

IDIOPATHIC GINGIVAL ENLARGEMENT IN A CAUCASIAN MAN WITHOUT RISK FACTORS: A CASE REPORT

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Aim: gingival enlargement may be associated to a multitude of causes, such as drug assumption, systemic factors or genetic syndromes. Aim of this paper is to report a case of idiopathic gingival hypertrophy in an adult man without any risk factors.

Methods and Results: a 48-years-old Caucasian man was visited at the Oral Medicine Department of the Policlinico A. Gemelli, referring tooth mobility and gingival swelling. Medical history was non-contributory. The clinical examination revealed a generalized gingival enlargement. Blood count excluded any hematopoietic diseases; thus, an incisional biopsy was performed, revealing an a-specific gingival inflammation with an infiltrate rich in plasm-cells. Non-surgical periodontal therapy was performed, together with a systemic (methylprednisolone 16

mg) and topic (betamethasone local injections) corticosteroid therapy without any improvement. Finally, the laser surgical excision of the gingival tissue was performed. The lesions did not recur at the 12 months follow-up. Thus, a diagnosis of "idiopathic gingival hypertrophy" was finally settled.

Conclusions: the differential diagnosis was complex and required the exclusion of several systemic diseases such as neoplastic conditions -leukemia or lymphoma- and rarer disorders such as hereditary gingival fibromatosis, inflammatory pseudotumours and IgG4-related diseases -a rare chronic immune-mediated fibro-inflammatory disorder that may have isolated or multi-organ manifestations characterized by swellings mimicking malignant, infectious, and inflammatory diseases.

AN UNUSUAL CASE OF LANGERHANS CELL HISTIOCYTOSIS IN AN OLD WOMAN

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Aim: Langerhans Cell Histiocytosis (LCH) is a rare disorder characterized by intense and abnormal proliferation of bone marrow-derived immature myeloid dendritic cells-Langerhans cells in several organs. LCH commonly occurs in children with a male predilection. Birbeck granules and positive immunohistochemistry for S100 and CD1a are the histological features of LCH. The aim is to describe an unusual case of LCH in the oral cavity in an old woman.

Methods: a 69-year-old female patient came to our observation complaining of pain, burning sensation and swelling situated in the posterior hard palate over the past two months. Medical history revealed diabetes insipidus. Intraoral examination revealed erythematous ulcerated lesions in the posterior hard palate bilaterally. The lesions were flat, with an uneven surface

and painful to palpation; no tooth mobility was observed. Orthopantomography showed no bone destruction areas. Cold blade incisional biopsy was performed, and one specimen was taken on each side.

Results: histological examination evidenced diffuse infiltration by of immune-positive histiocytoidal elements for S100, CD1a, Langerin and CD68 (-/+). According to these findings, the patient was diagnosed with LCH.

Conclusions: our case is an example which proves that LCH is not only confined to the pediatric age group but also occurs in adults. It is important to highlight how the clinical and radiographic manifestations are unusual to the general characteristics of LCH: the patient is female, typical signs such as dental mobility and radiological signs of bone destruction are absent.

A RARE CASE OF ORAL MYOFIBROSARCOMA IN A YOUNG PATIENT

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Aim: oral myofibrosarcoma (MFS) is an exceedingly rare malignant tumor which originates from myofibroblasts. It can occur at any age, including the first decades. MFS are infiltrative tumors, arising in soft tissues or bone, with a predilection for head and neck region. Low-grade MFS can recur but rarely metastasize. Here we report a case of I MFS of the hard palate in a young male patient.

Methods: a 10-year-old male, was referred to the Department of Oral Medicine and Surgery of the University of Parma for a nodular, ulcerated and painful lesion of about 2x3cm, localized in the midline of the palate. Systemic diseases and medications were disclosed at anamnesis. According to parents' report, the lesion occurred about 2 weeks before. Epistaxis was observed at extraoral examination. CT scans showed a reabsorption of the cortical bone of the pa-

late and extension beyond the floor of nasal cavity. An incisional biopsy was performed.

Results: histological examination highlighted the presence of a population of possibly malignant fusate cells with mild atypia. Also on the basis of immunohistochemical evaluation, a probable diagnosis of myofibrosarcoma was rendered. The patient was referred to the Section of Maxillofacial Surgery of the University Hospital of Parma where the lesion was removed. A reconstruction of the palate was performed through the use of a re-vascularized free-flap from the forearm. No recurrence has been observed after an admittedly short follow-up time of one year.

Conclusions: rapidly growing masses on the palate should be promptly diagnosed, as they can, in some cases, be malignant tumors originating from connective tissues (e.g. fibrous or bone tissues), salivary glands and lymphoid adnexes.

PECULIAR ONSET OF A MIESCHER CHEILITIS: A CASE REPORT

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Aim: we would like to present a particular case of Miescher cheilitis (MC) and to perform a small review of the literature.

Methods: a 95-year-old man came to our attention with a recurrent non-painful swelling of the lip from about 5 months (4 episodes). Previous test ruled out allergic reaction. He told us he had received Sars-Cov-2 vaccination about 3-4 days earlier from the first episode. We suspect a MC maybe triggered by the vaccination. We prescribed topic corticosteroids twice a day for 7 days. For the review we used Google Scholar and PubMed. We chose articles in English published in these last 10 years. We used as keywords "Granulomatous Cheilitis", "Miescher Cheilitis", "Orofacial Granulomatosis".

