metastasis, only an increase in lesion size. Excision of the lesion was performed, and appropriate follow-up was planned according to the oncologist's recommendations.

Conclusions: hemangiopericytoma is a tumor with uncertain biological behavior and significant proliferative potential. Early diagnosis is crucial, and surgical excision remains the treatment of choice, whereas chemotherapy and immunotherapy are reserved for confirmed malignant cases. Due to the poor correlation between histological features and clinical behavior, thorough investigation of potential metastasis is always recommended. Prolonged follow-up is essential to monitor for possible recurrence.

ORAL ECCHYMOSES AS EARLY MANIFESTATIONS OF HEPARIN-INDUCED THROMBOCYTOPENIA: A CASE REPORT

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Aim: the aim of this case report is to highlight the central role of the oral health care provider, whose careful intra-oral examination prevented serious adverse events for the patient.

Methods: a 61-year-old female patient with chronic dilated-hypokinetic cardiomyopathy, biventricular dysfunction was admitted to Intensive Care Unit due to worsening heart failure. The day after the admission a severe reduction in glomerular filtration rate led to the replacement of Edoxaban with Low Molecular Weight Heparin (LMWH). On day 6 the platelet count began decreasing rapidly (139,000/μL versus 108,000/μL) and even further on following days (Day 7: 95,000/μL; Day 11: 76,000/μL). On day 13 when platelet count reached 69,000/μL, the patient was referred to the Dental Unit for spontaneous oral bleeding. Intra-oral examination revealed multiple hemorrhagic lesions on the hard palate, buccal mucosa, and ventral tongue bilaterally. HIT was suspected and an antiplatelet factor 4 (PF-4) test was requested.

Results: based on the positive test results, LMWH was interrupted, and it was switched to Apixaban. Three days later the patient's platelet count increased to 152,000/μL and the oral lesions disappeared. At a two-week follow-up platelet count remained normal.

Conclusions: this case underscores the pivotal role of oral medicine in managing medically complex patients, where a systematic oral examination and laboratory tests aid early diagnosis of medication-related adverse events, highlighting the importance of collaboration between cardiologists, hematologists, and oral health care providers.

DIFFERENTIAL DIAGNOSIS OF INFILTRATING-ULCERATIVE LESION IN A VERY YOUNG PATIENT: CASE REPORT

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Aim: oral ulcers can present a diagnostic challenge for clinicians due to the overlap of clinical and histologic features among different types of lesions. Most ulcerative lesions of the oral mucosa can be classified into four main categories: infectious, immune-related, traumatic, or neoplastic.

Methods: a 19-year-old male patient presented to the Oral Medicine Section, CIR Dental School of Turin, with a persistent ulcerative lesion on the right buccal mucosa for approximately two months with mild symptoms. Clinical examination revealed an ulcerative-infiltrative lesion affecting the lower molar gingiva and buccal mucosa on the right side. Blood tests showed neutrophilic leukocytosis, as well as elevated ESR and CRP levels, suggesting a potential bacterial infection. An incisional biopsy was performed, and tests for syphilis and for tuberculosis were requested, while standard antibiotic therapy was started.

Results: tests for syphilis and tuberculosis results negative, while histopathological examination revealed the presence of microbial aggregates, ruling out a neoplastic ulcer. An empirical antibiotic therapy was started at the end of which the clinical picture was completely resolved, and both white blood cell and neutrophil counts returned to normal values.

Conclusions: although many ulcers can be clinically classified, a biopsy is sometimes necessary, since infectious and neoplastic ulcers can exhibit an almost identical clinical presentation. In any case, any unexplained ulcer in the oral cavity that does not resolve within two weeks should undergo biopsy.

AMELOBLASTIC FIBROMA OF MAXILLA: A CASE REPORT AND LITERATURE REVIEW

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Aim: ameloblastic fibroma is a benign mixed odontogenic neoplasm that most commonly presents in the posterior mandible of young patients as an asymptomatic, slow-growing swelling. Conservative surgical excision remains the treatment of choice, typically resulting in favorable outcomes. This report aims to describe a rare case of ameloblastic fibroma located in the maxilla of a 13-year-old boy and to review the relevant literature regarding its diagnosis and management.

Methods: a case of ameloblastic fibroma in a 13-year-old boy is presented. The tumour was located in the posterior part of the right maxilla and was associated with the failure of permanent molar eruption. Preoperative imaging, including panoramic radiography and computed tomography, was utilized to assess the lesion's extent and its relationship with surrounding anatomical structures. Local excision was performed under general anesthesia without postoperative complications.

Results: histological examination confirmed the diagnosis of ameloblastic fibroma. The patient was monitored over a five-year follow-up period, during which no recurrence was observed.

Conclusions: this case underscores the importance of early diagnosis and complete surgical removal in managing ameloblastic fibroma, ensuring a favorable prognosis. The literature review highlights the rarity of this lesion in the maxilla and the need for long-term follow-up. In fact, approximately 44% of patients diagnosed with ameloblastic fibrosarcoma had a previous history of ameloblastic fibroma. Therefore, prolonged monitoring is essential to detect potential malignant transformation at an early stage.

ANALYSIS OF FACIAL CHANGES ASSOCIATED WITH RADIOTHERAPY OF THE HEAD AND NECK DISTRICT THROUGH 3D STEROPHOTOGRAMMETRY

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Aim: this case report aimed to analyse soft tissue facial changes after head and neck radiation. Radiation Therapy (RT) in Head and Neck Cancer (HNCs) may commonly be associated with reversible and irreversible soft tissues alterations causing skin thickening and texture changes, lymphedema, and stranding of subcutaneous fat, impacting patients' quality of life and potentially leading to psychological distress.

Methods: the case reported a 14-year-old female presenting a squamous cell carcinoma of the nasopharynx who underwent RT. Two 3D scans of the face were acquired with the stereophotogrammetry (3dMD Trio system, Atlanta, Ga) with the patient oriented in a natural head position: the first before the start of RT and the second after 45 days at the end of RT. Then, the two 3D scans of the face were superimposed with Geomagic Control software (3D Systems, Rock Hill, SC) to assess any facial changes resulting from RT using 9 medial and bilateral facial landmarks.

Results: the 3D color map showed a soft tissue reduced volume in the chin and mandible region, while a soft tissue atrophy was found in the zygomatic region and near the mouth angles.

Conclusions: RT in HNCs induces effective volume loss in the soft tissues of the facial region, particularly in the middle and lower third of the face.

A YOUNG CHINESE GIRL WITH LOWER LIP SCHWANNOMA, AN UNCOMMON CASE

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Aim: Schwannoma is a benign peripheral nerve sheath tumour that rarely occurs in the oral cavity, that originates from the nerve Schwann cells. When present intraorally, it most commonly affects the tongue but can also arise in other soft tissues. Due to their non-specific presentation, intraoral schwannomas may be mistaken for other benign oral lesions.
Methods: during an orthodontic consultation, a 20-year-old female patient, presented with a slow-growing, painless swelling located on the right lower lip, in differential diagnosis with mucocele. Clinical examination revealed a well-circumscribed, firm and non-ulcerated nodule. An excisional biopsy was performed, followed by postoperative one, three- and six-months follow-up. The lesion measured approximately 7 mm, and the histopathological examination confirmed a diagnosis of schwannoma, characterized by Antoni A and B areas and strong S-100 protein immunoreactivity.
Results: intraoral schwannomas are uncommon, often asymptomatic, and typically diagnosed through histopathological examination. Surgical excision is the treatment of choice, with a low recurrence rate. In this case, complete surgical excision was curative, and no recurrence was observed during the 6-month follow-up.
Conclusions: although rare, intraoral schwannoma should be considered in the differential diagnosis of slow-growing oral masses. Complete surgical excision is the gold standard, with an excellent prognosis. Early recognition and appropriate management are essential for optimal patient outcomes.

SPONTANEOUS REOSSIFICATION OF LARGE IDIOPATIC MANDIBULAR OSSEOUS LESION IN KIDNEY TRANSPLANTED PATIENT

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Aim: we present the case of a 45-year-old female patient with severe chronic kidney disease associated with endometriosis and polycystic liver disease. The patient was referred to the Department of Oral and Maxillofacial Surgery at Sant'Andrea Hospital in Vercelli for dental evaluations prior to kidney transplantation.
Methods: during the initial examination, mandibular radiolucencies were observed and further investigated with mandibular Computed Tomography (CT). The second-level imaging revealed a large osteolytic lesion extending from tooth 45 to tooth 37, with all involved teeth testing positive for vitality.
Results: surgical excision and histopathological examination of the lesion were scheduled. During surgery, no cystic component was observed; surgical debridement of the lesion was performed, and tissue fragments were submitted for pathological analysis. However, the histopathological findings were not indicative of any specific pathological condition.
Conclusions: follow-up CT imaging performed six months later showed initial radiopacity of the lesion, which was confirmed by subsequent radiological evaluations.

POST PRODUCTION ANALYSIS IN THE EVALUATION OF THE CLINICAL OUTCOME OF TOLUIDINE BLUE MEDIATED PHOTODYNAMIC THERAPY: A PRELIMINARY REPORT

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Aim: this study aims to evaluate the clinical outcome of toluidine blue-mediated PhotoDynamic Therapy (PDT) in the treatment of lip leukoplakia.

Methods: a 59-year-old male was referred to the Oral Pathology Unit at the University of Campania Luigi Vanvitelli for a white lesion on the lower lip. An incisional biopsy confirmed the clinical diagnosis of Oral Leukoplakia (OL). The patient underwent PDT using toluidine blue as a photosensitizer. Clinical photographs were taken before treatment (T0), at 7 days (T1), and at 21 days post-treatment (T2). ImageJ software was used to measure lesion size, and an Efficacy Index was calculated. Patient discomfort was assessed using the Visual Analogue Scale (VAS).

Results: the patient received two PDT sessions. A reduction in lesion size was observed at T1, with complete clinical resolution at T2. Lesion areas measured 17.98 mm^2 at T0, 14.21 mm^2 at T1, and 0 mm^2 at T2. The Efficacy Index was 20.96% at T1 and 100% at T2. VAS scores indicated low discomfort during the procedure (score of 2), with no discomfort reported at T1 and T2 (score of 0).

Conclusions: this case highlights the potential role of toluidine blue-mediated PDT as a treatment option for OL and suggests that digital image analysis can be a valuable tool for monitoring lesion progression. Further studies are required to validate this protocol as a complementary approach in the clinical management of OL.

MANAGEMENT OF RECURRENT ORAL CANDIDIASIS IN ELDERLY TRANSPLANT RECIPIENTS

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Aim: this case report explores the management of recurrent oral candidiasis in an 83-year-old liver transplant recipient with type 2 diabetes and Hashimoto's thyroiditis. It highlights the challenges of antifungal resistance and the necessity of tailored treatment strategies in immunocompromised patients.

Methods: a progressive treatment plan was implemented, beginning with Fluconazole and transitioning to Itraconazole and Posaconazole due to emerging resistance. Rigorous denture hygiene, including disinfection with sodium hypochlorite, was introduced. Adjunctive therapies such as iodine-based antiseptics were used to minimize biofilm formation and enhance antifungal efficacy. Follow-ups and microbiological tests guided therapy modifications.

Results: despite resistance to multiple antifungal agents, a comprehensive approach integrating antifungal therapy, denture hygiene, and antiseptic measures led to a marked reduction in Candida colonization. Follow-up swabs confirmed decreased fungal load, with symptom resolution reported. Ongoing monitoring remains essential to prevent recurrence.

Conclusions: managing recurrent oral candidiasis in transplant recipients requires a multifaceted approach. Beyond antifungal therapy, denture care, antiseptics, and emerging solutions like probiotics and antimicrobial photodynamic therapy show promise. Personalized treatment is crucial for long-term infection control in immunocompromised patients.

ORAL MANIFESTATIONS IN STIFF-PERSON SYNDROME: CASE REPORT AND THERAPEUTIC APPROACH

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Aim: this study reports a case of successful management of oral mucositis in a patient with Stiff-Person Syndrome Disorder (SPSD).
Stiff-Person Spectrum Disorder is a rare autoimmune neuromuscular disorder characterized by muscle rigidity and severe spasms, frequently associated with autoimmune conditions and anti-GAD65 antibodies. Standard treatments include Baclofen, Clonazepam, Rituximab, and IntraVenous ImmunoGlobulins (IVIG).
Methods: a 57-year-old woman with SPSD presented aggressive oral mucositis involving buccal mucosa and severe burning. Oral Lichen Planus and bullous diseases were excluded via biopsy and immunofluorescence. Histological examination revealed non-specific erosive chronic inflammation with hyperparakeratosis and regenerative basal hyperplasia. Due to previous therapeutic resistance to Rituximab and IVIG, Azathioprine (50 mg/day) was prescribed. Following resolution, maintenance therapy with topical Clobetasol Propionate 0.05%, applied with custom masks, was initiated.
Results and conclusions: the substantial improvement observed in the patient's oral lesions and symptoms highlights Azathioprine's potential as an effective treatment for nonspecific mucositis in complex autoimmune cases. Maintenance therapy with topical Clobetasol Propionate may further support sustained clinical outcomes.

SEVERE ORAL INFECTION BY *PSEUDOMONAS AERUGINOSA* IN A PATIENT WITH SEPTIC SHOCK

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Aim: the aim of this case report is to describe a severe oral infection caused by *Pseudomonas aeruginosa* in an immunocompromised patient. *Pseudomonas aeruginosa* is an opportunistic Gram-negative pathogen that rarely manifests as an oral infection.
This report emphasizes the clinical significance of necrotizing oral infections associated with *Pseudomonas aeruginosa* in immunocompromised individuals presenting multiple risk factors.
Methods: a 47-year-old female patient with liver cirrhosis awaiting transplantation was admitted to the Intensive Care Unit (ICU) due to septic shock secondary to Clostridium difficile infection. After two weeks of hospitalization, the patient developed extensive oral lesions characterized by severe necrotizing ulceration affecting the maxillary and mandibular gingiva as well as the lingual mucosa, leading to significant tissue necrosis and exposure of underlying bone.
Results: microbiological swab cultures confirmed a secondary infection with *Pseudomonas aeruginosa*. Intravenous antibiotic therapy with piperacillin-tazobactam was initiated. Partial clinical improvement was observed within the first week; however, complete healing of the lesions extended beyond three months. Long-term sequelae included persistent soft tissue fragility and gingival recession, notably in the regions most severely affected.
Conclusions: this case underscores the potential of *Pseudomonas aeruginosa* to cause severe oral infections in critically ill and immunocompromised patients. Contributing factors to disease severity likely included prolonged ICU hospitalization, underlying liver cirrhosis, and smoking history. Prompt diagnosis, appropriate antibiotic management, and diligent follow-up are essential for achieving favorable clinical outcomes in such complex infections.

MHS MOUTH HYDRATION SYSTEM IN THE MANAGEMENT OF DRUG-INDUCED ORAL COMPLICATIONS IN A MULTIPLE SCLEROSIS PATIENT: A CASE REPORT

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Aim: Multiple Sclerosis (MS) is a chronic, inflammatory and autoimmune neurological disease; the most used treatment are chemotherapy and monoclonal antibodies, which have systemic side effects and also affect the oral cavity. Xerostomia induced by chemotherapy drugs is a frequent and disabling problem that should not be underestimated by any/or oral health professional. With this work we want to demonstrate how oral health professionals can improve the oral conditions of this type of patient.
Methods: a patient with MS was followed, who had previously experienced severe xerostomia induced by chemotherapy and did not regress with the use of monoclonal antibodies. She has undergone occupational prevention and prophylaxis therapy and was prescribed home therapy: toothpaste and mouthwash at least three times a day and spray whenever the patient needed, for at least one month.
Results: after only one month of professional treatment, from the use of products dedicated to xerostomia, we noticed a reduction in plaque acidogenic activity, reduced presence of plaque, increased saliva buffer capacity, reduced sensitivity and perceived discomfort.
Conclusions: the reduction and absence of salivary secretion has negative consequences on the oral cavity whose criticality is conditioned by the extent and persistence of the problem. Working on the improvement of saliva quality (buffer capacity) on the home and professional oral hygiene of the patient we have reduced the problems related to it and improved the condition of oral health of the patient.

USE OF L-PRF IN THE TREATMENT OF OSTEONECROSIS OF THE JAWS (MRONJ) IN PATIENTS TREATED WITH ANTIRESORPTIVE DRUGS: CASE SERIES

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Aim: Medication-Related Osteonecrosis of the Jaws (MRONJ) is a severe complication associated with antiresorptive drugs. Leucocyte- and Platelet-Rich Fibrin (L-PRF) is an autologous biomatrix with regenerative properties. This study evaluates the effectiveness of L-PRF in MRONJ treatment.
Methods: three patients with stage second and third MRONJ were treated with surgical debridement and L-PRF application. Clinical follow-up was conducted at six months. Outcomes were assessed based on pain reduction, mucosal healing, and bone regeneration.
Results: all patients present significant clinical improvement, with symptom reduction, mucosal closure, and favorable outcome in follow-up. No recurrence was observed during the observation period.
Conclusions: L-PRF is an effective strategy for MRONJ management, promoting healing and improving patients' quality of life. Further studies with larger cohorts are needed to confirm these findings.