Results: after topical therapy we noticed a complete resolution of the lip granulomatosis. MC is a rare chronic inflam-

matory disease of unknown aetiology affecting oral and facial tissues. It can also present as a monosymptomatic form of Melkersson-Rosenthal Syndrome, defined by edema of the lips, facial palsy and fissured tongue. First described as a single entity, in 1985 MC was included in Orofacial Granulomatosis group, encompassing non-well understood granulomatous processes to the soft tissues of the head-and-neck. It shows clinically as a recurrent, non pitting and not of hard consistency lip swelling with rapid onset. The patient does not claim pain unless it coincides with sores or erythema. The first attack usually lasts less than a day, then it can flare up with episodes of longer duration and more pronounced.

Conclusions: we assume our patient suffers from MC.

ORAL BACTERIA GENOMIC RATE IN BLACK HAIRY TONGUE TISSUES, A NEW LABORATORY APPROACH

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Aim: Black Hairy Tongue (BHT) is a benign condition, characterized by hypertrophy of filiform papillae due to the lack of adequate desquamation of keratin and discoloration of the dorsum (black, brown, yellow, green), this is the result of porphyrin-producing chromogenic bacteria or yeasts. The prevalence of BHT may be as high as 11.3% with three times increased rates in men. In this work, we speculate that the particular BHT tissue structure could modify the microbiota in the tongue body. For this reason, we have compared the periodontal bacteria titer in BHT and normal tongue tissue.

Methods: a 55-year-old male patient with a black hairy tongue with 6 mm of filiform papillae length was enrolled in this study. He not used antibiotics within a month preceding sampling, and mouthwashes for two days before. Nine different tongue

swab samples were collected by scraping the tongue dorsum with a cytobrush. Three were sampled in BHT tissue and six in the tongue normal epithelia. The DNA extract from each sample was performed to detect e quantify by real-time qPCR: *P. gingivalis*, *T. forsythia*, *T. denticola*, and *F. nucleatum*.

Results: among these anaerobic bacteria, *T. forsythia* showed a significant difference ($p < 0.01$) between normal and BHT tissues. In fact, the titer of this periodontal pathogen increased 36 folds in the tongue body center. In addition, we have observed a gradual decrease of *F. forsythia* from the dorsum (in BHT zone) to the tip.

Conclusions: these preliminary results suggest that BHT could be an unusual reservoir of some periodontal pathogens, this could be due to different oxygen rate along its tissue surface.

GIANT FOLLICULAR CYST WITH MAXILLARY SINUS AND PTERYGOMAXILLARY EXTENSION: A CASE REPORT

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Aim: follicular cysts are odontogenic cysts of epithelial origin associated with an impacted tooth. Cysts around the upper third molar are less frequent than those around the lower third, but their complications in the antral/orbital areas are not rare. They are often asymptomatic and diagnosed accidentally. The paper wants to describe the characteristics of a giant follicular cyst with antral and pterygomaxillary extension associated with an included upper third molar.

Methods: a 76-year-old woman presented to our observation for an osteolytic neoformation of the right upper maxilla. The patient reported right V2 paraesthesia, sinusitis, purulent rhinorrhoea and swelling. The intraoral examination shows expan-

sion of the buccal cortex with obliteration of the buccal vestibule. OPT showed unilocular radiolucency involving the right maxillary sinus along with the impacted third molar on the floor of the maxillary sinus. The lesion was surgically removed with the included tooth.

Results: at 4-months, healing of the bone and mucous tissues is evident. Microscopically, fragments of fibrous connective tissue are covered by non-keratinizing compound pavement epithelium, without atypia.

Conclusions: enucleation is the elective treatment. Radiographic examinations are needed for preoperative evaluation. The histological diagnosis is conclusive.

LONG-TERM SUCCESS IN A CASE OF OLP TREATED WITH PDT REFRACTORY TO CONVENTIONAL THERAPIES

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Aim: Lichen Planus (LP) is a chronic inflammatory disease involving skin and mucous membrane, with a neoplastic evolution rate of 1.40%. The most widely administered therapy is corticosteroid drug; however, its long-term use can lead to the onset of adverse effects such as candidiasis, dysgeusia and inhibition of the hypothalamus-pituitary-adrenal axis. Photodynamic therapy (PDT) is a non-invasive therapy, based on the local application of a photosensitizer, which absorbs light of the appropriate wavelength, initiating the activation processes that lead to the selective destruction of the injured cells. Therefore, the aim of the present work is to illustrate a case of refractory OLP with risk of tongue cancerization to both topical and systemic steroid treatment with PDT.

Methods: a 57-year-old woman presented to our observation for suspected lingual carcinoma arising from erosive lesions from

OLP. Anamnesis was also positive for Hashimoto's thyroiditis. The patient underwent immunosuppressive therapy with tacrolimus and systemic corticosteroids without any improvement and reported pain equal to 10 on the VAS scale. PDT was performed with LED at 450-470 nm and 7 watts of power, combined with 3% H₂O₂+*Curcuma Longa* based photosensitizer. 10 sessions of PDT were performed, once a week. Each session included 20 spots of 3 second on each mucosa involved, with particular focus on the lingual one. The light has been emitted by a long blunt tip of 8 mm at a distance of 0.5 cm from the lesion.