ORAL SQUAMOUS CELL CARCINOMA AROUND DENTAL IMPLANTS: CASE SERIES AND SYSTEMATIC REVIEW OF LITERATURE

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Aim: the Oral Squamous Cell Carcinoma (OSCC) is one of the most common malignancies worldwide and represents the most frequent neoplasm in oral cavity. The aim of this study is to i) report 6 cases of OSCC occurring around dental implants at our department, and ii) perform a systematic review of literature on OSCC in peri-implant tissues.

Methods: 6 cases of OSCC were described. A systematic electronic literature search was conducted through the PubMed and Embase database, including articles published from 1983 to 2025.

Results: 6 patients were referred for evaluation of a lesion affecting the gingival mucosa around dental implants. An incisional biopsy was performed in all cases, confirming the diagnosis of OSCC.

The literature search identified 96 cases of OSCC occurring around dental implants, with the majority involving the mandibular region. The most common clinical presentation was an exophytic mass (42). Female patients accounted for 51% of the cases, while 55% of the patients had no history of tobacco or alcohol consumption. Bone loss was reported in 66 patients. The management of OSCC most frequently involved surgical treatment, often combined with radiotherapy and/or chemotherapy.

Conclusions: OSCC can develop in peri-implant tissues, posing a diagnostic and therapeutic challenge. The clinical presentation is often non-specific, emphasizing the need for early biopsy of suspicious lesions. While surgical resection remains the mainstay of treatment, a multidisciplinary approach is crucial for optimal management.

HIDDEN CAUSES OF OROFACIAL PAIN: IDENTIFYING “RED FLAGS” IN CLINICAL DIAGNOSIS

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Aim: non-odontogenic orofacial pain includes clinical presentations related to temporomandibular disorders, cranial nerve dysfunction, or idiopathic pain. Understanding the underlying etiology is essential for appropriate clinical management.

We present two cases in which an accurate examination of patients’ presenting complaints led to the discovery of space-occupying lesions in the brainstem.

Methods: an 82-year-old male reported continuous, dull pain with associated spikes and irradiation in the lower right mandible, exacerbated by function or light touch. Pain was reported adjacent to element 4.8, which was apparently decayed and in contact with the inferior alveolar nerve. Additionally, the patient reported right-sided palatal pain and right cheek paresthesia. The second patient (65-year-old female), under treatment for well-controlled oral lichen planus, complained of burning pain in the left cheek and tongue, along with pruritus in the ipsilateral retroauricular area.

Results: as the clinical symptoms were inconsistent with odontogenic pain, nuclear magnetic resonance (MRI) was requested. In the first case, an acoustic neuroma was detected, leading to a diagnosis of “secondary trigeminal neuralgia”. In the second case, a meningioma was identified, and final diagnosis was “painful trigeminal neuropathy”.

Conclusions: these case reports highlight the role of the oral medicine physician in recognizing “red flags” of non-odontogenic orofacial pain, especially when unilateral and atypical. Advanced imaging techniques such as MRI play a key role in the diagnostic process.

ORAL HEALTH STATUS IN CANCER PATIENTS: A CASE-CONTROL OBSERVATIONAL STUDY

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Aim: Bone Metastatic Cancer (BMC) and Head and Neck Cancer (HNC) patients require specific dental care to manage the effects of RadioTherapy (RT) and AntiResorptive (AR) drugs. This case-control study aimed to compare the Oral Health (OH) status between BMC, HNC patients, and healthy controls, identifying risk factors for poor OH.

Methods: this study was conducted from 2018 to 2024 at the Oral Medicine, Head and Neck Department, IRCCS A. Gemelli University Polyclinic Foundation, Rome. Patients were evaluated clinically and radiographically using the DMFT index, periodontal charting, and orthopantomographs. Poor OH was defined by stage III/IV periodontitis and/or DMFT ≥13. Ethical approval was granted by the Ethics Committee of the Catholic University of the Sacred Heart. A univariate statistical analysis was performed to detect the association between the different clinical variable and OH.

Results: a total of 510 patients (170 per group, mean age 60.33) were analyzed. The HNC group had the highest prevalence of severe periodontitis (54%), a mean DMFT of 16.9, and poor OH. Multivariate analysis identified smoking (OR: 3.22, p <0.0001), HNC (OR: 2.36, p = 0.003), and age >70 (OR: 17.44, p <0.0001) as significant risk factors for poor OH. For patients aged 60-69, the OR was 5.17 (p <0.0001), and for 50-59 years, 4.22 (p <0.0001).

Conclusions: HNC patients showed significantly worse OH than BMC patients and controls, emphasizing the need for better dental care in oncology. Smoking and age were significant risk factors for poor OH.

SURGICAL TREATMENT IN THE MANAGEMENT OF PATIENTS WITH ORAL LEUKOPLAKIA: MONOCENTRIC PRELIMINARY DATA FROM A RANDOMIZED CLINICAL TRIAL AND A RETROSPECTIVE STUDY

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Aim: this study is part of a multicenter study evaluating the role of surgery in reducing the risk of carcinoma in patients with oral leukoplakia. While previous findings have been published, this report presents the latest results from a Randomized Controlled Trial (RCT) and a retrospective study.

Methods: the RCT enrolled 49 patients: 26 underwent surgical excision (test group), while 23 were managed with a "wait and see" approach (control group). The primary outcome was the incidence of Oral Squamous Cell Carcinoma (OSCC) over a five-year follow-up. Secondary outcomes included recurrence rates, histopathological findings, and the time to onset of a new malignant lesion. Additionally, a retrospective cohort of 229 patients was analyzed.

Results: the RCT recorded three cases of new malignant lesion development (6,1%): one in the surgical group and two in the control group. The OSCC in the surgical group was diagnosed 11 months after treatment at a different site from the excised leukoplakia. In the control group, OSCC developed within the oral leukoplakia sites at 28 and 32 months, respectively. The retrospective study found a malignancy rate of 5.6%, with an average onset time of 53.8 months. Histopathological analysis confirmed that dysplastic lesions were associated with a significantly shorter time to malignancy onset compared to non-dysplastic lesions (average of 29 vs 69 months).

Conclusions: due to the limited sample size and follow-up period, the study does not provide conclusive evidence supporting surgical excision over "wait and see" approach. However, the data suggests that dysplastic leukoplakia increases the risk of malignancy onset. Further research with a larger cohort and extended follow-up is ongoing at the University of Milan and the University of Turin.

DETECTION OF NEOPLASTIC SALIVARY BIOMARKERS FOR THE EARLY DIAGNOSIS OF ORAL POTENTIALLY MALIGNANT DISORDERS (OPMDS) USING A NEW POINT OF CARE (POC) DEVICE

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Aim: this study aims to improve early detection of Oral Potentially Malignant Disorders (OPMDs) to reduce misdiagnosis and optimize patient management. A Point of Care (PoC) device could assist general practitioners in recognizing OPMDs, facilitating timely intervention and biopsy planning. Future integration of Artificial Intelligence (AI) may enhance lesion classification and risk assessment.

Methods: a total of 39 participants (14 OPMD patients, 25 controls) were recruited at Sapienza University of Rome. Inclusion criteria include oral leukoplakia, proliferative verrucous leukoplakia, oral lichen planus, and HPV-related lesions. Exclusion criteria include confirmed Oral Squamous Cells Carcinoma, erythroplakia, chronic ulcerative lesions, and uncontrolled diabetes. Data collection involved demographic, medical and dental history, intraoral examination, photographic documentation, and salivary sample analysis using the PoC device to assess the risk of malignant transformation.

Results: the PoC device provides a risk classification (low, moderate, elevated) based on salivary biomarkers analysis. Among the 14 OPMD patients, 57.14% had an elevated risk, 21.43% moderate, and 21.43% low, while 88% of the 25 control patients had a low risk and 12% moderate.

Conclusions: PoC devices could enhance early OPMDs diagnosis, reducing misdiagnosis and improving patient outcomes. AI integration may refine lesion detection and risk assessment, supporting OSCC prevention. This approach aims to improve diagnostic accuracy among general practitioners and facilitate specialist evaluation.

PRESENCE OF EPIGENETIC ALTERATIONS IN CLINICALLY HEALTHY MUCOSA OF PATIENTS WITH ORAL SQUAMOUS CELL CARCINOMA

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Aim: recent data showed that CpG methylation changes may play a role in the development of field cancerization in the oral mucosa. The aim of the present study was to analyze from oral brushing the DNA methylation status of clinically healthy mucosa of OSCC samples, patients surgically resected for OSCC (OSCCr) and a control group of healthy donors.

Methods: oral brushing cell collection for DNA methylation analysis has been performed in clinically distant mucosa (opposite cheek respect to tumor mass) in 81 OSCC patients, in clinically healthy mucosa of 102 OSCCr and in the clinically healthy cheek of 152 donors. Quantitative DNA methylation level of pre-selected 13-gene panel was evaluated and a positive or a negative score was calculated for each brushing sample based on a predefined cut-off value.

Results: a positive score has been detected in contralateral healthy mucosa of 16/81 OSCC patients and 25/102 OSCCr patients. Two of 152 cheeks of healthy donors showed a positive score. Kruskal-Wallis analysis showed a significantly higher methylation score in clinically healthy mucosa of OSCC and OSCCr patients (F =, p <.05). Majority (>90%) of CpG islands of *ZAP70, GP1BB, PARP* and *NTM* resulted significantly altered in clinically healthy mucosa of OSCC and OSCCr patients.

Conclusions: data from the present study showed epigenetic alterations in clinically healthy mucosa distant from tumor mass or area previously treated for oral cancer. These data support the hypothesis that DNA methylations analysis is a good marker to reveal field cancerization effect in oral mucosa.

CIRCULATING NRP-1 AND PD-L1 AS PIVOTAL BIOMARKERS IN HEAD AND NECK CANCER

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Aim: a biomarker can be defined as any measurement reflecting a physiological and pathological process in a living cell. The microenvironment of Head and Neck Cancer (HNC) is highly immunosuppressive, and Programmed cell Death-Ligand 1 (PD-L1) and Neuropilin (NRP) are a major challenge for HNC preventive diagnosis.

Methods: the protocol proposal consists of collecting blood and tissue samples from healthy and cancer patients. After centrifugation, serum NRP-1 level could be measured using a commercially available, quantitative sandwich enzyme immunoassay technique in accordance with the manufacturer's instructions.

Paraffin-embedded HNC and normal tissues could be dewaxed, rehydrated and antigen-retrieval, then incubated with the peroxidase, then with a chromogen. The evaluation of PD-L1 expression is made by Combined Positive Score (CPS).

Results: given its interactions with numerous ligands and growth factors involved in tumour development and angiogenesis, NRP1 may contribute significantly to tumour progression and other immune disorders. NRP1 therefore presents an interesting and novel therapeutic target. Serum NRP-1 higher levels in cancer patients compared with the healthy subjects suggest that it can be considered an interesting biomarker for HNC.

PD-L1 expression in HNC patients is significantly correlated with improved overall survival when treated with PD-1 or PD-L1 inhibitors. Patients with higher levels of PD-L1 expression demonstrate an even more pronounced survival benefit from PD-1/PD-L1 inhibitor therapies.

Conclusions: NRP-1 and PD-L1 investigations are promising strategy to diagnosis and therapy. PD-L1 and NRP-1 tissue expression and NRP-1 serum levels are unlikely to be a prognostic factor for identification of HNC on early stage.

CLINICAL EVALUATION AND CHARACTERIZATION OF NORMAL PERIORAL TISSUES WITH A NEW ADVANCED VIDEODERMATOSCOPY METHOD: A CROSS-SECTIONAL PILOT STUDY ON DENTAL STUDENTS

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Aim: to describe the key dermato-mucosal structures of the healthy perioral tissues and assess their degree of visibility and identification, using an innovative advanced dermatoscopic technique.

Methods: this cross-sectional pilot study included dental Students of A. Gemelli University Polyclinic Foundation. It was conducted a Dermatoscopic analysis of the anterior chin, vermilion border, and vermilion zone; non-polarized light enhanced surface structure visibility (skin texture) while polarized light improved pore detection and vascular visualization. Fluorescence Advanced Videodermatoscopy (FAV) at 400x magnification provided detailed visualization of epithelial layers and vascular structures, with the stratum corneum and hair structures achieving the highest visibility scores.

Results: forty Caucasian subjects (65% women, mean age 23.8±2.5 years), predominantly Fitzpatrick phototypes II–III and normal skin type (82.5%) were included. At 30x and 150x magnifications, white and polarized light played complementary roles in evaluating different anatomical regions. Using the FAV, the stratum corneum consistently demonstrated showed the highest visibility among the epithelial layers, while the stratum lucidum and stratum spinosum demonstrated the lowest. No significant differences in visibility were found according to gender, skin type, or phototype.

Conclusions: advanced videodermatoscopy effectively characterized healthy perioral tissues, with complementary roles of light modalities and magnification enhancing structural visualization.

INSIDE THE FIRE. EXPLORING THE IMPACT OF ANXIETY, DEPRESSION, AND SLEEP DISTURBANCES ON PAIN PERCEPTION IN BURNING MOUTH SYNDROME: A CROSS-SECTIONAL STUDY OF 200 PATIENTS

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Aim: the study investigates how anxiety, depression, and sleep disturbances affect pain perception and clinical impairment in Burning Mouth Syndrome (BMS).

Methods: 200 BMS patients were enrolled. The Hamilton Rating Scale for Depression (HAM-D) and Anxiety (HAM-A), Epworth Sleepiness Scale (ESS), Pittsburgh Sleep Quality Index (PSQI), Visual Analogue Scale (VAS), the Short Form of McGill Pain Questionnaire (SF-MPQ), the Clinical Global Impressions Severity of Illness (CGI-S) and the Age-Adjusted Charlson Comorbidity Index (AACCI) were used. Correlation tests and path analysis explored the relationships among psychological factors, sleep quality, and BMS severity.

Results: pain intensity correlated significantly with anxiety (HAM-A: $\rho = 0.253$, $p < 0.001$), depression (HAM-D: $\rho = 0.152$, $p < 0.05$), shorter sleep duration ($\rho = -0.19$, $p < 0.01$). Path analysis showed that anxiety significantly increased pain intensity ($\beta = 0.239$, $p = 0.010$) and indirectly influenced clinical severity (CGI-S: $\beta = 0.07$, $p = 0.02$). Depression strongly impacted poor sleep quality (PSQI: $\beta = 0.327$, $p < 0.001$), while shorter sleep duration affected both sleep quality ($\beta = -0.461$, $p < 0.001$) and clinical outcomes (CGI-S: $\beta = -0.173$, $p = 0.028$). Pain quality (SF-MPQ) revealed non-significant associations with psychological factors.

Conclusions: anxiety amplifies pain intensity, while depression worsens sleep quality and clinical outcomes; reduced sleep duration worsens outcomes. These results underscore the need for targeted interventions addressing psychological distress and sleep disturbances to improve pain management in BMS patients.

ENHANCING ORAL POTENTIALLY MALIGNANT DISORDERS (OPMDS) DETECTION: THE CONTRIBUTION OF AUTO-FLUORESCENCE

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Aim: this study aimed to evaluate the influence of Auto-Fluorescence (AF) in the decision-making protocol for the detection of Oral Potentially Malignant Disorders (OPMDs).

Methods: 55 patients (mean age: 55 years) with at least one lesion of oral cavity (for a total of 69 lesions) were consecutively enrolled. Patients first received an Oral Examination (OE) and secondly an examination with VELscope System Vx (LED Medical Diagnostics Inc., Barnaby, Canada) by an expert clinician. Later, a biopsy was performed for a definitive histopathological diagnosis. According to the relative supposed risk of malignancy, two groups after each evaluation were formed: Risk of Malignancy (RM) or Not Risk of Malignancy (NRM).

Results: the most common site was buccal mucosa (49%). After OE, only 27 lesions were suspected as RM. An additional of 12 lesions not suspected at OE was discovered with VELscope, as they showed loss or alteration of AF. All suspected carcinoma (n = 9) by OE alone were confirmed; 1 lesion not suspected by OE alone was however suspected after using VELscope, and it showed carcinoma in situ. The combination of OE and VELscope showed an increase in sensitivity (84.1%) and negative predictive value (75.9%) and a reduction in specificity (81.5%) and positive predictive value (88.1%) if compared with OE alone.

Conclusions: AF can be considered a useful additional support for expert clinicians in the detection of OPMDs by increasing or confirming the number of suspected candidate lesions to be underwent to biopsy, enhancing early identification and so improving patient prognosis.

CLINICAL EVALUATION AND CHARACTERIZATION OF NORMAL ORAL TISSUES WITH A NEW ADVANCED VIDEODERMOSCOPY METHOD: A CROSS-SECTIONAL PILOT STUDY ON DENTAL STUDENTS

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Aim: to describe the key dermato-mucosal structures of the healthy perioral tissues and assess their degree of visibility, using an innovative advanced dermatoscopic technique.

Methods: this pilot cross-sectional study was conducted on dental Students of A. Gemelli University Polyclinic Foundation. Three anatomical regions were examined: the Mucocutaneous Junction (MCJ); the Labial Mucosa (LM) and the Anterior Tongue Mucosa (ATM) of dorsal surface. Both non-polarized and polarized illumination at 30x and 150x magnification levels were used. The analysis comprised descriptive morphological characterization and a qualitative visibility assessment expressed in scale ranging from 0 to 3.

Results: forty Caucasian subjects (65% women, mean age 23.8±2.5 years) were included, predominantly with Fitzpatrick phototypes II-III and normal skin type (82.5%). Dermatoscopic analysis showed that non-polarized light consistently improved the visualization of surface structures (skin texture, capillary loops, mucosal texture), while polarized light did not offer significant advantages for vascular structures. Differences between statistical tests (Wilcoxon vs Fisher's) suggested variations in frequency distribution. Higher magnification (150x) enhanced the visualization of microstructural details, particularly at the MCJ and ATM.

Conclusions: the application of advanced dermatoscopic imaging enabled a detailed characterization of healthy dermato-mucosal structures. Non-polarized light and higher magnification proved most effective for enhancing the visibility of surface microstructures.

UNUSUAL ORAL PSORIASIS MANIFESTATION: A CASE REPORT

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Aim: psoriasis is a common, immune-mediated, genetic, chronic papulosquamous skin disease occurring worldwide, presenting at any age, manifesting in the skin or joints. It's strange that oral psoriasis seems so rare, other similar disorders, such as lichen planus, are frequently associated with oral manifestations, which are more common in patients with severe forms of psoriasis, such as generalized pustular type.

Methods: the patient came to our attention for a red rhomboid lesion on the tongues' dorsum; he was negative for candida and all his blood tests were normal. We decided to perform an incisional biopsy, so the lesion has been tractioned with a PGA 5\0 suture, after which a diamond flap was drawn by a 15 BP, the incision deepened, and the sample sent to the laboratory.

Results: the laboratory in accordance with the presence of skin manifestations, certified the absence of fungal spores and the confirmation of oral psoriatic disease. Parakeratotic hyperkeratosis, acanthosis and accentuation of papillomatosis, associated with the presence of intracorneal microabscesses and figures of lymphocytic and neutrophilic granulocytic exocytosis, in the absence of epithelial dysplasia, are pathognomonics aspect that should be taken in consideration for a correct diagnosis.

Conclusions: the diagnosis should be based on good clinical and histological evidence, and the clinical course of the oral lesions should be parallel to the skin disease.

TREATMENT WITH CAPRYLIC ACID IN ORAL CANDIDIASIS

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Aim: the treatment of oral candidiasis resistant to conventional antifungal agents (such as fluconazole and nystatin) in an immunocompromised patient with prolonged exposure to antifungals.
Caprylic acid has been proposed as a potential natural alternative due to its antifungal properties; however, clinical evidence supporting its efficacy remains limited. Caprylic acid is a medium-chain fatty acid (C8) naturally found in coconut oil and palm oil. It is known for its antimicrobial and antifungal properties.
Methods: Recommended Dosage: Caprylic Acid 600 mg – Softgel Capsules (Oral Supplementation)
Administration: Capsules should be taken before or during meals with a glass of water.
Phase 1 – Initial Phase (Weeks 1 and 2):
1 capsule, twice daily (morning and evening)
Phase 2 – Intensive Phase (Weeks 3 and 4):
1 capsule, three times daily (morning, midday, and evening)
Phase 3 – Maintenance Phase (Week 5):
1 capsule once daily, preferably in the morning.
Results: progressive clinical improvement was observed in the patient diagnosed with candidiasis, following the initiation of caprylic acid supplementation.
Conclusions: caprylic acid shows promising experimental results, but it has not yet been clinically validated as a treatment for resistant oral candidiasis. It may be considered as a supportive therapy, but it does not replace medical antifungal treatment in severe or refractory cases.

ORAL HEALTH-RELATED QUALITY OF LIFE AND ORAL LESIONS IN ADULT PSORIATIC PATIENTS: A RETROSPECTIVE CHART REVIEW

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Aim: psoriasis, a chronic inflammatory skin disease, affects quality of life. Oral psoriasis is an unproved associated manifestation, despite reported oral lesions. This study aimed to assess the psoriasis-specific/non-specific oral lesions, and the associations between self-reported Oral Health-Related Quality of Life (OHRQoL) with Oral Health Impact Profile-14 (OHIP-14), Dermatology Life Quality Index (DLQI) and demographic/disease variables.
Methods: medical/dental records of untreated psoriatic adults (≥15 teeth, non-smokers, with no oral infections) were retrospectively reviewed at the dermatologic unit of A.O.U. San Giovanni di Dio e Ruggi d'Aragona of Salerno from June 2022-May 2023. The study was approved by the local Ethical Committee (No. 51/2022) under the Declaration of Helsinki.
Results: 90 charts were included. No oral lesions were found. OHRQoL was excellent/good in 94% of cases. While DLQI was significantly positively associated with Body Surface Area (BSA) and Psoriasis Area and Severity Index (PASI), OHIP-14 with hypertension, Immune-Mediated Inflammatory Diseases (IMID), and age. BSA and PASI were significantly higher in DLQI >10, and significantly differed among OHRQoL ranks, comorbidities, and mucosal involvement. Patients with excellent OHRQoL were not IMIDs (93%), non-diabetic (90%), non-cardiovascular diseases (87%), and non-hypertensive (75%).
Conclusions: further studies should assess long-term psoriasis and treatment effects, and pathogenesis of the psoriasis-oral lesions.

THE ROLE OF THE DENTAL HYGIENIST IN THE CLINICAL FOLLOW-UP OF MOLECULAR BIOLOGY OF HUMAN PAPILLOMAVIRUS IN PATIENTS WITH SINGLE OR MULTIPLE ORAL HPV LESIONS

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Aim: Human Papillomaviruses (HPVs) are DNA viruses responsible for various diseases, including benign exophytic oral lesions and associated cancers. In this study the clinical, histological, and genetic features of manifestations were analyzed in patients diagnosed with single/multiple oral HPV lesions, treated in an oral pathology clinic.

Methods: the study involved 27 patients (9 males and 18 females, mean age 49 years) with HPV lesions, identified mainly by dental hygienists. Histological and biomolecular (59.2% of the patients) features were evaluated, these last, using noninvasive techniques: brushing, to assess viral DNA and genotyping, keys for prevention strategies.

Results: 30 oral lesions were examined for site, size, shape and color. The tongue was the most common site (37%), followed by: gingiva (30%) and palate (20%). Lesions were predominantly: < 3 mm (63.3%), sessile base (80%), cauliflower shape (56.6%) and pink color (53.3%). Analysis showed an association between size, site and recurrence with the presence or absence of the viral genome in oral tissues. HPV DNA by in situ hybridization was found in less than half of the patients observed, with HPV 6 being prevalent and two cases of HPV 16.

Conclusions: clinical features are partially in contrast to previous scientific studies. Patients with lesions smaller than 3 mm did not show viral DNA in the biopsy tissue analyzed by in situ hybridization, nor positivity in the biomolecular test. Very small lesions are less likely to become cancerous through early diagnosis, in which the dental hygienist plays a key role.

ORAL CANDIDIASIS IN THE DIABETIC PATIENT: EPIDEMIOLOGICAL STUDY AND MODERN PREVENTIVE AND THERAPEUTIC STRATEGIES

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Aim: oral candidiasis, caused by asporigenic yeasts (Candida spp.), presents various clinical forms. Diabetes mellitus, a chronic metabolic disorder with elevated blood glucose levels, can affect oral health.

Objectives: (1) an epidemiological survey in an oral pathology clinic to determine the percentage of diabetic patients and the prevalence of oral candidiasis compared to other oral conditions; (2) analysis of cases with decompensated type 1 diabetes, recurring oral candidiasis, its link to blood glucose levels, biomolecular evaluation of Candida spp.

Methods: 697 medical records were reviewed. Three patients (two men, both aged 55, and one woman aged 42) were studied, recording glycemic curve values during oral candidiasis relapses. Two were treated with PDT using different protocols: curcumin+H_2O_2 activated with 460 nm LED and methylene blue 1% activated with 660 nm diode laser.

Results: prevalence of 5% of diabetic subjects was found, although oral candidiasis (especially *C. albicans* and *C. glabrata*) was not the most frequently associated oral disease with this systemic condition. Glycemic values were irregular, with peaks of 250 mg/dl in onset periods and a range of about 200 mg/dl in the presence of candidiasis. Patients treated with PDT improved oral conditions.

Conclusions: oral candidiasis is common in decompensated type 1 diabetic patients, strongly associated with glycemic trends. PDT appears effective for this refractory infection. Understanding the interaction between diabetes and oral candidiasis is crucial for better therapeutic strategies.

A NOVEL DIAGNOSTIC SURVEY FOR REAL HYPOSALIVATION: A COHORT PROSPECTIVE CLINICAL STUDY

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Aim: develop a novel diagnostic questionnaire, the Real Hyposalivation Survey (RHS), aimed at screening xerostomia patients with real hyposalivation.

Methods: for this study, 40 adult patients experiencing a subjective sensation of dry mouth were included. To develop the RHS, a systematic review of the literature was first conducted through the electronic databases of PubMed, Web of Science, and Scopus to identify appropriate questions for screening real hyposalivation patients (4 major criteria and 6 minor criteria). The RHS was then administered to patients, followed by two distinct medical examinations (T0 and T1), during which basal and stimulated salivary flows were measured using the spitting method. Statistical analysis was conducted with R software, and linear regressions were carried out to assess whether the results of the sialometry regressed significantly on the RHS scores ($P < 0.05$).

Results: all tested parameters significantly influenced RHS score: T0 ($P = 0.000406$, $P = 0.000801$), T1 ($P = 0.000616$, $P < 0.0001$), and mean basal and stimulated salivary flow ($P = 0.000496$, $P < 0.0001$). Furthermore, mean basal and stimulated salivary flow values were significant effects on the number of major criteria of RHS ($P = 0.00143$, $P < 0.0001$).

Conclusions: the findings of this study suggest the potential utility of RHS as a screening tool for xerostomic patients with real hyposalivation. Further multicenter case-control studies are needed to confirm these results on a larger patient cohort across different populations, and to evaluate the sensitivity and specificity of the survey in a population of non-xerostomic patients.

CHANGES IN ORAL HEALTH OF IRRADIATED HEAD AND NECK CANCER PATIENTS: A PROSPECTIVE COHORT STUDY

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Aim: the primary objective of this prospective cohort study was to evaluate carious lesion development and changes in periodontal status in a cohort of irradiated Head and Neck Cancer (HNC) patients. The secondary objective was to establish the need for extraction after RadioTherapy (RT).

Methods: after the approval of the local Ethical Committee (Ref. 22858/18) and ClinicalTrials.gov (ID: NCT04009161) registration. A pre-RT Oral Health (OH) diagnosis and the removal of oral foci were performed. Subsequently, a 6-months follow-up program took place. During this follow-up, dental procedures were performed as needed. DMFt index and periodontal status (PPD, FMPS, FMBS) were recorded at each visit. Poor OH was defined as Stage III or IV periodontitis and/or DMFt >13. The minimum follow-up time was two years. Statistical analyses were conducted using ANOVA for parametric variables and Fisher's exact test for discontinuous variables.

Results: a total of 86 patients were included in the study, with an average follow-up of 4.1 years (SD 1.82). The mean age was 57.61 years (SD 11.35). A total of 11 patients (12.8%) experienced a deterioration in their OH ($p = 0,06$), and 44 patients exhibited tooth loss.

On average, patients lost 2.4 teeth (SD 4.5). The primary reason for extractions was caries (122 teeth), followed by periodontitis (80 teeth).

Conclusions: the study highlights the worsening of oral health status in HNC patients after RT and the necessity of regular dental care with a multidisciplinary approach.

DENTAL ALTERATIONS IN HYPER-IGE SYNDROME: IMPLICATIONS FOR TOOTH ERUPTION

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Aim: Hyper-IgE Syndrome (HIES) is a rare immunodeficiency characterised by elevated IgE levels, recurrent infections, and skeletal and connective tissue abnormalities. Among its oral manifestations, delayed tooth eruption is one of the most significant, potentially leading to orthodontic and functional complications. This study analyses dental alterations in HIES patients, focusing on tooth eruption issues and odontological management strategies.
Methods: six HIES patients (3 males, 3 females) were followed for 15 years, through dental clinical, radiographic and photographic examinations, at the Policlinico Ca' Granda in Milan, in collaboration with the Royal Free Hospital in London.
Results: all patients showed a discrepancy between dental and chronological age, with retained primary teeth and delayed eruption of permanent teeth. In 5 out of 6 cases, multiple extractions of primary teeth were necessary to allow the proper eruption of their permanent counterparts. Radiographic analysis confirmed that permanent tooth development was consistent with chronological age, suggesting that the issue was not delayed eruption but rather the failure of primary tooth exfoliation due to a lack of physiological root resorption.
Conclusions: tooth eruption anomalies are a hallmark of HIES. Timely extraction of primary teeth is crucial to prevent complex orthodontic problems and reduce the risk of oral infections. The dentist in multidisciplinary management is essential to ensure proper dental development and improve patients' quality of life.

ASSESSMENT OF ULTRASONOGRAPHIC VASCULAR PARAMETERS IN TONGUE ORAL SQUAMOUS CELL CARCINOMA

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Aim: the present study aimed at characterizing the vascularization patterns observed in patients affected by tongue Oral Squamous Cell Carcinoma (OSCC).
Methods: consecutive patients with clinical diagnosis of tongue OSCC were enrolled. All patients underwent Ultra-High Frequency UltraSonond (UHFUS) assessment of the lesion.
Tumor growth was dichotomously classified as exophytic or infiltrating Color-Doppler with Pulsed Wave was employed to analyze vascularity of the lesions. The following features were recorded: Peak Systolic Velocity (PSV), Time Averaged Peak Velocity (TAPV), Resistive Index (RI) and Pulsatility Index (PI). Each Colour Doppler registration involved 15 seconds cine loops and captured at least five cardiac cycles.
Results: forty-five patients in total were enrolled. PSV and TAPV were significantly increased in infiltrating tumors compared to exophytic ones, where neoangiogenesis appeared more marked.
RI and PI, conversely, were significantly reduced due to disorganized and low-resistance vascularity in more aggressive infiltrating lesions.
Conclusions: changes in Doppler parameters could provide additional information on OSCC characteristics, due to the higher vascularity and altered hemodynamics detected in such lesions.
However, these findings should be interpreted in conjunction with other clinical and imaging features.

CHARACTERZIATION OF ORAL LEUCOPLAKIA WITH ULTRA-HIGH FREQUENCY ULTRASOUND

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Aim: this study aimed to evaluate the ultrasonographic characteristics of oral leukoplakia and identify imaging patterns associated with this condition.

Methods: consecutive patients diagnosed with leukoplakia underwent intraoral Ultra-High Frequency Ultrasonography (UHFUS) using 70 MHz ultrasound equipment. Lesion thickness and mean echogenicity were assessed. Color Doppler imaging, with a flow velocity setting of 1.98 cm/s, was used to detect slow-flow vessels. Vascular parameters included Peak Systolic Velocity (PSV) and Resistive Index (RI).

Results: thirty patients (17 males, 13 females; mean age 61.6±17.3 years) were included. On UHFUS, leucoplakia appeared as a hypoechoic homogeneous area with well-defined margins and was clearly demarked from the submucosa. Overall, leukoplasic lesions showed increased epithelial thickness and decreased echogenicity compared to the surrounding tissues. Mean lesion thickness was 1.7± 0.28 mm, with a mean echogenicity of 96.7.

Enhanced vascularity was observed, with a mean PSV of 7.86 cm/sec and an RI of 1.01, suggesting increased microvessel density.

Conclusions: UHFUS provides valuable imaging data for the evaluation of leukoplakia. Further studies on larger cohorts are needed to establish correlations with clinical and histological findings and may help discriminate such pathologic entities from other oral diseases.

PODOPLANIN OVEREXPRESSION AS PREDICTIVE MARKER OF MALIGNANT TRANSFORMATION IN ORAL POTENTIALLY MALIGNANT DISORDERS

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Aim: immunohistochemical analysis is a simple and non-expensive procedure used to discriminate lesions of the oral cavity at risk of malignancy. Recent studies highlighted the role of podoplanin as a promising biomarker to early detect Oral Potentially Malignant Disorders (OPMDs) at risk of developing Oral Squamous Cell Carcinoma (OSCC). In the present longitudinal study we evaluated whether a high Podoplanin expression is associated with malignant transformation in OPMDs.