Results: after only 8 sessions the lesions underwent complete healing with a significant reduction in the VAS scale.

Conclusions: this case confirms that PDT is a valid alternative therapy for OLP without side effects in refractory cases to conventional therapies.

RARE MANDIBULAR OSTEOLYTIC LESION PRESENTING AS AN INITIAL MANIFESTATION OF ACUTE MYELOID LEUKEMIA

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Aim: the present work reports a rare case of early mandibular osteolytic lesion associated with Acute Myeloid Leukemia (AML).

Methods: a 7-year-old patient reported mandibular pain, gingival bleeding with no history of trauma and weakness before hospitalization. Radiographic examinations showed an osteolytic lesion at the left mandibular angle. Intraoral examination revealed no petechia or sign of infection, element 36 had lingual tilt, lack of mobility and pericoronal swelling. A needle biopsy was performed, and blood count revealed anemia and thrombocytopenia. Microscopy showed a neoplastic proliferation of atypical pleomorphic cells, with vesicular nuclei arranged diffusely and in infiltrative pattern in the fibrovascular background; atypical mitoses were present. The immunohistochemistry revealed positivity for myeloid markers.

Bone marrow aspiration revealed cell hyperplasia with 90% blasts and absence of megakaryocytes. Cytochemical staining with myeloperoxidase revealed 95% positivity, and PAS 41% diffuse positivity. Molecular analysis revealed at (8;21) translocation with AML1/ETO rearrangement. The diagnosis of AML-M2 type was made according to FAB classification.

Results: the patient subjected to the AIEOP LAM 02/01 protocol showed remission of leukemia. Lesion's evolution was valued with CT at the end and three months after chemotherapy. A lesion's progressive reduction, mandibular swelling disappearance and a spontaneous repositioning of the 36 were observed.

Conclusions: the dentist's role is primary in the recognition of signs and symptoms of systemic pathologies that often present early oral manifestations.

ORAL METASTASIS FROM COLON ADENOCARCINOMA: A CASE REPORT OF A RARE CLINICAL MANIFESTATION

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Aim: oral metastasis from adenocarcinoma in an extremely rare clinical manifestation. Aim of this paper is to present a clinical case of this disease in a young subject.

Methods and Results: a 37-year-old woman affected by colon adenocarcinoma was visited at the Oral Medicine Department (Head and Neck Department, “Fondazione Policlinico Universitario A. Gemelli – IRCCS”). The patient had previously received diagnosis of lung, brain, spinal cord and bone metastasis. The patient reported the onset of hypoesthesia of the lower lip and swelling on the gum, associated with the sudden mobility of the right posterior mandibular teeth. The clinical examination confirmed the presence of a swollen lesion, with no ulceration, affecting the vestibular gingiva of the fourth quadrant, vestibular to the second premolar and the first molar, associated with the grade III mobility of the second

premolar. The analysis of the radiographic examination (Orthopantomography and Cone Beam Computed Tomography) showed a radiolucency apically to the first molar and second premolar, associated with root resorption of these elements. An incisional biopsy of the lesion was performed, and the pathology reported the following diagnosis: fragments of adenocarcinoma with mucinous aspects; morphology and immunophenotype compatible with metastatic location with origin from known primary intestinal tumor.

Conclusions: although metastases from colon adenocarcinoma to oral cavity are very uncommon (31 previously reported cases), they should be considered, since many osteolytic lesions are included in the differential diagnosis and the dissemination to the oral cavity might be the first expression of the disease.

RITUXIMAB AS A TRIGGER OF ULCERATIVE LESIONS IN THE ORAL CAVITY

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Aim: Rituximab is an anti-CD20 chimeric monoclonal antibody targeting CD20 antigen in B cells. Rituximab, intravenously, has revolutionized the treatment of malignant tumors of B cells, such as follicular lymphoma. However, during treatment some patients may experience burning mouth and ulcers formation. The aim is to describe a case of oral ulcers caused by rituximab treatment in patients with follicular lymphoma.

Methods: a fifty-four-year-old male patient, in combined treatment with rituximab and bendamustine, came to our observation. The patient reported a burning sensation, with severe spontaneous pain and difficulty drinking and eating. Intraoral examination showed the presence of ulcers, on the anterior portion of the tongue (4 x 1 cm) and at the level of the right re-

trocommissural region (2.4 x 0.7 cm). The ulcers were treated with photobiomodulation-antalgic program (Low Level Laser Therapy), two times/week for one month.

Following a decrease in pain, it was decided to treat the tongue ulcer with an intralesional injection of triamcinolone acetate 0,8 ml (kenacort) and lidocaine 0,2 ml.

Results: at two-week follow-up, after the triamcinolone acetate injection, the lesion was reduced by 50%, resulting in less difficulty for the patient to drink and eat.

Conclusions: a therapeutic approach to solving side effects following rituximab administration in patients with follicular lymphoma should be the subject of scientific investigation, in order to improve the quality of life in these patients.