Methods: this prospective study included 82 OPMDs diagnosed from 2012 to 2024 without high-grade dysplasia and a minimum follow-up of 12 months. Immunohistochemical expression of podoplanin, p53 and Ki67 were analyzed in all samples. Lesions with podoplanin expression in the suprabasal layer of the epithelium (pattern 2 in Kawaguchi classification) were considered as positive, whereas the cut off for both p53 and Ki67 overexpression was set to 20% of positive cells.

Results: the mean follow-up period of the population studied was 50.2±32.5 months; range 12-138 months. 11 out of 82 OPMDs evolved in OSCC. Ki67, p53 and podoplanin resulted overexpressed in 44, 18 and 11 samples. Multivariable analysis revealed that Podoplanin high expression is the only variable statistically related to malignant transformation (*Chi 12.2; p <.05*): 5 out 11 lesions with overexpressed podoplanin evolved into OSCC respect to 6 out of 71 OPMDs with normal expression of podoplanin.

Conclusions: these findings suggest that podoplanin is a promising biomarker for identifying OPMD cases at higher risk of malignant transformation.

RISK PROFILE OF MEDICATION-RELATED OSTEONECROSIS OF THE JAW IN ONCOLOGICAL AND OSTEOMETABOLIC PATIENTS

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Aim: the study aims to analyze the risk profile of Medication-Related Osteonecrosis of the Jaw (MRONJ) in oncological and osteometabolic diseased patients evaluating the role of drug-related, local and/or systemic risk factors.

Methods: a retrospective study was conducted on patients at risk or with MRONJ who were referred to our department. The demographic, drug-related, local and systemic risk factors were collected. The included patients were further categorized into two groups: 1) "with MRONJ" and 2) "without MRONJ". A statistical analysis was performed to assess the different effects of all the risk factors considered between both groups. A statistically significant difference was considered when p-value <0.05.

Results: a total of 100 patients (83 females and 17 males) were included in the study and distributed into 59 patients with MRONJ and 41 patients without MRONJ. The statistical analysis revealed a significantly higher risk in females (p = 0.034), oncological patients (p = 0.0001), patients in corticosteroid therapy (p = 0.018), with a history of chemotherapy (p = 0.001), with presence of implants (p = 0.032), and subjected to antiresorptive medications via intravenous route (p = 0.0001).

Conclusions: the aetiopathogenesis of MRONJ is unclear. Prevention is still the most effective strategy for the management of MRONJ. It is believed that analysing the risk factors and profile of MRONJ patients would be helpful in understanding the nature of the disease and useful in achieving an appropriate strategy and decision-making for the prevention and management of MRONJ.

OZONE THERAPY COMBINED WITH PHOTOBIOMODULATION AS A NEW MEDICAL APPROACH FOR MRONJ: A CASE REPORT

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Aim: Medication-Related Osteonecrosis of the Jaw (MRONJ) remains a challenging oral condition. Its management has several treatment options ranging from minimally invasive approaches with adjuvants to invasive surgery. This study aims to demonstrate MRONJ patient managed by ozone therapy and Photobiomodulation (PBM), showing possible non-surgical alternative.

Methods: a 49-year-old female referred to our department with stage 2B-MRONJ on anterior maxilla. After surgical intervention with incomplete healing outcome, irrigations with ozonated water were performed 1 time weekly for 7 weeks. 2 PBM cycles of 8 sessions were performed, 1 session weekly, using multidiodic laser emitting simultaneously 650 nm, 810 nm, and 910 nm wavelengths. The parameters were: power = 0.6 W, time = 15 min, frequency = 30 kHz, and total energy = 577.4 J.

Results: bone sequestrum was observed after 4 months of ozone therapy and was surgically sequestrated. Complete healing was observed in 1-month follow-up.

Conclusions: antimicrobial and regenerative properties were reported with ozone therapy, through promoting angiogenesis, fibroblast proliferation and tissue oxygenation. PBM has anti-inflammatory, analgesic and bio-modulatory effects through the induction of several physiological pathways that lead to repair damages caused by injuries. Ozone therapy and PBM are proposed as adjuvant treatments for MRONJ. Their combination may represent a valuable option for patients unsuitable for surgery. Further studies are needed to confirm the efficacy of this approach and to define standardized treatment protocol.

PRIMARY INTRAOSSEOUS SQUAMOUS CELL CARCINOMA: A RARE MALIGNANCY OF THE JAWS

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Aim: Primary Intraosseous Squamous Cell Carcinoma (PIOSCC) is a rare malignancy arising from the odontogenic epithelium with no original connection to the oral mucosa. The study reports a metastatic PIOSCC of the posterior mandible.

Methods: a HIV-positive, 60-year-old man was referred to the Department of Maxillofacial Surgery, Marche Polytechnic University, Ancona, Italy, complaining a tenderness swelling of the right mandible progressively worsening in the last six months. The oral examination revealed a diffuse expansion of the posterior mandible, with no mucosa ulceration, and palpable submandibular and cervical lymphadenopathies. Preoperative computed tomography and positron emission tomography were performed. A widespread erosion of the ascending ramus, mandibular body, angle and condyle, a masseter thickening and a pathological cervical lymph node aspect were detected.

Results: a segmental mandibulectomy with ipsilateral neck dissection and osteocutaneous flap reconstruction, and postoperative radiation therapy were performed. Histopathological findings resulted in a poorly differentiated squamous cell carcinoma with multiple lymph node metastases. Bone and muscle infiltration with mucosa involvement and lymphovascular invasion were detected. A definitive diagnosis of PIOSCC was made. Patient died after 4 years from the initial surgical treatment.

Conclusions: PIOSCC is a very rare tumor with aggressive biological behaviour and poor prognosis.
The lack of specific clinicopathological features hinders its early diagnosis.
Specific staging and therapeutic protocols should be considered for PIOSCC to improve the prognosis.

ROMOSOZUMAB-INDUCED ORAL LICHENOID LESIONS IN AN OSTEOPOROSIS PATIENT: A CASE REPORT

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Aim: Oral Lichenoid Lesions (OLLs) are uncommon adverse reactions associated with various medications. Romosozumab, a humanized monoclonal antibody targeting sclerostin, has emerged as an effective treatment for osteoporosis, but its safety profile continues to be explored. This case report aims to describe a rare instance of OLLs induced by romosozumab and highlight the importance of recognizing this potential adverse effect.

Methods: a postmenopausal patient undergoing romosozumab treatment for osteoporosis developed symptomatic oral mucosal lesions four months after the first injection. Clinical examination revealed white reticular striae, erythematous patches, and ulcerations. An incisional biopsy was performed, showing a histological pattern consistent with OLLs. The temporal association between the initiation of romosozumab therapy and lesion onset supports a causal relationship. Blood tests showed the absence of serological markers for bullous diseases.

Results: after diagnosis, a topical application of galenic preparation of clobetasol, nystatin and hyaluronic acid was prescribed with a consequent improvement of symptoms, although they didn't regress completely. Symptom resolution was observed following drug discontinuation, suggesting a causal relationship. No other potential etiological factors were identified.

Conclusions: this case report highlights OLLs as a potential adverse reaction to romosozumab. Clinicians should be aware of this possible association and conduct thorough oral examinations in patients reporting mucosal discomfort during treatment.

ORAL EPITHELIAL DYSPLASIA (OED) WITH DIFFERENT LICHENOID FEATURES (LF) IN A YOUNG-ADULT PATIENT

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Aim: the aim of our study is to present a case of Oral Epithelial Dysplasia (OED) with Lichenoid Features (LF) in a young-adult patient.

Methods: a 26-year-old male, with an unremarkable past medical history, self-referred to our oral medicine unit for an asymptomatic, well-demarcated, round-shaped, non-homogeneous leukoplakia with verrucous/nodular texture and measuring approximately 0.7 x 0.5 cm the day before. Given the clinical features and the high-risk location, a wide local excision was performed and a 5.0 vicryl suture was applied. At 4-week follow-up the wound completely healed up with no evidence of remaining disease.

Results: histological examination revealed thinned mucosa with parakeratosis, mild hypergranulosis and papillomatous features in a proliferative attitude associated with Moderate Epithelial Dsysplasia (OED). Subepithelial chorion showed LF such as lymphocytic immune response, basal cell degeneration and presence of Civatte bodies.

Conclusions: OED often exhibits a lymphocytic/lichenoid immune response imparting histological resemblance to lichenoid inflammatory conditions, representing a critical diagnostic pitfall that may lead to incorrect diagnoses, prognoses and treatment plans. An accurate communication between oral medicine providers and oral pathologists is critical and needed for a precise diagnosis, considering that the prognosis and treatment of OED and lichenoid inflammatory processes are considerably different.

CLINICAL CASE OF MRONJ FOLLOWING A SINGLE ONE-MONTH ORAL ADMINISTRATION OF ALENDRONATE ASSOCIATED WITH PROLONGED CORTICOSTEROID THERAPY

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Aim: clinical case of Medication-Related Osteonecrosis of the Jaws (MRONJ) following four oral administrations of Alendronate (LD-BMA) over one month, prescribed for an osteometabolic condition, in a patient undergoing prolonged corticosteroid therapy (Prednisone and Clobetasol) for Darier disease.

Methods: radiolucent lesions of unknown origin in left mandible were incidentally detected on panoramic radiography (OPT) in an asymptomatic patient not reporting history of antiresorptive therapy. The patient underwent incisional bone biopsy, which revealed morphological features consistent with osteonecrosis. Following surgery, the patient developed soft tissue exposure at the surgical site, a suppurative lingual fistula in the edentulous symphyseal region, and associated pain. A more detailed medical history revealed that the patient had taken four monthly doses of 70 mg Alendronate in 2020.

Results: despite combined antibiotic therapy (Metronidazole + Amoxicillin/Clavulanic) and 10 sessions of topical Ozosan application, no regression was observed. The patient is currently undergoing Hyperbaric Oxygen therapy (HBO). While she reports significant pain reduction, clinical examination still shows a non-suppurative fistula with underlying bone exposure.

Conclusions: four oral administrations of Alendronate over one month, combined with prolonged corticosteroid therapy, led to initially asymptomatic MRONJ. Conservative treatment with HBO appears to reduce symptoms significantly, although further radiographic evaluation is needed to assess clinical and radiological progress.

MRONJ RELATED TO RETRACTOR THREAD USE IN CONSERVATIVE TREATMENT: A CASE REPORT

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Aim: to report a MRONJ related to Black Class V in a 56-year-old woman. MRONJ is defined as a "drug-related adverse reaction, characterized by the progressive destruction and necrosis of the mandibular and/or maxillary bone of subjects exposed to treatment with drugs for which an increased risk of disease has been ascertained in the absence of previous radiation treatment". In conservative procedure Black Class V, the use of retractor thread could induce vasoconstriction in gingival tissues and then necrosis.

Methods: a 56-year-old woman comes to our attention with oral pain in the left hemimandibular region. Intraoral examination revealed an ulcerated lesion and bone exposure (about 1 cm) in attached gingiva, in correspondence with element 3.6; the surrounding mucosa appeared erythematous and edematous. She reported a postmenopausal osteopenia treated with Alendronate orally and a conservative treatment, on the element 3.6, close to the gum (Black Class V). The use of retractor thread and slight trauma linked to the insertion of this one was hypothesized as etiopathological factor.

Results: the diagnosis, compatible with the clinical and pharmacological history, was MRONJ. The patient underwent polyantibiotic therapy, irrigation of hydrogen peroxide, application of chlorhexidine gel and monitored for 4 weeks. After 3 weeks MRONJ was resolved.

Conclusions: this case is extremely significant; clinicians should pay particular attention to conservative dental procedures in patient taking anti-bone resorption drugs and the occurrence of MRONJ in these treatments.

MYXOFIBROSARCOMA OF THE MAXILLARY GINGIVA MIMICKING A PYOGENIC GRANULOMA: A RARE CASE REPORT

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Aim: to report a rare case of myxofibrosarcoma of the maxillary gingiva mimicking a pyogenic granuloma in a 91-year-old woman. Myxofibrosarcoma is a distinct histotype of adult soft tissue sarcoma, usually reported in the lower extremities and rarely in the abdominal and head-neck areas. These tumors affect patients between 60 and 80 years old, with a slight male predominance. Histological features include incomplete fibrous septa, curvilinear vessels with myxoid stroma and high degree of pleomorphism.

Methods: a 91-year-old Caucasian female patient with a no relevant medical history came to our attention to evaluate an intraoral exophytic neoformation, covered by a yellowish pseudomembrane and with no pain, sensory changes or bleeding. Extraorally no asymmetry, cervical lymphadenopathy or trismus were noticed. All the dental elements of the upper left hemimaxillary were present, among these, 2.5 and 2.6 were prosthetically rehabilitated, incorporated by the neoformation but not presented mobility.

Results: diagnostic exams and biopsy identified a low-grade myxofibrosarcoma with an extremely rapid growth rate and early metastasis to the pulmonary system. The head-neck CT scan of the facial mass and neck highlighted a cercinate formation localized in the left upper alveolar arch, colliquation and infiltration of the buccinator muscle, reaching the masseter muscle. For patient's clinical conditions and her age, systemic treatment was not considered, but only a follow-up.

Conclusions: careful investigation of all the neoformations is decisive and helpful for diagnosis.

MIRNA146A, MIRNA155 PROFILE AND DYSBIOSIS ANALYSIS IN BHT PATIENTS: A PILOT STUDY

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Aim: this work analyzes oral biomarkers such as miRNA146a, miRNA155, VSC (dimethyle sulfide, methyl mercaptan, hydrogen sulfide) and periodontal bacteria (*Fusobacterium spp*, *P. gingivalis*, *T. forshytia*) in 10 patients with Black Hairy Tongue (BHT), in order to identify etiological factors, related to the pathology, to oral and systemic comorbidity, useful to therapy and follow-up.

Methods: each patient of the BHT cohort undergoes 4 samples: one on healthy tongue, one on black colored tongue to evaluate and compare periodontal bacteria concentration, one to evaluate VSC, one to analyse pri-miRNA146a and pri-miRNA155.

All these data were analyzed in the molecular biotechnology laboratory in Cagliari.

Results: Pri-miRNA146a resulted upregulated in the majority of the cohort, instead pri-miRNA155 resulted upregulated in only one patient. Periodontal bacteria were observed in all the cohorts with different concentrations, only *P. gingivalis* was localized mainly on healty tongue. Fusobacterium was linked to VSC production and VSC resulted in different levels, among these, dimethyl sulfide was the prevalent compound.

Conclusions: Pri-miRNA146a and pri-miRNA155 upregolation is in line with the oral and systemic condition. Hypotesis on a connection between Fusobacterium, miRNA146a and dimetil sulfide could explain BHT clinical manifestation, onset and progression. This work could be an useful model to compare these oral biomarkers to study other oral pathologies or systemic pathologies with oral implications.

SYNCHROTRON PHASE CONTRAST MICROTOMOGRAPHY AND ARTIFICIAL INTELLIGENCE ALGORITHM: AN IMAGING METHOD FOR THE DEEP LEARNING STUDY OF THE ORAL CANCER MICROENVIRONMENT

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Aim: the 3D organization of tumor front of Oral Tongue Squamous Cell Carcinoma (OTSCC) was analysed by Synchrotron Phase Contrast Microtomography (µ-CT); then a Convolutional Neural Network (CNN) was developed to automate the quantification processes of the stroma morphological parameters.

Methods: thirty-five OTSCCs were selected from the archive of Marche Polytechnic University, Ancona, Italy, and stratified according to the Pattern on Invasion (POI) (Brandwein-Gensler et al. 2005). From each case, a cylindrical section (<2 mm/side) was collected, selecting the invasive area with the highest percentage of desmoplastic stroma. The high resolution µ-CT was performed at the SYRMEP beamline, ELETTRA Synchrotron Facility, Italy. The tumor thickness (Th), the Anisotropy Degree (DA) and the Fractal Dimension (FD) of peritumoral stroma were evaluated by the DragonFly 2022.1 Software and the "Frangi 3D" filter. Then, the POI-NET CNN was developed using the "Adadelta" optimization algorithm.

Results: *Th* ($P < 0.0001$) and DA ($P < 0.05$) were significantly lower in POI-4 (*Th:* 18.8±0.6; DA: 0.55±0.192) compared to POI-3 (*Th:* 56.6±4.5; DA: 0.93±0.017) and POI-2 (*Th:* 40.8±18.6; DA: 0.93±0.002) tumors. A trend of FD reduction was showed between POI4 (2.4±0.1), POI-3 (2.3±0.1) and POI-2 (2.1±0.1) samples. No significant differences of morphological parameters were found between POI-2 and POI-3 groups.

Conclusions: this is the first study that applied the µ-CT and a deep learning algorithm in OTSCC samples. The POI-NET resulted in a high accuracy automated 3D-evaluation of the tumor front of POI-4 OTSCCs. The CCN training on a larger sample size should be performed to increase its accuracy.

DNA METHYLATION ANALYSIS FROM ORAL BRUSHING AS A USEFUL TOOL FOR IMPROVING EARLY DETECTION RATES OF ORAL SQUAMOUS CELL CARCINOMA

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Aim: the present study was conducted to evaluate the potential role of DNA methylation analysis from oral brushing (SG-OCRA) as a tool to assist General Dental Practitioners (GDPs) in identifying suspected malignant lesions.

Methods: oral brushing collection and quantitative DNA methylation analysis have been performed in forty selected oral lesions: 20 OSCC lesions (10 cT1-2 and 10 cT3-4) and 20 Benign Reactive Lesions (BRLs). 98 GDPs were asked to evaluate representative pictures of selected forty oral lesions via an anonymous online questionnaire based on evaluation of clinical images. To evaluate the suspicion of oral cancer, participants had to choose one of the following options for each picture: Yes, Positive uncertainty, negative uncertainty, No.

Results: SG-OCRA from oral brushing showed a diagnostic accuracy of 85% (18/20 OSCCs were detected as positive, and 16/20 samples of BRL lesions were calculated as negative). GDPs showed a diagnostic accuracy of 71.7% (based on two score model of answers: yes+positive uncertainty vs no+negative uncertainty) with 48% of answers that showed uncertainty (the sum of positive and negative uncertain answers). The substitution of uncertain answers from the GPDs with SG-OCRA calculated scores resulted in an improvement of diagnostic accuracy: 82,8%.

Conclusions: data from the present study suggest that the application of a non-invasive procedure may be a useful strategy to improve the rates of early detection of oral cancer.

CHRONIC KIDNEY DISEASE (CKD) AND PERIODONTAL DISEASE: EXPLORING A POTENTIAL BIDIRECTIONAL ASSOCIATION

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Aim: this study aims to assess the possible correlation between CKD and PD and how they can potentially affect each other. The study evaluates the prevalence and severity of PD in a population of CKD patients in detail (KDIGO International guidelines).

Methods: detailed medical histories and laboratory parameters were collected such as complete blood count, serum creatinine, serum electrolytes, serum albumin, serum glucose, uric acid, parathyroid hormone and lipid profile. The patients filled out questionnaires regarding home oral hygiene habits, frequency of dental visits, smoking and alcohol intake habits and whether they had halitosis, tooth mobility or dysgeusia. All the patients underwent a dental examination including DMFT, plaque index, bleeding on probing, presence of periodontal pockets and gingival recessions and clinical attachment loss, full mouth plaque score and full mouth bleeding score.

Results: the sample consisted of 75 CKD patients (40 males and 35 females) in conservative therapy. The authors observed a significant direct correlation between age and PD ($p = 0.016$). Moreover, an association between PD and estimated-glomerular filtration e-GFR ($p = 0.038$) emerged and the grade of periodontal disease ($p = 0.029$). Patients with a lower e-GFR (<44 ml/min- stage 3b of CKD) showed 3.3 times the increased risk of developing PD.

Conclusions: patients with Chronic Kidney Disease (CKD) showed significantly compromised oral and periodontal health. This study highlights a correlation between renal dysfunction and the development of Periodontal Disease (PD).

CD4+ T CELL IMMUNOPHENOTYPING PREDICTS RELAPSE IN PEMPHIGUS VULGARIS PATIENTS TREATED WITH RITUXIMAB: A RETROSPECTIVE STUDY

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Aim: this study compared CD4+T cell count and CD4+/CD20+ ratio between Rituximab (RTX) treated patients who achieved Long-Term Remission (LTR) and those who Relapsed (R), evaluating CD4+T cells' role in post-RTX long-term therapeutic response.

Methods: a retrospective study was conducted evaluating the clinical course of 27 PV patients treated with RTX as adjuvant therapy after a minimum 24-month follow-up from the last infusion of the treatment cycle. CD4+ and CD20+ counts and CD4+/CD20+ ratio were longitudinally collected at baseline, at 3-month intervals until B cell repopulation, at 6-, 12- and 24-month intervals after repopulation and at the end of follow-up or at relapse.

Results: after RTX 16 (59%) patients relapsed while 11 (41%) achieved long-term remission. At B cell repopulation significantly higher CD4+ count (P = 0.02*) and CD4+/CD20+ ratio (P = 0,004**) were found in LTR group compared to R group. Moreover, a statistically significant difference (P = 0.002**) in post-repopulation CD4+ T cells' course was found between groups: in LTR group a mean decrease of 233,5 cells/μL in CD4+ value was found during follow-up while in R group patients reported a mean increase of 539,4 cells/μL, reaching the maximum CD4+ value at relapse.

Conclusions: lower CD4+ value at repopulation and increasing post-repopulation CD4+ count were predictive of disease relapse suggesting a time-dependent role of CD4+T cells in post-RTX PV reactivation.

MANAGEMENT IN DENTISTRY OF PATIENTS WITH VON WILLEBRAND'S DISEASE: A CASE REPORT

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Aim: Von Willebrand Disease (VWD) is the most common inherited bleeding disorder, characterized by a deficiency of Von Willebrand Factor (VWF). The management of these patients involves a personalized multidisciplinary approach based on communication and collaboration between the dentist, hematologist, and patient to assess the individual bleeding risk, the severity of the disease, and the type of treatment needed to minimize bleeding risk and promote prognosis. Treatment considers modifications of surgical techniques, the use of antifibrinolytic drugs and replacement therapy with VWF concentrates. This case report aims to provide our experience in managing tooth extraction in a patient with VWD.

Methods: a 38-year-old male with type 1 VWD presented to our department for the extraction of tooth 3.8 (lower right third molar), which was impacted. After administration of a VWF/FVIII concentrate (Fandhi, Grifols Italia S.p.A.), the surgical procedure was performed and managed on an outpatient basis using appropriate intraoperative and postoperative therapeutic strategies.

Results: the patient did not report any bleeding symptoms in the days following the surgical procedure.

Conclusions: the management of patients with congenital bleeding disorders is a topic still not widely discussed in the literature; there are currently no standard protocols to refer to, although close collaboration between the hematologist and the dentist ensures adequate assessment of the clinical case and consideration of all factors that may influence the success of the surgical intervention.

LIPOMA OF CHEEK: A CASE REPORT

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Aim: lipoma is the most common benign tumor of mesenchymal origin in soft tissues, with a prevalence rate of 2.1 per 1000 people. Only 13% of lipoma cases are found in the head and neck region. The most common sites for oral lipomas are the cheek and salivary glands, followed by the tongue, floor of the mouth, buccal sulcus, vestibule, lip, palate, and gingiva. In the neck, lipomas usually involve the posterior triangle; those in the anterior neck are a rare entity. Clinically, lipomas present as a mass with a smooth surface and soft consistency. Symptoms vary depending on the location, growth rate, and size of the lesion. The elective treatment for head and neck lipomas is surgical excision, integrated with a precise follow-up program. This case report aims to provide our experience in managing a case of cheek lipoma.

Methods: a 65-year-old woman in good health presented to our department with an asymptomatic swelling in the cheek, approximately 2 x 1 cm in size. The patient was treated with complete surgical excision of the lesion using a blade.

Results: the histological report confirmed the diagnosis of lipoma. No post-operative problems were observed in the subsequent 3 months of follow-up.

Conclusions: cheek lipomas are relatively rare but important benign lesions to recognize and treat. Diagnosis is based on clinical examination and instrumental investigations, while treatment is surgical and consists of complete excision of the lesion. The prognosis is excellent, with a low risk of recurrence.

CORRELATION BETWEEN ORAL LICHEN PLANUS AND NON-ORAL CANCERS: A MULTICENTRE CASE-CONTROL OBSERVATIONAL CLINICAL STUDY

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Aim: this case-control multicenter study aimed to investigate the potential association between Oral Lichen Planus (OLP) and extraoral cancers, including solid and hematological tumors.

Secondary objectives included the identification of risk factors for this association, such as clinical OLP variants, lifestyle habits, and comorbidities.

Methods: the study was conducted between January 2023 and June 2024 and included 21 Italian Oral Medicine centers affiliated with the Italian Society of Oral Medicine (SIPMO). In total, 1,650 participants were enrolled, with 550 OLP patients (case group) and 1,100 non-OLP individuals (control group) matched for age and sex.

Results: OLP patients showed a significant higher prevalence of extra-oral cancers (19.8%) compared with controls (12.4%) with a 1.71 OR (1.29-2.25, $p < 0.05$). Erosive OLP, in particular, ($n = 32/88$, 36%, $p < 0.01$) and plaque-like variants ($n = 27/87$, 31%, $p < 0.04$) were associated with an increased risk of extra-oral cancer.

Conclusions: this is the first multicenter study to report a statistically significant association between OLP and the increased risk of extraoral cancer; with OLP patients having a 1.71-fold higher risk. Potential pathogenic mechanisms involve a complex interplay between chronic inflammation, immune dysregulation, and carcinogenesis. Clinically, a thorough oncological anamnesis should always be taken in OLP patients, with particular attention to the early diagnosis of both oral and extra-oral cancers.

FLUORESCENCE GUIDED SURGERY

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Aim: modern surgery has advanced through the integration of imaging technologies that improve precision and efficacy. Techniques such as Magnetic Resonance Imaging (MRI), Computed Tomography (CT), and Positron Emission Tomography (PET) have transformed oncological diagnostics. However, intraoperative surgery still depends on the surgeon's ability to localize pathology with conventional imaging. Ensuring optimal excision margins, free of residual neoplastic tissue, is critical. Despite advancements in preoperative imaging, the rate of positive surgical margins remains unchanged. Standard techniques, such as histopathological analysis via frozen sections, face challenges such as sampling errors and long processing times. Autofluorescence (AF) and Fluorescence-Guided Surgery (FGS) provide potential solutions to these limitations.

Methods: this review analyzed studies from 1999 to 2024 published in PubMed, Scopus, and Web of Science, focusing on intraoperative imaging, AF, and FGS in tumors like Basal Cell Carcinoma (BCC) and Squamous Cell Carcinoma (SCC). The role of intrinsic fluorophores and tissue alterations, such as hyperkeratosis and fibrosis, was evaluated.

Results: AF showed reduced intensity in malignant tissues compared to healthy tissues, with variations linked to histopathological changes like hyperkeratosis and fibrosis. FGS allows real-time visualization of tumor margins, improving resection accuracy. Loss of fluorescence (hypofluorescence) is key for identifying dysplastic or neoplastic tissue.

Conclusions: AF and FGS offer advantages over conventional methods. However, further studies are needed to confirm their accuracy and standardize their use.

Combining these techniques with other imaging modalities and Artificial Intelligence (AI) could enhance surgical outcomes.

SYMPTOMATIC ORAL LICHEN PLANUS TREATED WITH TACROLIMUS 0.1%

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Aim: Oral Lichen Planus is considered a chronic autoimmune inflammatory disease and its presence may be related to increased emotional stress. The clinical relevance of OLP is the possibility of developing a squamous cell carcinoma. The aim of this study is to treat OLP lesions resistant to conventional treatment with corticosteroids, using topical tacrolimus 0.1% in Orafix.

Methods: out of 23 patients with a diagnosis of OLP by the biopsy between 2018 and 2024, 15 were selected based on the symptoms. Every patient with symptomatic OLP underwent treatment with clobetasol oral gel three times a day for 15 days. Among them 6 showed persistent symptoms and underwent treatment with tacrolimus 0.1% in Orafix three times a day for 30 days, every other day for the next 30 days and only the weekend for the next 30 days. A monthly check was carried out, observing the clinical appearance comparing with the initial photos and recording pain symptoms and occurrence of side effects.

Results: the results showed 3 patients with total or nearly total remission of pain symptoms and lesions, 2 patients showed clearer lesions and 1 patient had no change in clinical symptoms or pain. No patient showed any side effects.

Conclusions: based on these results of this preliminary study, it was concluded that tacrolimus 0.1% in Orafix is a safe and effective medication that improves the clinical appearance of the lesion and reduces pain of OLP.

GENETIC ANALYSIS OF ORAL MICROBIOTA CHANGES INDUCED BY THE PROBIOTIC CURASEPT PREVENT AFTER EXTRACTION OF MANDIBULAR THIRD MOLARS (PILOT STUDY)

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Aim: this pilot clinical study aims to evaluate the differences in the oral microbiota in patients undergoing surgical extraction of impacted or semi-impacted lower third molars before and after the administration of probiotics.

Methods: twenty patients (aged 16 to 35) requiring surgical extraction of a lower third molar were enrolled. Following the surgery, all patients underwent antibiotic therapy, chlorhexidine treatment, and probiotic supplementation with Bifidobacterium lactis HN019 and *Kluyveromyces marxianus fragilis* B0399. Oral flora analysis was performed using NGS (Next Generation Sequencing) to sequence part of the bacterial 16S rRNA gene (V3-V4 region) through the collection of 3 oral swabs before the surgery (T0), at 10 days (T1) after antibiotic and chlorhexidine therapy, and at 28 days (T2) after probiotic therapy. The study is ongoing, evaluating a control group of 20 patients to assess the actual difference between probiotic use and non-use.

Results: longitudinal analysis of bacterial diversity (alpha and beta diversity) revealed a statistically significant difference between T0 and T1 after antibiotic and chlorhexidine therapy, with a reduction in richness and variability of the oral flora. A statistically significant difference was also observed between T1 and T2 following probiotic treatment, which restored the flora to T0 levels.

Conclusions: the use of probiotics following antibiotic and antiseptic therapy aids in rebalancing microbial species, specifically promoting the eubiosis previously present in treated patients.

CHLORHEXIDINE-RESISTANCE IN DENTISTRY: PRELIMINARY RESULTS FROM AN OBSERVATIONAL STUDY ON ORAL SWABS

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Aim: Antimicrobial Resistance (AMR) is considered a global burden and leading cause of death, worldwide. Chlorhexidine (CHX) is one of the most used antimicrobials for oral healthcare, but prolonged use may be associated with bacterial resistance and potential antimicrobial cross-resistance. Cancer patients are at particular risk of AMR, due to immunosuppression and the frequent use of antiseptics and antibiotics. This study aimed at evaluating the presence of CHX-resistant bacteria in oral swabs of cancer patients.

Methods: an observational study was conducted among cancer patients who referred to the dental clinic. Two oral swabs were collected per patient. Samples were spread on MacConkey plates with CHX supplementation, incubated for 24 h/37°C, then analyzed; a colony of each bacterial phenotype was selected and incubated in a new falcon with 5 mL BHI 24 h/37°C for subsequent storage in Skin Milk at -20°C. Isolates were identified by Maldi-TOF and MIC for CHX was performed using E. coli ATCC 25922 as a control.

Results: thirty-seven phenotypes of CHX-resistant bacteria were isolated on MacConkey agar from 48 cancer patients (24 males, 24 females; mean age: 66.125±12.414 years old), among which the following species were identified: *Enterobacter cloacae*, *E. asburiae*, *E. kobei*, *Acinetobacter junii*, *Raoultella ornithinolytica*, *Klebsiella oxytoca*, *Citrobacter koseri*, *K. pneumoniae* and *Serratia odorifera*. MICs for CHX found ranged from 1 to 16 µg/mL.

Conclusions: within its limitations, our study supports the presence of CHX-resistant bacteria among cancer patients, highlighting the importance of responsible antimicrobial use by both healthcare professionals and patients.

DEEP-LEARNING-BASED IMAGE CLASSIFICATION FOR ORAL LESIONS: A MULTICENTER PILOT-STUDY

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Aim: to compare the performance of various AI models in classifying oral mucosal lesions.

Methods: retrospective images from 4 centers were used to train/validate a Deep Learning (DL) model (BEiT: BERT Pre-Training of Image Transformers), to classify images into 4 categories: Normal Mucosa (NM), Reactive/Benign (RB), Potentially Malignant (PM), Oral Cancer (OC). The images were annotated by an oral pathology resident and reviewed by oral medicine experts. The BEiT was pre-trained with 87M parameters model and compared to six benchmark models (kNN, Logistic Regression, and Random Forest) trained using a no-code tool (Orange Data Mining). Performance metrics, including Sensitivity, Specificity, Precision, and F1-score, were evaluated.

Results: the dataset included 289 clinical images of 178 patients. The BEiT model outperformed all others in all performance metrics, achieving an overall accuracy of 66.6%, compared to 50.9% for the second-best model. Similar results were observed for Precision (72.3% BEiT *vs* 49.6% for the second-best) and Recall (62.3% BEiT *vs* 50.9% for the second-best).

Conclusions: the tailored BEiT DL model showed superior performance compared to off-the-shelf models, with high precision scores and low false positives. This suggests that DL models could be useful for non- experts, especially in real-world settings with low-quality smartphone images. Targeted datasets appear essential for the success of such models.

PREVALENCE OF ORAL HEALTH COMPLICATIONS IN HEAD AND NECK CANCER PATIENTS UNDERGOING RADIOTHERAPY: AN EPIDEMIOLOGICAL STUDY

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Aim: this study was conducted to epidemiologically assess the prevalence of clinical signs occurring during and after radiotherapy treatment in the head and neck region, with a particular focus on the adverse effects on the oral cavity.