MEDICATION-RELATED OSTEONECROSIS OF THE MAXILLA BONE DURING SARS-COV-2 PERIOD: A CASE REPORT

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Aim: medication-related osteonecrosis of the jaws (MRONJ) is a rare complication following antiresorptive therapy (ARDs). The aim of this case report is to show the influence that the SARS-COV-2 pandemic had in managing a case of MRONJ.

Methods: an 84 y.o. woman was sent by her dentist to our specialized center "Progetto Bifosfonati - PB", at Fondazione IRCSS Ospedale Maggiore Policlinico, to evaluate a painful maxillary bone exposure extended from 2.3 to 2.5. It was probably caused by the mucosal compression of a poorly adapted total mobile denture. No systemic pathologies and a 10-year long Ibandronate therapy were reported. A CBCT and a maxillofacial surgeon consultation were prescribed in association with local therapies to reduce plaque and pain. Surgical treatment was scheduled for July 2021. Due to the fear of

SARS-COV-2 infection, the patient didn't undergo surgery.

Results: in the pandemic period, the PB follow-up was performed remotely by telephone and pictures. The clinical situation from February 2021 to February 2022 worsened until there was a complete exposure of the maxillary bone with increasing pain and difficulty eating.

Conclusions: osteoporotic patients on ARDs therapy should be cautiously evaluated, especially in the presence of systemic health disorders. This report shows the importance of prevention, diagnosis, and prompt surgical treatment of such complications. In this case, due to pandemic, the patient chose to be followed remotely, resulting in a progression of the present MRONJ. Palliative therapies were used to improve appetite and quality of life.

CEMENTO-OSSEOUS DYSPLASIA IN SOMALI WOMAN: A CASE REPORT

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Aim: the aim of this case report is the correct outpatient management mandibular lesion of mixed aspect.

Methods: a 43 y/o Somali patient was referred to the maxillofacial surgery department of the A.O.U. Città della Salute e della Scienza to evaluate a left hemimandibular neof ormation of hard consistency deforming the two cortexes at teeth 3.3 - 3.4 and surmounted by a mucosa of normal aspect, not painful on palpation. All the teeth apparently involved tested positive to the vitality test. The OPG and the CBCT show both a radiolucent and radiopaque lesion at the apexes of the teeth from 4.3 to 3.5, with a mixed remodeling of the bone structure. This is characterized by a variable hyperdense component surrounded by a hypodense valvulus, which is mainly referable to foci of periapical dysplasia of the cement with variable ma-

turation phase. A similar image can be seen at the teeth 2.1, 2.2 and 2.4. A bone biopsy is performed in region 3.1-3.3 (semilunar incision, full-thickness flap, removal of a bone plug of a 3x3x4 mm, interrupted suture 3-0 silk).

Results: the histological examination shows a morphological aspect of bone dysplasia.

Conclusions: florid cemento-osseous dysplasia mainly occurs mainly in African female patients aged between 40 and 60 years. Usually randomly discovered, it is associated with bone expansion. Both jaws can be affected with multiple localizations. No therapy is indicated and surgical trauma should be avoided being these patients at risk for osteomyelitis, bony sequestrum and the development of intraosseous cyst without an epithelial wall.

COULD SELENIUM REPRESENT A NEW THERAPEUTIC STRATEGY IN PATIENTS WITH EROSIVE ORAL LICHEN PLANUS?

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Introduction: the role of selenium deficiency in the pathogenesis of different oral conditions, such as pemphigus vulgaris and oral lichen planus (OLP), has been already unraveled. For these reasons Selenium has recently been considered as a possible therapeutic approach, based on its antioxidant properties.

Aim: we describe a case report of a patient affected by erosive OLP treated successfully with a topical formulation containing Selenium.

Methods: a 63 year-old female was admitted to the Oral Medicine and Pathology Unit of Ospedale Maggiore (Trieste, Italy) due to referred oral pain (5 out of 10 according to NRS). On oral examination, extensive lesions compatible with OLP were detected. Moreover, some erosive lesions were present especially on the maxillary gingiva and on the buccal mucosa. Using the REU scale to stage oral lesions, we recorded a value of 14.

The patient was prescribed the application of Selenium in Hydrogel formulation 3 times a day for 6 weeks. Two follow up recalls were arranged 3 and 6 weeks later.

Results: at 3 weeks a considerable improvement in both pain and clinic was highlighted: the patient referred a pain score of 1 (NRS scale), while on oral examination OLP lesions were less evident related to a REU score of 5. At 6 weeks the pain referred had a score of 1 (NRS scale), while on oral examination OLP lesions related to a REU score of 4.

Conclusions: the antioxidant properties of Selenium could represent an effective therapeutic alternative for patients with symptomatic OLP. Compared to topical formulations containing corticosteroids, Selenium is also associated with lower risk of developing secondary candidiasis due to its antimicrobial properties.

EOSINOPHILIC ULCER OF THE ORAL MUCOSA

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Aim: Eosinophilic Oral Mucosal Ulcer (EUOM) is a rare, self-limiting oral condition manifesting clinically as an isolated ulcer with elevated hardened margins, yellowish fibrinous background affecting the tongue, buccal mucosa or lip. It can be asymptomatic or associated with mild to severe pain. This lesion must be inserted in the differential diagnosis with traumatic ulcer, neoplasm and infectious diseases. Histologically, granulation tissue and inflammatory infiltrate consisting of abundant polymorphonuclear eosinophils, small round lymphocytes and other inflammatory cells. The aim is to present a clinical case of eosinophilic ulcer of the oral mucosa.

Methods: fifty-year-old male patient, with lesion on the tongue/oral floor for about 1 month, came to our observation. The patient in the medical history reported suffering from

rheumatoid arthritis and being a smoker (2 cigarettes/day).

Clinically showed the presence of an isolated painful ulcer surrounded by a peripheral erythematous halo, raised margins, and a yellowish fibrinous bottom (1 x 1.5 cm). Given the persistence we proceeded with an incisional biopsy.

Results: the histological examination indicates: "keratosis without dysplasia associated with a chronic fibro-inflammatory reaction with eosinophilic granulocytes". The etiology of this lesion is not entirely clear and trauma is believed to play an important role in its development.

Conclusions: biopsy is the gold standard and must be performed to make a differential diagnosis with cancer. Eosinophilic ulcer of the oral mucosa tends to resolve spontaneously within a few weeks.

EFFECTS OF PROBIOTIC MOUTHWASH IN PATIENTS WITH COMPLICATING SYSTEMIC DISEASES

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Aim: probiotics are “good” bacteria able to resist the action of gastric juice and bile secretion and to settle in the intestine by adhering to epithelial cells and thus counteracting the adhesion of some pathogenic germs. Their presence in the intestine would result in a better quality of the intestinal bacterial flora and a possible positive influence on the immune system. The aim of this study was therefore to evaluate the impact on periodontal health, using a mouthwash formulation containing probiotics (Biocult strongâ dissolved in neutral mouthwash).

Methods: 42 patients suffering from complicating systemic diseases including diabetes and cardiovascular disease were selected and the following indices were evaluated at time 0 and at 2 weeks: Plaque Record (PCR) Bleeding on Probing (BOP). The patients were divided into a study group and a

placebo group. A patient food diary was also performed for 3 days.

Results: the following indices were evaluated in the two groups after a statistical analysis. BOP decreased in the study group ($p = 0.15$). CRP also decreased in the study group ($p < 0.01$). After food diary analysis it was found that simple carbohydrates were correlated with BOP in patients who received a positive control, rather than with PM, indicating a lack of influence of food on BOP and PCR in GI.

Conclusions: the treatment with probiotics from the statistical analysis showed a reduction in the indices of periodontal disease. Therefore, probiotics represent a valid aid in maintaining periodontal health but do not replace the normal home and professional hygiene maneuvers.

PLATELET-RICH PLASMA CONCENTRATED SPRAY FOR TREATMENT IN PATIENTS AT HIGH RISK OF BRONJ

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Aim: bisphosphonates are drugs indicated in the treatment of osteoporosis, multiple myeloma and metastatic bone carcinoma. The widespread use of these drugs is related to a complication, known as osteonecrosis of the jaw (BRONJ). The measurement of CTX serum level is an index for evaluating bone turnover and it's been used in oral surgery to assess the risk of osteonecrosis in patients taking bisphosphonates. The aim of this study is to evaluate the efficacy of platelet concentrates for prevention in patients at high risk of BRONJ, since they seem to stimulate healing.

Methods: a patient in therapy with alendronic acid, who needed a full mouth extraction was selected. Serum CTX was performed and a value of 30 pg/mL emerged. Therefore, in collaboration with the hematology clinic, a Platelet-Rich Plasma

Growth Factor Concentrated Spray and an operative prophylaxis was performed. Once the extractions have been carried out, an accurate alveolar curettage was performed and the previously produced platelet spray was applied to the alveolus. Then a resorbable suture was performed.

Results: the 7-day check-up showed complete epithelialization and wound healing, and monthly checks were performed to evaluate and examine possible onset of necrosis. There were no complications even in subsequent checks.

Conclusions: PRF, containing white blood cells in combination with neutrophils and platelets, is able to enhance tissue wound healing, improve angiogenesis, and enhance tissue formation. Therefore, this procedure could be a valuable aid for the treatment in patients at high risk of BRONJ.

IN-VIVO USEFULNESS OF OCT IN THE DIAGNOSIS OF TRAUMATIC, INFLAMMATORY AND MALIGNANT ULCERS

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Aim: optical coherence tomography (OCT) is a non-invasive diagnostic technique providing cross-sectional images of biologic structures based on the differences in tissue optical properties. The aim of this study is to compare the healthy buccal mucosa to the diseased tissue, in order to identify the main ultrastructural changes in the epithelial and subepithelial connective tissue during malignant, inflammatory and traumatic ulcers.

Methods: from October 2019 to January 2021, we selected 27 patients with buccal mucosa ulcers. Each patient had been submitted to a scan and then compared to the histological examination. Previously to perform the biopsy, it was used a variant of a commercial Swept Source OCT dermatological instrument (SS- OCT, VivoSight® Michelson Diagnostics Ltd,

version 2.0) to obtain a scan of the lesion. We detected 5 traumatic ulcers; 15 ulcers caused by Oral Lichen Planus (OLP) and 7 ulcers caused by Squamous Cell Carcinoma (SCC).