Methods: a questionnaire was administered to 55 patients treated for head and neck cancer at the Radiotherapy Department of Spedali Civili of Brescia. The survey investigated the primary cancer site, the timing of radiation therapy, the adverse effects experienced, and the dental care program followed.

Results: the results revealed that the majority of patients had primary cancer located in the oral cavity, and radiation therapy predominantly targeted lymph nodes. Approximately half of the patients also received concurrent chemotherapy. It was observed that many patients had not undergone dental evaluations prior to radiation therapy and were unable to recall their last professional oral hygiene session. The most common symptoms reported were xerostomia (53%), dysgeusia (75%), and mucositis (55%), as reported in the literature.

Conclusions: the findings suggest that adequate dental support is crucial for managing oral health during and after radiation therapy. Educational interventions are needed to raise patient awareness about the importance of maintaining oral health. A personalized care protocol, including professional oral hygiene sessions, monitoring throughout treatment, and the use of saliva-controlling products, is essential for preventing oral complications and improving patients' quality of life.

GENDER ISSUE IN OSCC: IS IT A RISK FACTOR FOR INDIVIDUALS WITHOUT ADDICTIVE HABITS?

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Aim: Oral Squamous Cell Carcinoma (OSCC) is the most common oral cancer, representing 90% of all cases. Field Cancerization (FC) refers to the presence of genetically altered cell clones across multiple areas, predisposing patients to synchronous or metachronous OSCC. OSCC typically affects men over 50 with known risk factors such as tobacco and alcohol. The study aims to investigate the potential influence of gender on OSCC occurrence in individuals without addictive habits.

Methods: patients with multiple diagnoses of OSCC during the last two years, including imaging and biopsies, were selected at Oral Medicine and Dentistry for Fragile Patients Unit (AOUP, Palermo). Data was analyzed to assess FC patterns and OSCC recurrence.

Results: of the 7 patients with multiple diagnoses of OSCC, 5 had no known risk factors and were female (mean age 72.2±10.4 years). The most affected site of primary OSCC was the buccal mucosa (3/5) followed by the lateral border of the tongue (2/5). Furthermore, 4 patients presented FC, of which 2 with metachronous and synchronous OSCC simultaneously (mean time of occurrence 32.2±16.2 and 2.5±3.5 months, respectively), 1 had only metachronous (occurrence: 93 months) and 1 had only synchronous (occurrence: 6 months). One patient experienced 2 OSCC recurrences on the lateral border of the tongue at 8 and 11 months after the first diagnosis.

Conclusions: further large-scale studies are needed to clarify these findings, which, although based on a limited number of cases, may suggest a potential gender-related susceptibility to OSCC in individuals without conventional risk factors such as tobacco and alcohol consumption.

IN VITRO EFFICACY OF THE DIRECT APPLICATION OF AIR GAS SOFT JET PLASMA IN HEAD AND NECK CANCER CELL LINES

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Aim: recently Cold Atmospheric Plasma (CAP) has emerged as a new therapy for biomedical applications. The direct application of CAP to human tissues is approved by the European Committee for Standardization and the International Organization for Standardization for wound healing and Head and Neck Cancer (HNC).

In this scenario, CAP could be a promising alternative strategy to counteract cancer cell growth, in addition, the mechanism of action of plasma is different from that of an antineoplastic agent.

Methods: a CAP gas air jet was applied directly on three HNC cell lines (HSC2, HSC3, and FaDu), as well as on normal human Gingival Fibroblast (hGF) cells for 30s and 60s; Doxorubicin has been used as positive control. To evaluate any difference in morphology after CAP direct application Cells were fixed, dehydrated and: 1) gold-coated using a Scanning Electron Microscope (SEM); 2) embedded in resin, cut with an ultramicrotome and observed under a Transmission Electron Microscope (TEM).

Results: the proliferation of the hGF healthy cell line was not affected by CAP direct application, and their morphology was largely preserved in the CAP 30s group, with slight rounding in the CAP 60s group. On the contrary, changes of the cell membrane were noted in the Doxorubicin group. In the HNC cell lines, the cells' viability was significantly affected both by CAP treatment and Doxorubicin.

Conclusions: ongoing research, collaboration between researchers and healthcare professionals, are crucial for connecting the full potential of these technologies.

THE ROLE OF THE DENTIST IN THE EARLY RECOGNITION OF CELIAC DISEASE

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Aim: given that recurrent oral ulcers and other mucosal changes may be early indicators of Celiac Disease, it is crucial for dentists to be aware of these signs and initiate appropriate diagnostic pathways.

Methods: a 31-year-old female patient presented to the dental clinic of IRCCS Ospedale San Gerardo dei Tintori - Monza with a recurrent aphthous ulcer on the lower lip mucosa that had persisted for two weeks. Clinical examination also revealed migratory glossitis. Given the concurrent gastrointestinal symptoms, a possible link to Celiac Disease was suspected. Specific serological tests were performed for anti-Tissue Transglutaminase (TTG) and Anti-EndoMysial (EMA) antibodies, followed by an intestinal biopsy.

Results: the serological tests were positive for Celiac Disease, and the biopsy confirmed the diagnosis. The patient was referred to a specialized center for Celiac Disease management. Treatment included the introduction of a gluten-free diet and applying corticosteroid cream to manage the oral ulcer, leading to symptom resolution. No specific treatment was needed for migratory glossitis.

Conclusions: oral manifestations, such as recurrent ulcers and glossitis, may be early warning signs before systemic symptoms fully develop. Therefore, a thorough oral examination and detailed anamnesis are crucial. When Celiac Disease is suspected, collaboration with medical specialists is necessary for definitive diagnosis and appropriate management.

THE PIERCING-STRETCHING TECHNIQUE FOR THE TREATMENT OF ORAL FLOOR RANULAE AS A MINIMALLY INVASIVE PROCEDURE: A CLINICAL CASE

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Aim: this clinical case highlights the efficacy of the Piercing-Stretching suture technique in treating simple ranula on the right oral floor. This minimally invasive approach uses sutures' compression to promote lesion fibrosis. The procedure resulted in complete resolution, with no recurrences at three-month follow-up.

Methods: the patient presented with a 1 cm simple ranula on the right floor of the mouth, with no history of previous episodes. The patient reported the onset of swelling and discomfort several months earlier, with an almost regular recurrence of symptoms.

Following clinical diagnosis, the lesion was treated using the Piercing-stretching suture technique to minimize invasiveness and reduce the risks of lingual nerve damage and submandibular duct injury.

Following informed consent, local perilesional anesthesia (2% mepivacaine + vc) was administered. Wharton's duct patency was verified before and after the procedure. According to piercing-stretching suture technique, two lose 3/0 silk sutures were placed proximally and distally to the ranula, and three tight orthogonally oriented 5/0 Monocryl non-absorbable sutures. The patient was discharged with postoperative antiseptic therapy (0.2% chlorhexidine rinses) and analgesic therapy (paracetamol 1000 mg as needed). Postoperative follow-up was conducted at 7, 14, and 21 days. The sutures were removed on day 21, according to the technique as described by Capaccio et al.

Results: the procedure led to complete resolution of the ranula, without pain reported, intra/post-operative complications or recurrence at three months.

Conclusions: the piercing-stretching suture technique is a promising minimally invasive procedure compared to the current gold standard, ensuring complete resolution while minimizing surgical and anatomical risks, while enhancing patient's comfort.

VALIDATION OF THE HAMILTON ANXIETY AND DEPRESSION RATING SCALES IN BURNING MOUTH SYNDROME: A MULTICENTER SIPMO STUDY

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Aim: to validate the psychometric properties of the Hamilton Anxiety Rating Scale (HAM-A) and the Hamilton Depression Rating Scale (HAM-D) in patients with Oral Lichen Planus (OLP), comparing Keratotic (OLP-K) and Non-Keratotic (OLP-NK) forms, and to assess their utility in detecting anxiety and depressive symptoms. A comparison with healthy controls was also conducted to contextualize psychological burden.

Methods: a total of 263 OLP patients (OLP-K = 132; OLP-NK = 131) and 132 healthy controls were enrolled across multiple centers. All participants were assessed using HAM-A and HAM-D. Group comparisons were performed using non-parametric tests. Internal consistency was evaluated via Cronbach's alpha; construct validity through item-total correlations (Spearman's rho).

Results: total HAM-A scores were comparable between OLP-NK (6 [2.5-13.5]) and OLP-K (6 [2-9.25]; p = 0.095), while HAM-D scores were significantly higher in OLP-NK (6 [4-11]) than OLP-K (5 [2-8]; p = 0.006). Anxiety symptoms (HAM-A > 7) were observed in 43.5% of OLP-NK and 41.7% of OLP-K (p = 0.859), and depressive symptoms (HAM-D > 7) in 32.1% and 26.5% respectively (p = 0.054). Compared to healthy controls, OLP patients showed higher scores in several HAM-A items (e.g., anxiety, tension, fears), though not statistically significant.

Conclusions: HAM-A and HAM-D are valid and reliable tools for assessing anxiety and depression in OLP patients. Their use may support early psychological screening and integrated care in this chronic condition.

MIMICS OR DISTINCT ENTITIES? THE CHALLENGE OF DIFFERENTIATING PROLIFERATIVE VERRUCOUS LEUKOPLAKIA AND LICHENOID LESIONS: A CASE REPORT

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Aim: Oral Lichen Planus (OLP) and Proliferative Verrucous Leukoplakia (PVL) may exhibit overlapping clinical features, yet they differ significantly in malignant potential. We report the case of a 66-year-old female patient, non-smoker, with no systemic diseases and not on any medications, who presented with oral lesions showing clinical features overlapping between OLP and PVL.

Methods: the oral examination revealed keratotic lesions with a predominantly plaque-like phenotype, interspersed with erythematous areas. The lesions diffusely involved the upper and lower vestibular and palatal/lingual gingiva, vestibular fornices, buccal mucosa, left edentulous mandibular ridge, and dorsal tongue. On the buccal mucosa, the keratotic lesions appeared as white streaks forming a characteristic reticular pattern.

Results: multiple incisional biopsies were performed on the lower vestibular gingiva and buccal mucosa, revealing hyperparakeratosis, and vacuolar alteration of the basal layer of the epithelium, along with a dense lymphocytic infiltrate at the dermal–epidermal junction. No dysplasia was observed. The histological findings are consistent with OLP, although certain features do not allow for the exclusion of a possible progression toward a PVL.

Conclusions: distinguishing OLP from PVL is crucial due to the progressive behavior and high malignant potential of PVL. Future research should aim to identify reliable biomarkers, possibly through omics approaches and AI technologies, to improve early diagnosis and support personalized monitoring and treatment strategies.

THE USE OF OPTICAL COHERENCE TOMOGRAPHY IN THE MANAGEMENT OF PATIENTS WITH POTENTIALLY MALIGNANT ORAL DISORDERS

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Aim: Optical Coherence Tomography (OCT) is a non-invasive imaging technique for visualizing biological structures. This study evaluated the potential use of OCT in detecting ultrastructural patterns of Oral Lichen Planus (OLP) and Leukoplakia (OL) and compared its findings with histopathology. We assessed the correlation between epithelial and lamina propria thickness in *ex vivo* OCT scans and histological analysis to validate OCT as a diagnostic tool for identifying lesions requiring biopsy and distinguishing high-risk Oral Potentially Malignant Disorders (OPMDs).

Methods: from November 2021 to October 2024, we recruited 40 patients: 22 patients with reticular white OLP, and 18 patients with OL. An incisional biopsy was performed on each patient, followed by a histopathological examination to confirm the diagnosis and to include the patients in a follow-up protocol at the Department of Pathology and Oral Medicine of the Dental School in Turin. On each biopsied sample, we performed *ex vivo* scans using a Thorlabs SD-OCT System Telesto 220. Later, a single examiner compared the histological slides with those obtained with the OCT system.

Results: the difference between OCT measurements and histology in OLP and OL patients was statistically significant (p-value <.05). The device struggled to accurately detect the lamina propria in presence of dysplasia (mild/moderate/severe), making OCT and histological measurements non-comparable. However, a signal interruption was observed, serving as a potential indicator of dysplastic tissue.

Conclusions: the OCT allowed us to observe acceptable correspondence between scanning and histological measurements for OLP and OL without dysplasia. However, its ability to differentiate between normal and dysplastic tissues remains an area for improvement.

AGGRESSIVE B-CELL NON HODGKIN LYMPHOMA OF THE ORAL CAVITY: A CASE REPORT

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Aim: to report a clinical case of an aggressive B cell Non-Hodgkin Lymphoma (NHL) of the oral cavity and a literature review on the topic.

Methods: a 77-year-old male patient was referred to the Odontostomatology Unit of Parma for a progressively enlarging swelling on the right gingiva and palate, noted two months prior. Clinical examination revealed an ulcerated, swollen mass involving the right gingival mucosa and right hemipalate, reaching the palatal midline. An orthopantomogram (OPT) scan demonstrated an area of bone resorption affecting the upper dental arch and maxillary tuberosity. Multiple incisional biopsies were performed.

Results: histopathological analysis revealed an aggressive B-cell NHL with a high Ki-67 proliferation index (average 98%) in the absence of MYC/BCL2 translocations and negative for EBV. The patient underwent a CT scan as well as a PET scan total body. Imaging revealed a solid tissue mass in the right hemipalate extending to the gingival arch, opacification of the right maxillary sinus, and a sub-centimeter lymph node in the right level 2a region. No focal parenchymal consolidations or nodular lesions were observed in the abdomen or chest. The patient underwent R-CHOP (Rituximab and Cyclophosphamide, Hydroxydaunomycin, Vincristine sulfate-Oncovin, Prednisone) chemotherapy, achieving a good clinical response.

Conclusions: primary lymphoma of the oral cavity is extremely rare, accounting for only 3% of all lymphomas. To minimize misdiagnosis and delays in identifying oral NHL, non-specific symptoms such as mucosal ulcerations, bleeding, and tooth mobility should be carefully assessed.

ORAL DERMOID CYST IN THE FLOOR OF THE MOUTH: A CASE REPORT

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Aim: to present a case of a dermoid cyst in the oral floor of an 80-year-old female patient and discuss its clinical presentation, diagnostic approach, and treatment.

Methods: the patient presented with a swelling in the oral floor. A clinical examination was followed by a facial Computed Tomography (CT) scan with and without contrast medium to evaluate the cystic lesion. The patient underwent surgical excision under general anesthesia with subsequent histopathological analysis.

Results: the CT scan revealed a round, homogeneous, hyperdense formation with no enhancement after contrast administration. Surgical excision was performed using an intraoral approach, and histopathology confirmed the diagnosis of a dermoid cyst with an epithelial lining of predominantly squamous type. The patient experienced no complications, and follow-up at 9 days and 2 months showed complete recovery.

Conclusions: dermoid cysts of the oral cavity, though rare in adults, should be considered in the differential diagnosis of oral floor swellings. Early diagnosis through clinical examination and imaging, followed by surgical excision, provides an effective and curative treatment.

AN UNUSUAL CASE OF ORAL SOFT TISSUE ACTINOMYCOSIS

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Aim: actinomycosis is an infectious disease caused by anaerobic bacteria (*Actinomyces spp.*) usually found in the oral microflora and responsible for several cases of osteomyelitis. At the cervicofacial level, asymptomatic swellings are appreciated, which develop fistulas with drainage of sulfur granules. However, it sometimes presents with atypical manifestations, like the one described in this case report.

Methods: a 19-year-old young woman was referred to our Unit of Oral Medicine for the presence of multiple aphthous-like lesions distributed on the labial mucosa and on the left border of the tongue, with associated cervical lymphadenopathy and subsequent difficulty in chewing, swallowing and speech. A biopsy of the lesions was performed, along with second-level blood chemistry tests.

Results: histopathological analysis confirmed the diagnosis of actinomycosis of the oral cavity, while blood tests provided negative results of autoimmune or metabolic diseases. The patient underwent antibiotic therapy with amoxicillin 1g tid and lesions completely cleared after 10 days.

Conclusions: this case report illustrates an oral infectious disease, that is usually described in the literature with different symptoms, emphasizing the importance of the diagnostic phase and the role of the oral medicine specialist in the detection of atypical clinical manifestations of such diseases.

COMBINED APPROACH OF METHOTREXATE AND RADIOTHERAPY IN MODULATING THE PROGRESSION OF ORAL VERRUCOUS CARCINOMA

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Aim: Oral Verrucous Carcinoma (OVC) is a warty variant of oral squamous cell carcinoma as it accounts for 5% of the total of oral carcinomas. Histologically, OVC is characterized by the presence of superficial papillary folds covered with markedly acanthotic and hyper keratinized epithelium.
The aim of the following clinical case is to describe the combined therapeutic effect of methotrexate (MTX) and radiotherapy (RT) in promoting the stabilization of OVC.

Methods: a 93-year-old female patient was diagnosed with OVC in 2020, affecting the palate, cheek mucosa, and tongue. Due to the disease's extent, MTX infiltrations were required. One year later, an MRI with MDC revealed a bony infiltration point in the hard palate removed through a maxillofacial surgery in the hard and soft palate. Instead, cytoreductive RT (18 Gy, 3 fractions, twice a week) was prescribed to lead a clinical improvement.