Results: compared to healthy buccal mucosa scan, we observed that the lamina propria remained unchanged in the traumatic ulcers, whereas it was hardly to identify it in the OLP ulcers. The basal membrane persisted undamaged in the image of traumatic ulcers while on the contrary it was not observable in case of OLP. Regarding SCC, each layer was not distinguishable anymore.

Conclusions: the OCT can be a dominant aid in the diagnosis of oral diseases, chiefly in ulcerative diseases as a differential diagnostic. However, several *in-vivo* studies are needed to confirm his usefulness.

SURGICAL APPROACH AND MANAGEMENT OF A RARE MANDIBULAR SQUAMOUS ODONTOGENIC TUMOUR

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Aim: Squamous Odontogenic Tumour (SOT) is a rare benign odontogenic epithelial tumour of the jaws, which originates from epithelial rests of Malassez. It can present as an intraosseous solitary or multiple lesions, the development of the neoplasm is asymptomatic, but in an advanced stage the displacement and mobility of teeth can be observed. The neoplastic cells show a squamous differentiation, as numerous islands of squamous epithelium invading connective tissue. SOT radiographically appears as unilocular radiolucency, with clearly defined margins, rarely multilocular. Conservative surgical approach is the gold standard, recurrences are not frequent. The aim of this paper is to describe surgical approach to a rare mandibular case of SOT.

Methods: the lesion, referred in a 29-year-old male, was observed radiographically as radiolucent, involving the adja-

cent teeth and well circumscribed. Clinically the adjacent teeth had increased mobility but were vital on the cold test. Incisional biopsy gave histological finding of SOT, with p40 positive neoplastic cells and 8% ki67 score. Then a complete excision of the lesion was performed under general anaesthesia.

Results: surgical approach was conservative, with enucleation of the entire lesion, from the bone plane and the extraction of the two involved teeth. The patient will be followed up for relapses and to evaluate healing.

Conclusions: even in the presence of benign lesions, an early detection and a sound approach allow avoidance of overtreatment and relapses. Lesion enucleation and extraction of involved teeth seem to be the more indicate approach, for this rare odontogenic tumour.

ORAL MANIFESTATION OF IGG4-RELATED DISEASE

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Aim: IgG4-Related Disease (IgG4-RD) is a systemic immune-mediated condition described by Mikulicz-Radecki in the late 1800s. Potentially affecting any organ, it is characterized by tissue inflammation and fibrotic outcome. It can present with both insidious or acute manifestations and lead to end-stage organ disease if left untreated. IgG4-RD includes a spectrum of clinical manifestations, such as type I autoimmune pancreatitis, retroperitoneal fibrosis, Riedel's thyroiditis, Mikulicz's disease, and hypertrophic pachymeningitis.

Methods: we report a case of a 47-year-old woman with an asymptomatic swelling of the left buccal mucosa, hard to palpation, about 20 mm in size. This swelling presented about 6 months before and was accompanied by the sensa-

tion of paresthesia. Her medical history revealed the presence of multinodular goiter.

Results: histological examination revealed angiolymphoid hyperplasia with eosinophilia; furthermore, there was presence of many plasma cells, in particular IgG and IgG4. The same histological aspect was found in several lymph nodes of the neck, removed together with the thyroid. The patient was treated with systemic steroids.

Conclusions: the oral cavity represents a rare localization for IgG4-RD. However, even when it presents with a single localization in the oral cavity, it should be approached as a systemic disease. Therefore, the most adequate strategy should include clinical, serological, radiological, and histopathological studies assessed by a multidisciplinary team.

BLUE NEVUS OF ORAL MUCOSA: A CASE REPORT

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Aim: Oral Melanocytic Nevi (OMNs) are uncommon benign tumors of melanocytes. They are divided into four main types: subepithelial nevus, blue nevus, compound nevus and junctional nevus. They are mainly diagnosed in subjects over the age of 38, women and mainly on the palate; the most frequent histological type is the common blue nevus whose diagnosis is made after a biopsy. The aim of the present study is to describe a case of a 39-year-old woman with a blue nevus on the hard palate and to compare our data with the literature.

Methods: we searched recent databases including MEDLINE (PubMed) by analyzing the clinical and histological manifestation of OMNs and their pathogenesis. Subsequently, the most suitable diagnostics and the methods of treatment and

follow-up of the affected patients were identified. An excisional biopsy of the 0.3 cm pigmented lesion on the hard palate of the patient was made and sent to the pathologist.

Results: microscopically, a pigmented fasciculate chorion nevus is observed, extended to the margins of resection; immunohistochemical staining "Melan A" has been performed to identify the presence of cells of melanocytic origin. Histopathological diagnosis is Nevus Blue of the oral mucosa.

Conclusions: despite the fact that the blue nevus is a rare lesion on the oral mucosa, its diagnosis is increasing as suggested from various case reports. Our case has the same principal characteristic as the ones reported in the literature: the lesion is found on the hard palate of a 39-year-old woman and the diagnosis was possible only after a biopsy.

OCCASIONAL FINDING OF PROSTATIC CANCER BONE METASTASES IN A PATIENT AFFECTED BY MRONJ

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Aim: Medication-related osteonecrosis of Jaws (MRONJ) is defined as a drug-related adverse reaction, leading to a progressive necrosis of jaw bone in patients not exposed to radiant treatment and with positive history of treatment with drugs impairing bone reactivity. We report a case of MRONJ, characterized by bilateral mandibular osteonecrosis and prostatic cancer bone metastases.

Methods: a 66-years-old male with history of prostatic carcinoma with bone metastases with positive history of parenteral administration of Denosumab, was referred to our department. Panoramic radiograph and Computer Tomography showed bilateral areas of mandibular bone rearrangement. Intraoral physical examination revealed a bilateral painful non-odontogenic origin mandibular bone exposure with suppuration. Firstly, antibiotic and antiseptic therapy were prescribed for about 20 days, not gaining symptoms resolution. Considering the wide and bilateral osteolytic mandibular involvement and

the patient general condition, a marginal resective surgery was performed, in general anaesthesia.

Results: during surgery, bone samples were collected and, at the histopathological examination, bone invasion by prostate cancer was observed as fragments of necrotic bone tissue showed foci of infiltration by poorly differentiated carcinoma, with prostatic immunophenotypic profile, as immunohistochemical analysis showed pan-CK, PSA and NKX3.1 positive neoplastic cells. Surgery was able to solve painful symptoms, leading to an improved quality of life.

Conclusions: surgery is indicated to treat MRONJ, but its usefulness in managing bone metastases is under debate. In the present case, pre-surgical assessments consistent with MRONJ lead to active surgical treatment. We are not able to assess the long-term results of surgery, but it was able to improve the patient's quality of life solving at least temporarily painful symptoms.

ORAL MANIFESTATIONS OF AMYLOIDOSIS: A CASE REPORT

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Aim: amyloidosis includes a group of diseases with extracellular deposition of fibrillar proteins in organs and tissues. Deposition of amyloid can also occur in oral tissues with different clinical forms: bullous, macroglossia, multiple soft nodules of the tongue, lip and buccal mucosa.

Methods: two patients were referred to the Department of Oral and Maxillo Facial Sciences, Sapienza University of Rome for macroglossia. First patient was a 61-year-old male, suffering from type 2 diabetes, chronic renal failure, arterial hypertension and HCV positive was sent from the dental ER. An intraoral examination was performed: macroglossia with displacement of the lower anterior teeth and some bullous forma-

tions on the lingual surface were observed. The second was a 50-year-old male patient with macroglossia and a normal lingual surface sent by a hematologist treating him for monoclonal gammopathy. A scalpel incisional biopsy of the lingual surface was performed on both patients.

Results: the pathology examination using Congo red stain showed extracellular amyloid deposits, confirming the diagnostic suspect of amyloidosis of the tongue.

Conclusions: although amyloidosis of oral cavity frequently occurs as localized disease, patients with macroglossia must be evaluated for systemic amyloidosis or systemic disease i.e. haematological disorders.

PARTICULAR PIGMENTED LESION WITH CHARACTERISTICS OF MALIGNANCY: A CASE REPORT

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Aim: oral pigmentations are common and can be physiological or pathological. Amalgam tattoo (AT), the most common oral pigmentation, is an iatrogenic lesion caused by traumatic implantation of dental amalgam into soft tissue. AT is common and clinically present as isolated blue, grey or black macule on the soft tissues. The diagnosis is usually based on clinical findings associated with presence or history of amalgam fillings removal. Sometimes, biopsy is required in order to exclude neoplastic origin. The aim of this paper is to present a case with atypical clinical characteristics and to reinforce the importance of a correct DD.

Methods: a 41-year-old woman comes to us for a pigmented le-

sion that has been present for 3 months. Intraoral examination revealed a brownish spot (measuring 1 cm) with irregular borders on right upper labial fornix. There are no radiographic signs of amalgam restorations, however, the right maxillary incisors appear devitalized. Nevus, melanoacanthoma and oral melanoma were considered in DD. Biopsy was performed and analyzed.

Results: histologic examination shows no epithelial cell dysplasia. Connective tissue includes blackish interstitial deposits that do not cause an inflammatory response. The diagnosis is AT.

Conclusions: AT can occur in the absence of an obvious cause, so histological diagnosis is crucial.

DIGITAL DENTISTRY FOR DIAGNOSIS OF MAXILLARY MALIGNANCY: A CASE REPORT

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Aim: large radiopacities have a wide range of differential diagnosis: from benign tumor to malignancy. In this study authors report digital aid from pre-operative diagnosis to follow up visits of an asymptomatic, not bleeding, painless, net margins radiopacity maxillary lesion.

Methods: a male patient of 74 years old came to U.O.C. of Odontostomatology of Policlinic of Bari. Digital exams were performed: OPT presented a wide maxillary radiopacity, TC Cone Beam showed a direct communication between oral cavity and nasopharyngeal cavities, RMN to assess entity of relation with nasopharyngeal soft tissue. Finally, was executed an Ultrasonography HD with a dedicated linear probe to evaluate lesion vascularization. Patient was subjected to excisional surgery, after been classified as ASA IV from ane-

sthesiologist. Oral and neck ultrasonography was used every month to detect a possible recurrency, with semestral radiograph images.