Results: despite this favourable response, a rapid deterioration of both clinical and symptomatic conditions occurred after the completion of RT, prompting the reinitiation of MTX therapy. A subsequent CT scan showed the resolution of the hard palate infiltration, likely due to the combined synergistic effect of MTX and RT.

Conclusions: medical therapy with MTX combined with RT allowed to conclude that, unlike the currently available literature, they appear to have a synergistic effect, inhibiting the progression of the disorder and leading to an improvement in the clinical and radiological features as supported in the reported case by the regression of the infiltration site.

LICHENOID AND GRANULOMATOUS STOMATITIS AS A RARE PRESENTATION OF MUCOSAL LEISHMANIASIS

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Aim: Mucosal Leishmaniasis (ML) is a rare infectious disease that can manifest as nonspecific oral lesions. This report describes a rare case of mucosal involvement of leishmaniasis in the lower lip to highlight the associated diagnostic clinical and histological challenges.

Methods: an 80-year-old man presented with a persistent, erosive lesion on the lower lip had been misdiagnosed for two years despite two previous biopsies reporting nonspecific inflammation. To ensure adequate sampling, four biopsies were performed from different areas of the lesion.

Results: histopathological examination revealed a dense lichenoid and granulomatous inflammatory infiltrate with no evidence of malignancy. PAS and PAS-D stains ruled out the possibility of a fungal infection, and an immunohistochemical analysis for Leishmania amastigotes returned a negative result. To further investigate the aetiology of lesion, molecular testing for *Leishmania* DNA was performed, confirming the diagnosis. The patient underwent a one-month treatment with Miltefosine and Glucantime, achieving significant clinical improvement.

Conclusions: this case highlights the complexity of diagnosing chronic oral lesions. The overlap of inflammatory patterns can obscure the underlying cause, leading to prolonged misdiagnosis. Given the rising number of *Leishmania* infections in Europe, clinicians should include ML in the differential diagnosis of persistent oral lesions. Molecular testing may play a crucial role in confirming ML when histopathology is inconclusive, ensuring accurate diagnosis and appropriate treatment.

DIAGNOSTIC PITFALLS AND TREATMENT DILEMMAS IN CHRONIC HYPERPLASTIC CANDIDIASIS: A CASE REPORT

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Aim: Chronic Hyperplastic Candidiasis (CHC) is a rare, potentially malignant form of oral candidiasis associated with smoking and immune alterations. This case report describes its clinical presentation, differential diagnosis, and treatment, emphasizing the need to distinguish it from leukoplakia and Oral Lichen Planus (OLP) for accurate management.

Methods: a 52-year-old male, smoker for 30 years (15 cigarettes/day), presented with asymptomatic bilateral keratotic plaques in the retro-commissural region, with erythematous and speckled areas. The patient was treated with both systemical and topical antifungal therapy: Fluconazole 200 mg/day and oral topical nystatin suspension every 12 hours for 12 days. Comprehensive blood tests (including CBC, glucose profile, iron metabolism, vitamin B12, and folate levels) were performed to investigate systemic predisposing factors, and an incisional biopsy was subsequently scheduled.

Results: antifungal therapy led to a clinical improvement, supporting a mycotic etiology and pointing to CHC as the most likely diagnosis. An incisional biopsy has been planned to confirm the diagnosis and rule out epithelial dysplasia.

Conclusions: CHC requires precise clinical and histopathological evaluation. Accurate diagnosis is crucial for proper management. Smoking cessation and regular follow-up are essential to prevent recurrence and reduce the risk of malignant transformation.

CHRONIC HYPERPLASTIC CANDIDIASIS: A FIFTEEN-YEAR RETROSPECTIVE CASE SERIES

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Aim: Chronic Hyperplastic Candidiasis (CHC) is a rare manifestation of Oral Candidiasis. It is debated whether this entity can undergo malignant transformation. Here we present a retrospective case series analyzing the clinical and pathological characteristics of the disease, and its rate of malignant transformation.

Methods: seventeen patients with CHC were selected from 2010 to 2025, collecting their medical records, histological data and clinical photos. They were subsequently divided into three groups depending on the clinical behavior of the disease. Specifically, the first group included patients with clearing of the lesion after topical antifungal treatment; the second group those patients with retrocommissural leukoplakia, and the third group patients with onset of oral carcinoma.

Results: five, ten, and two patients were included in the groups 1,2, and 3, respectively. The most common histopathological finding reported in Group 1 was "squamous hyperplasia with inflammatory infiltrate", sometimes showing lichenoid features. "Squamous hyperplasia with hyperkeratosis" was the most common feature in Group 2, and in some cases pseudoepitheliomatous hyperplasia was also reported. Finally, patients in Group 3 developed verrucous carcinoma. Therefore, the percentage of malignant transformation of CHC was 11.7% in our series, in line with data reported in literature.

Conclusions: CHC should be included in the group of oral potentially malignant disorders; however, the actual role of *Candida albicans* in the process of malignant transformation still needs to be clarified.

ENHANCING THERAPEUTIC OUTCOMES AND HEALTHCARE EFFICIENCY THROUGH CANCER STEM CELL ASSAY-GUIDED CHEMOTHERAPY IN ADVANCED ORAL CANCER

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Aim: Cancer Stem Cells (CSCs) promote tumor resistance and recurrence, complicating the treatment of advanced Oral Squamous Cell Carcinoma (OSCC) and resulting in high financial toxicity from ineffective chemotherapy. This study evaluated the ChemoID assay, a precision oncology functional assay that guides personalized treatments to enhance patient outcomes and optimize healthcare resources for physicians.

Methods: eleven patients with advanced OSCC participated in the study. The ChemoID assay, a laboratory-developed test approved by the College of American Pathologists (CAP) and recently granted Breakthrough Device Designation (BDD) by the Food and Drug Administration (FDA), evaluated the sensitivity of Cancer Stem Cells (CSCs) from patient biopsies to traditional chemotherapy. After 48 hours of chemotherapy exposure, the assay assessed the survival of CSCs, offering tailored treatment recommendations for clinicians.

Results: a significant difference was observed in CSC patient responses to chemotherapy that was not linked to the tumor's site, emphasizing the necessity for individualized approaches and the limitations of site-specific treatment options.

Conclusions: the results emphasize the need for personalized treatment strategies and the drawbacks of site-based methods. The ChemoID assay customizes chemotherapy, allowing for more effective therapy choices. This minimizes unnecessary chemotherapy, hospitalizations, and healthcare costs. The versatility of ChemoID also supports evaluating novel therapies to enhance patient-centered options for advanced head and neck cancers.

HIGH DEFINITION ULTRASOUND OF ORAL LYMPHATIC LESION: A COMPREHENSIVE REVIEW AND ANALYSIS OF TWO CASE REPORTS

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Aim: this study aims to provide an overview on ultrasound characteristics of oral Lymphatic Malformations (LM) through a literature review and the presentation of two clinical cases.

Methods: twelve articles were selected. The Intraoral Ultrasound (IOUS) examination was performed using an 18 MHz linear hockey stick probe, in harmonic mode and standardized focus.

Results: US features of LM include well-defined, lobulated lesions with heterogeneous internal echotexture and multiple anechoic areas. The cystic spaces were often delineated by echogenic septa. No distinct capsule was observed, but a peripheral hypoechoic edge was occasionally noted. Color Doppler imaging revealed absent or minimal internal vascularity. Case 1 (lingual dorsum): a thin but hyperechogenic epithelium is present. Inside, multiple cystic areas bordered by hyperechogenic septa are clearly visible. It's not capsulated but it presented a thickened anechoic border at the base, that demarcates the lesion from surrounding tissues, below which a thin area of enhancement is evident. Flow is present in the core of the cystic areas although moderate in intensity. Case 2 (lower lip) has a hypoechogenic, oblong, lobulated structure, with no true hyperechogenic septa to demarcate the cystic areas, which instead can be identified due to the marked anechoic feature. The base is irregular and bordered by a hypoechogenic perimeter. Flow is sparse and peripheral. Mild enhancement is evident below the lesion.

Conclusions: while clinical examination plays a primary role in diagnosis, IOUS is considered a useful tool in the diagnosis of mass lesions in the oral cavity. In the case of LM, it can provide valuable supplementary information to the clinician.

THE PREVALENCE OF IDIOPATHIC INTRACRANIAL HYPERTENSION RADIOLOGIC SIGNS IN BMS PATIENTS: A CASE-CONTROL STUDY

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Aim: Idiopathic Intracranial Hypertension (IIH) is a disorder characterized by elevated intracranial pressure. This study explores a potential link between Burning Mouth Syndrome (BMS) and altered Cerebrospinal Fluid (CSF) dynamics, by assessing MRI markers of impaired intracranial pressure regulation typically observed in IIH.

Methods: in this case-control study conducted at the Oral Medicine Unit of Federico II University of Naples, BMS patients and healthy controls were consecutively recruited. All participants underwent non-contrast brain MRI, including MR venography, and fundus oculi examinations for papilledema. The neuroimaging criteria linked to IIH are empty sella, enlargement of the optic nerve sheaths, posterior scleral flattening, and dural sinus stenosis.

Results: 37 consecutive patients with BMS (predominantly female: 32/37) and 37 healthy controls were enrolled. Compared to controls, the BMS group exhibited significantly more frequent IIH-associated findings: an enlarged optic nerve sheath diameter (mean 6.0 mm *vs* 5.3 mm; $p < 0.001$), a higher prevalence of empty sella (54.1% *vs* 13.5%; $p < 0.001$), and more frequent dural sinus stenosis or hypoplasia (97.3% *vs* 27%; $p < 0.001$).

Conclusions: the significantly higher prevalence of IIH-associated neuroimaging signs (empty sella, enlarged optic nerve sheaths, and dural sinus stenosis) in BMS patients compared to healthy controls suggests that BMS may represent a chronic neurological disorder. Further investigation of CSF dynamics in BMS patients could reveal new perspectives on pathogenesis and therapy of the disease.

ALLODYNIA: A COMPARATIVE ANALYSIS BETWEEN MIGRAINE AND BURNING MOUTH SYNDROME

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Aim: allodynia, a pain due to a stimulus that does not usually provoke pain, is a prominent symptom in patients with neuropathic pain. It affects 15-50% of patients with neuropathic pain such as migraine. Burning Mouth Syndrome (BMS) is classified as painful cranial neuropathies. The aim of the study is to evaluate the prevalence of allodynia both in BMS and migraine patients.

Methods: a comparative study with BMS and migraine patients was performed. Demographic variables were collected. We evaluated pain with Visual Analogue Scale (VAS), Short Forme of Mc Gill Pain Questionnaire (SF- MCG) and Allodynia Symptom Checklist (ASC-12); anxiety and depression using the Hospital Anxiety and Depression Scale (HADS-A; HADS-D). Statistical analysis was performed to assess group differences using t-tests, Chi-Square/Fisher's exact tests, or Mann-Whitney U tests, as appropriate; Spearman correlations and multiple linear regression were used to identify predictors of ASC-12.

Results: a total of 27 BMS patients and 28 migraine patients were enrolled. BMS patients showed a statistically significant lower median scores of VAS, SF-MC Gill and ASC-12 compared to that in migraine group ($p < 0.001$). No statistically significant difference was observed for the median scores of HADS-A and HADS-D ($p > 0.05$). A positive correlation was found between ASC-12 and age (p: 0.002), SF-MCG (p: 0.002), VAS (p: 0.003), and HADS-D ($p < 0.001$). In the multiple linear regression, only HADS-D was significant, with a resulting R^2 of 0,268). ANOVA confirmed the model's overall significance.

Conclusions: as widely reported in literature BMS and migraine share some pathogenetic pathway. However, the higher prevalence of allodynia in migraine patients compared to BMS patients showed in this study could reveal new perspectives on pathogenesis of BMS.

DENTAL MANAGEMENT OF PATIENTS UNDERGOING ANABOLIC THERAPY WITH ROMOSOZUMAB FOR OSTEOPOROSIS

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Aim: romosozumab is a humanized monoclonal antibody that inhibits sclerostin, promoting bone formation. Clinical protocols include 12 injections of romosozumab, followed by a switch to antiresorptive therapy with denosumab. Clear guidelines on the risk of Medication-Related Osteonecrosis of the Jaw (MRONJ) are lacking. This study aims to establish structured dental management protocols for patients who are candidates for romosozumab therapy.

Methods: a multidisciplinary team evaluated patients prior to therapy. Assessments included the collection of clinical and laboratory data, dental panoramic radiography and radiomorphometric indices measurement. The necessary oral surgical therapies were performed during romosozumab therapy, within 6-8 weeks months before starting denosumab.

Results: 13 patients underwent the initial assessment and 5 completed one year of therapy. 11 extractions and 1 implant insertion were performed. No cases of MRONJ have been observed. A significant increase in the MCW and PMI indices was observed.

Conclusions: with the increasing number of patients on romosozumab, specific clinical guidelines are needed. While the increase in PMI and MCW indices after one year therapy indicates an improvement in bone density, suggesting a positive effect on cortical bone quality, the relation with MRONJ risk remains unsure. Therefore, we decided to use the 12-month treatment period to prepare the oral cavity for antiresorptive therapy, ensuring timely initiation of treatment and preventing delays that could compromise therapeutic efficacy.

HIGH DEFINITION ULTRASOUND FOR THE CLINICAL ASSESSMENT OF DEPTH OF INVASION IN THE ORAL SQUAMOUS CELL CARCINOMA: AN OBSERVATIONAL STUDY

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Aim: to compare the Depth of Invasion (DOI) measurements of Oral Squamous Cell Carcinoma (OSCC) obtained with intraoral Ultrasound images (ioUS) with histopathological measurements.
Methods: eighteen patients (9 males, 9 females; mean age 63.87±9.9 years) with histologically confirmed OSCC of the tongue (dorsum, margins, ventral surface) were enrolled. ioUS images were acquired using an 18 MHz linear probe; 3 high-quality images per patient were selected (with intact epithelial boundaries bilaterally adjacent to the lesion); DOI reference line (0.1 mm) was drawn between healthy boundaries; a perpendicular line was then extended to the deepest point of the lesion. All measurements were performed using ImageJ software. DOI values were controlled to account for tissue shrinkage during histopathological processing. Statistical analysis included the Mann-Whitney U Test, Intraclass Correlation Coefficient (ICC), and Spearman's correlation.
Results: ioUS strongly correlated with pathological DOI ($p < 0.001$). All lesions were correctly staged by ioUS, with complete concordance with pathological staging. DOI values exhibited high reproducibility (ICC >0.90) with no significant difference between ioUS and pathological measurements ($p > 0.05$).
Conclusions: these findings support the potential role of intraoral ultrasound in the assessment of OSCC. Nevertheless, its clinical implementation requires further validation through standardized protocols and large-scale, multi-center studies.

TOOTH EXTRACTIONS IN PATIENTS UNDER SAPT AND DAPT: A NON-RANDOMIZED PROSPECTIVE COMPARATIVE COHORT STUDY

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Aim: antiplatelet drugs are vital in preventing thromboembolic events but present a bleeding risk during dental procedures. This study aimed to demonstrate the safety of tooth extractions in patients on antiplatelet therapy, including DAPT, by evaluating postoperative bleeding and the efficacy of local hemostatic measures, also considering the influence of periodontal conditions.
Methods: 48 patients were divided into three groups (n = 16 each): control (no antiplatelet therapy), Single Antiplatelet Therapy (SAPT), and Dual Antiplatelet Therapy (DAPT). A total of 71 tooth extractions were performed. Periodontal status was evaluated for Bleeding on Probing (BOP) and radiographic lesions. Postoperative bleeding was graded on a four-point scale based on the time and measures required for hemostasis. Statistical analysis included the Kruskal-Wallis test to compare bleeding grades across groups and Spearman's correlation to assess the relationship between BOP/periodontal lesions and bleeding grade.
Results: the Kruskal-Wallis test showed a statistically significant difference in bleeding grades among the therapy groups ($p < 0.05$), with the DAPT group exhibiting higher bleeding. Spearman's correlation revealed a modest positive and significant correlation between both BOP ($\rho = 0.37$, $p < 0.05$) and radiographic periodontal lesions ($\rho = 0.39$, $p < 0.05$) with the degree of postoperative bleeding.
Conclusions: the increased postoperative bleeding observed in the DAPT group aligns with existing literature and underscores the significant influence of periodontal inflammation on the risk of bleeding in patients receiving antiplatelet therapy. The study demonstrates that tooth extractions can be safely performed in these patients when appropriate local hemostatic protocols are applied.

GENETIC AND IMMUNOLOGICAL CHARACTERIZATION OF PEMPHIGUS VULGARIS: A CROSS-SECTIONAL STUDY

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Aim: the aim of this study was to characterize the immunological and genetic phenotype of Pemphigus Vulgaris (PV) patients evaluating any correlation between cellular subsets, gene variants and patients' clinical characteristics.

Methods: a comprehensive panel of lymphocyte subpopulations, including B naïve, B memory, Th naïve, Th memory and Th17 cells, was investigated through flow cytometry. Next-Generation Sequencing (NGS) was used to analyze 386 genes associated with autoimmune diseases, autoinflammation and primary immunodeficiencies. Variants' pathogenicity was assessed through PolyPhen tool.

Results: twenty-six patients were recruited: 16 (61,5%) exhibited almost one Single Nucleotide Polymorphism (SNP). Ten (62,5%) variants were classified as pathogenic or likely pathogenic while 6 (37,5%) were of uncertain clinical significance. 7 (43,75%) SNPs had not been previously reported. A correlation was found between SNPs and clinical characteristics with patients who displayed genetic mutations reporting lower PDAI and Dsg1 levels (p-value <0.05). When assessing flow cytometric immunophenotyping, patients with mucosal involvement reported significantly lower frequencies of Th17 (p-value <0.01) and Th memory cells (p-value <0.05) and significantly higher frequencies of Th naïve cells (p-value <0.05) compared to those with PV affecting both skin and mucous membranes.

Conclusions: these Hyperimmunity and hypoimmunity-related gene variant preliminary results seem to predispose to the development of PV. Different cellular phenotypes reflect disease extent and clinical severity.

KNOWLEDGE, ATTITUDES, AND PERCEPTIONS OF ITALIAN HEALTHCARE PROFESSIONALS REGARDING ORAL MANIFESTATIONS OF INFLAMMATORY BOWEL DISEASES: A SURVEY-BASED CROSS-SECTIONAL STUDY

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Aim: oral lesions often precede gastrointestinal symptoms in IBD, aiding early diagnosis and stressing the need for dentist awareness and a multidisciplinary approach. This study assessed Italian pediatric dentists' recognition and management of IBD-related oral manifestations, identifying gaps and opportunities to enhance patient care.

Methods: a cross-sectional survey among pediatric, general dentists and pediatricians assessed Knowledge, Attitude, and Perception on oral manifestations in IBD patients.

The validated questionnaire included demographics, 30 true/false knowledge items, and 20 Likert-scale items for attitude and perception. Data was collected via paper and online surveys.

A statistical descriptive analysis was performed for demographic data, with knowledge assessed using Pearson's chi-square test and attitude and perception compared using ANOVA.

Results: a total of 142 participants were included. Preliminary results revealed knowledge gaps on the type, prevalence, and management of oral IBD lesions, especially among dentists (87.3%), of whom only 50% recognized their diagnostic role. Just 16.7% of pediatricians fully recognized the general dentists' role (p = 0.027). Most valued a multidisciplinary approach and requested further training.

Conclusions: the findings underscore the need for improved training and stronger interdisciplinary collaboration in managing oral lesions in IBD patients. Greater awareness among pediatric dentists can support early diagnosis and better outcomes. Future efforts should prioritize integrating IBD-related oral health into dental education.

DNA METHYLATION ANALYSIS IN THE MUCOSA OF ORAL CANCER PATIENTS: A COMPARATIVE EVALUATION BETWEEN YOUNG AND OLD PATIENTS

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Aim: early-onset Oral Squamous Cell Carcinoma (OSCC) represents a distinct subset of oral cancer affecting a younger population, for which risk factors, histopathological and molecular features, as well as prognosis, remain poorly understood. The aim of the present study is to compare the DNA methylation profiles of young and older OSCC patients.

Methods: the study included 17 OSCC patients under the age of 50, 47 patients aged 50-69 and 77 patients over the age of 70. For each patient, two oral brushing samples were collected: one from the tumor mass and one from the clinically healthy controlateral mucosa. DNA methylation levels were quantitatively assessed using a pre-selected 13-gene panel. A positive or a negative score was calculated for each brushing sample based on a predefined cut-off value.

Results: a positive score was detected in OSCC mass of 90% of patients under 50, 91.4% of patients aged 50-69, and 97.7% of those over 70. A significant difference was observed in the analysis of the healthy contralateral mucosa: none (0/17, 0%) of the patients under 50 showed a positive score, compared to 13/47 (27.7%) in the 50-69 age group and 20/77 (25.9%) in the >70 group (Chi^2 5.9; $p < 0.05$).

Conclusions: these findings support the utility of DNA methylation analysis in detecting field cancerization in OSCC patients. Preliminary data indicate an absence of field effect in early-onset OSCC cases. Understanding the mechanisms underlying oral carcinogenesis in young patients can be a key issue for defining prognosis and optimizing treatment strategies.

IN VITRO EFFECTS OF TRADITIONAL CIGARETTE SMOKE COMPARED WITH ELECTRONIC CIGARETTE AND HEATED TOBACCO PRODUCT ON DENTAL PULP STEM CELLS

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Aim: new alternative devices to traditional smoking are considered potentially less harmful to the oral cavity. The aim of the study was to assess the biological effects of traditional cigarette smoke and new electronic and heated tobacco product smoking devices on Dental Pulp Stem Cells (DPSCs).

Methods: the effects of Traditional Smoke (TS) (Gold Pocket, Marlboro), E-cigarettes (E-cig) (Noir-Smoke, E-Liquid Real Blend-Soft Tobacco), and IQOS heated tobacco device (Philip Morris) were evaluated. Smoke extracts were administered at concentrations ranging from 100% to 3.12%, with continuous exposure for 24, 48, and 72h. Cell migration (Wound Healing assay), cell proliferation (crystal violet assay), and ROS analysis were performed.

Results: cell proliferation decreased with 100% TS smoke, although not significantly at 48h. 100% E-cig extract caused a slight but non-significant reduction at all time points, while 100% IQOS extract led to a significant decrease at 24h. No effects were observed at 6.25% concentration for all extracts, indicating a concentration-dependent trend. ROS evaluation at 24h with 6.25% extracts showed no evident cytotoxic effects, according to proliferation assay. The wound Healing assay revealed significantly impaired wound closure from 15h with 100% TS and IQOS extracts, while no effects were detected at 6.25%.

Conclusions: exposure to 100% TS inhibited DPSCs proliferation, potentially impairing their role in tissue repair. Although at 72h a tendency for recovery suggests possible cellular adaptation and the need for further studies to investigate chronic exposure.

THERMAL EFFECT OF METALLIC ORTHODONTIC DEVICES UNDER VACUUM AND ELECTROMAGNETIC FIELDS FOR ANTI-AGING TREATMENT

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Aim: the physical appearance of an individual plays a primary role as it influences the opinion of the viewer. For this reason, orthodontic therapy to improve perceived aesthetics is in high demand. This, combined with the increase in the number of facial aesthetic treatments, has led to the need to understand potential risk factors in the application of medical devices to the perioral skin in patients with fixed orthodontic appliances. The aim of this study was to evaluate in vitro heating of brackets following electromagnetic fields and negative pressure (V-EMF) used as an anti-aging treatment.

Methods: two different types of titanium ("beta-Titanium" and "Ni-Ti") alloy wires were mounted on a resin mouth were covered with porcine muscle tissue, then they were subjected to anti-aging therapy with a Bi-one LifeTouchTherapy which generates a combination of vacuum and electromagnetic fields (V-EMF). During therapy brackets and porcine tissue were thermally monitored using a Wavetek Materman TMD90. In total 20 mouths were used, 10 with Beta Titanium and 10 with Ni-Ti wires.

Results: a T (temperature) increase of about 1°C was recorded in each group. The outcome of the present research shows that T has increased by 1.1°C at the end of the session, falling well within the safety range of 2°C as specified by the standard CENELEC EN 45502-1. Therefore, V-EMF therapy tends to heat up at most as much as biological tissue (+0.9°C/1.1°C vs 1.1°C/1.1°C).

Conclusions: anti-aging therapy with V-EMF causes a thermal increase on orthodontic brackets that is not harmful to pulp health.

COMPREHENSIVE METHODS FROM CIRCULATING EXOSOME-LIKE EXTRACELLULAR VESICLES (ELVS) ISOLATION AND CHARACTERIZATION: AN INTRIGUING TOOL IN ORAL CANCER DISCOVERY

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Aim: the role of Exosome-Like extracellular Vesicles (ELVs), in cancer development and progress is a key object of worldwide cancer research. In particular ELVs may contribute to different cancer-related functions: angiogenesis, immune escape, metastasis and drug resistance. ELVs are vital sources of cancer biomarkers and widely used for clinical diagnostics. Therefore, the isolation of ELVs has enormous potential in the early and non-invasive diagnosis and prognosis of cancer. We aim to provide a detailed protocol for the isolation of exosomes in Oral Cancer.

Methods: after ultracentrifugation and Western Blot analysis, with a modified protocol, validation of exosome isolation may be performed by imaging approaches. Due to their nano-scaled size, ELVs are not observable by most imaging platforms; however, can be observed by Electron Microscopy (EM) which allows to provides an adequate resolution power to visualize exosomes and hence an able identity verification and purity/yield evaluation.

Results: once exosomes have been successfully isolated and characterized, extraction of total RNA can be performed. We have optimized a protocol to extract all types of RNA and then to focus on miRNAs regarding quality control prior further analysis quality to ensure there is no sample degradation. In this regard, the Nanosight and Leprechaun analyser provides fast and sensitive analysis to resolve nucleic acid samples in the size range, allows for separation of miRNA smears from tRNA, and requires little amount of sample.

Conclusions: we propose a method of isolation of ELVs that can preserve their integrity, cargo and functionality.

EMERGING ROLE OF CANCER-ASSOCIATED FIBROBLASTS-DERIVED EXOSOMES: A FOCUS ON ORAL SQUAMOUS CELL CARCINOMA

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Aim: cutting-edge approaches, like the use of exosomes, show great promise as non-invasive biomarkers for cancer detection and monitoring. The most abundant cells in tumor stroma are Cancer Associated Fibroblasts (CAFs), key players in regulating tumor cells behaviour and affecting chemotherapy. CAF-derived exosomes regulate cancer cells through miRNAs they contain. The aim of this research was to investigate the correlation between plasma exosomal miR-196a upregulation and increased proliferation, malignant phenotype and chemoresistance in HNC.

Methods: the study proposal consists in isolation of CAF-derived exosomes from Oral Squamous Cell Carcinoma (OSCC) sample. CAF-derived exosomes were grown in Minimum Essential Medium with Exosome-Depleted fetal bovine serum. The exosomes were obtained using the process of Ultracentrifugation. Following that, the isolated exosomes were validated using western blot and Nanotracking Analysis (NTA) analysis and miRNA array.

Results: the OSCC miR-196a expression and upregulation was reported in CAF-derived exosomes tissue, is correlated with increased proliferation and chemoresistance promoting cell proliferation and inhibiting cell apoptosis by targeting CDKN1B and ING5 in the OSCC microenvironment. Besides, CAFs in the tumor microenvironment might increase miR-196a expression levels in tumor tissues through direct miR-196a transfer. Therefore, miR-196a may serve as a promising predictor and potential therapeutic target for chemoresistance in OSCC.

Conclusions: considering that the OSCC tumor mass is comprised mostly of stromal cells, it is possible that exosome-based therapies that target CAFs may have potential curative effects.

NARROW BAND IMAGING: A STUDY OF DIAGNOSTIC ACCURACY AND REPEATABILITY

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Aim: Narrow Band Imaging (NBI) is an optical digital method of image-enhanced endoscopy used to visualize the microvascular structure of oral mucosa, employed for early detection of dysplastic/neoplastic areas. This study evaluated the diagnostic accuracy and repeatability of the visual assessment of the NBI following Takano's classification among non-expert raters, since this technique has been associated with poor intra- and inter-rater repeatability.

Methods: ten non-expert raters underwent a frontal training session, held by expert raters, in the visual interpretation of images acquired by narrow band imaging technology. Subsequently they were asked to classify 90 clinical cases according to the Intrapapillary capillary loop classification described by Takano. This assessment was repeated twice in two distinct sessions (T1 and T2) four weeks apart. The reference standard for each clinical case was the histological analysis of the oral biopsy.

Results: the overall agreement with the reference standard was 18.8% for the T1 session and 21.0% for the T2 session, and 46.8% for the intra-rater repeatability. The overall kappa coefficients with the reference standard were 0.08 for T1 and 0.09 for T2 respectively, and 0.46 for the intra-rater repeatability. Overall, disagreements with the reference standard were 34.5% (T1) and 34.7% (T2) for stage 1 lesions, and 9.3% (T1) and 9% (T2) for stage 4 lesions.

Conclusions: the visual assessment of oral lesions, acquired with Narrow Band Imaging technology, requires a steep learning curve comprising both a preliminary theoretical learning session and a substantial clinical experience.

ORAL MUCOSAL DISEASES AND ARTERIAL HYPERTENSION: AN EPIDEMIOLOGICAL STUDY AIMED AT DETERMINING THEIR ASSOCIATION

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Aim: to determine the link between Arterial Hypertension (AH) and Oral Diseases (OD) and how they may influence each other in their prognosis and development.

Methods: an epidemiological study on 679 who attended our department for oral mucosal diseases was conducted.

Results: the medical history revealed only 11.19% (n = 76) of patients aged between 60 and 80 years suffer from AH, 51 women and 25 men. Most of them presented significant comorbidities, overall *Hashimoto's Thyroiditis* (HT) and *GastroEsophageal Reflux* (GERD), and only 7 patients suffered exclusively from AH. In the oral cavity, we mainly observed *Oral Lichen Planus* (OLP) (21 patients), *Burning Mouth Syndrome* (5 patients), *Black Hairy Tongue* (3 patients), *glossitis migrans* (3 patients), *cheilitis angolaris* (3 patients) and *fissured tongue* (1 patient). Only 6 patients had no OD.

Conclusions: AH in the observed patients is lower than the general values in the population: this could mean that many patients are not aware of having this problem and the oral pathologist could play a key role.

The percentage of women affected by AH in our sample is double compared to men, a data in contrast with the data of previous scientific works. AH is linked to OLP, data partially in agreement with previous scientific literature, and other oral mucosal diseases. A connection between periodontal pathogens and AH has already been described in literature, while for the first time a correlation with oral mucosal pathologies has been found. Among the most frequently observed comorbidities we have HT and GERD, both related to OLP.

TRANSLATION AND CROSS-CULTURAL VALIDATION OF THE QUESTIONNAIRE XEROSTOMIA INVENTORY IN ITALIAN LANGUAGE

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Aim: the Xerostomia Inventory (XI) questionnaire is a useful and validated evaluation instrument in patients suffering from xerostomia for both diagnosis and monitoring purposes. The aim of this work was to translate and validate the Italian version of the XI in Italian in a population of adult patients.

Methods: cross-cultural adaptation of the XI was performed using standard techniques. 11 items of the original XI were translated into Italian by two professional translators. A final consensus version was obtained and back translated to English. The translators and an expert committee synthesized the results in a consensus version that was compared with the original for the semantic value. The questionnaire was then administered to 80 pilot subjects (40 suffering from xerostomia and 40 healthy controls). To evaluate the test-retest reliability, the questionnaire was administered twice approximately 2 weeks apart to all participants enrolled, and the Pearson's correlation coefficient was used to evaluate reproducibility of results. Internal consistency was assessed using Cronbach's alpha. The Mann-Whitney U-test was used to evaluate differences in answers between patients and controls.

Results: the final translated version of the XI was found to have good content validity and excellent test-retest reliability. The Italian XI was able to distinguish significantly between xerostomia and non-xerostomia groups. Cronbach's alpha value was 0.64.

Conclusions: the Italian version of the XI was found to be a valid, reliable, and easily administrable instrument for xerostomia assessment in adult individuals, and it can be widely applied in routine clinical activity both for screening and research purposes.

ORAL CARCINOMA MIMICKING A PYOGENIC GRANULOMA: A CASE REPORT

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Aim: oral cancer is one of the most common neoplasms in the world. Although well known, the diagnosis remains a challenge also for experts in oral pathology because it may present several clinical features, ranging from a benign lesion to a frank presentation. We present a case of oral squamous cell carcinoma mimicking a reactive lesion.

Methods: a 61-year-old patient, in follow-up for a oral GHVD, visited the Oral Medicine Section at the CIR Dental School of Turin complaining about a rapid-growing enlargement on the dorsum of the tongue, noticed a month ago.

His medical history was significant for hypertension and T-prolymphocytic leukemia, diagnosed and treated with a bone marrow transplant in 2009. The clinical examination revealed an erythematous and pedunculated nodule with non-ulcerated surfaces. Considering the aspect of the lesion, our first diagnostic hypothesis was pyogenic granuloma.

Results: an incisional biopsy was performed, which showed invasive keratizing squamous carcinoma (G2). Massive TC maxillo-facial-nek-chest didn't show any secondary localizations. The patient will undergo total excision of the lesion in the otolaryngology department.

Conclusions: sometimes oral cancer may present classical clinical benign features, easily misunderstood.

Therefore, it's mandatory histological analysis to provide the patient with the correct diagnosis and adequate treatment. Furthermore, considering the higher risk to develope oral cancer, a strict follow-up is recommended for patients with GHVD.