Results: histologic exam confirms digital diagnostic hypothesis: squamous cell carcinoma treated with a complete excision. Patient's total removable prosthesis was used as a tray of surgical cement to permit wound healing, then was modified with a conditioning tissue material to rehabilitate functionally and aesthetically this oncological patient. Every follow up ultrasonography shows a remained oral-nasal communication, free from neoplastic recurrency confirmed also by nasal endoscopy.

Conclusions: digital imaging could represent an important help from first pre-operative diagnosis to recurrency detection in oncological patients.

CHRONIC DIFFUSE SCLEROSING OSTEOMYELITIS: WHEN BISPHOSPHONATES ARE THE SOLUTION

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Aim: chronic diffuse sclerosing osteomyelitis of the mandible is a relatively rare disease with an estimated prevalence of 1/200.000. There is no standard treatment protocol, and the management can be challenging and frustrating. Differential diagnosis includes Osteosclerotic dysplasia, Paget's disease and other conditions.

Methods: we present a case of a 44-year-old male patient, referred for chronic facial pain. The patient complained intense nightly pain in the left mandible, which was progressively increasing and required the consumption of pain killers on daily basis. Clinically, there was a slight swelling of the mandibular soft tissue and a palpable increase in volume of the left horizontal ramus. Mouth opening was not limited, and no sensory deficits were found. Odontogenic cause was excluded.

Results: a panoramic radiograph demonstrated a marked homogenous osteosclerosis that extended from the premolar region to the ascending branch. CT scan showed extensive sclerotic changes of the trabecular structure and a thickening with marked periosteal reaction. Histological evaluation showed compact lamellar bone with necrotic areas without signs of bacteria or inflammatory infiltrate. Scintigraphy showed an intense uptake. Blood count and bone turnover markers were within normal ranges, while and C-reactive protein and erythrocyte sedimentation rate were increased.

Conclusions: based on previous studies, treatment options include both conservative and surgical approaches. The patient was treated with systemic antiresorptive therapy with complete remission of symptoms.

NEUROPATHIC PAIN: REVIEW OF LATEST EVIDENCE AND USE OF EMF AS ADD-ON THERAPY CASE REPORT

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Aim: Orofacial Neuropathic Pain (ONP) is a painful condition that develops from damage to the Central Nervous System or trigeminal nerve. The aim of this abstract is to briefly review the latest evidences about the effectiveness of the local administration of Electro-Magnetic Field (EMF) as add-on-therapy. A significant clinical case treated in our Orofacial Pain Center is further described.

Methods: comprehensive search was performed through PubMed, Scopus and WoS. 10 articles out of 1221 were selected. These studies demonstrated that Low-frequency Electro-Magnetic Field (EMF) therapy is safe and noninvasive in the treatment of neuropathic pain disorders. No side-effects have been observed. Such techniques work changing the magnetic fields to increase or decrease neuronal activity.

Results: we verified those scientific evidences by the case of a 61 years old woman affected by ONP since 2015, refractory to common drugs. Pain level was rated 7/10 in a VAS (Visual Analogue Scale). In January 2018, the patient was prescribed with a new nanotechnology-based device delivering constant low-frequency EMF, HO-ONP: a small patch applied 24/24hs on the painful area. After 1-month, symptoms significantly improved. In March pain was rated 1/10 in a VAS. As acquired by scientific literature, analgesic effect of EMF is long lasting: after three years the patient was still free from pain.

Conclusions: further well-designed studies should be made to improve evidence about the promising clinical use of this therapy.

IMMUNOHISTOCHEMICAL DETECTION OF STAT6, CD34, CD99 AND BCL-2 CAN BE A USEFUL MARKER FOR DIAGNOSING

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Background: Solitary Fibrous Tumors (SFT) are a rare neoplastic disease originating from mesenchymal cells rather than epithelial cells. These tumors are characterized by the presence of tumefactions in the oral cavity with non-specific symptoms, capsular, well circumscribed and of elastic consistency; they tend to have a benign course and only in 10-15% of cases take a malignant course. The objective of this study is an update in the literature on the phenotypic, histologic, and behavioral characteristics of solitary fibrous tumors.

Methods: the various studies were researched on sites such as PubMed, Google Scholar, Scopus, Cochrane Central, Embase, CINAHL, Lilacs, Medline, and Web of Science between August 2019 and March 2022. Keywords used were “oral solitary fibrous tumor,” “oral cavity SFT,” “STAT6,” “NAB2-STAT6,” “SFT date,” “oral fibrous tumor”.

Results: 81 publications with a total of 185 cases were considered. Analysis revealed that the most frequent location is the buccal mucosa, with a higher incidence in females. The association of the NAB2- STAT6 genes was confirmed, and three fusion variants NAB2ex2-STAT6int1, NAB2ex6-STAT6ex16, and NAB2ex4-STAT6ex2 were detected. There were only 23 published cases of SFT at the level of the tongue, of which 22 were benign

and 1 malignant lingual SFT is the most frequent malignant form, followed by the palate and sublingual gland. In the chin region, only one case of 0.8 cm size has been reported in a middle-aged woman. A 2021 review that considered 7 surgically removed Solitary Fibrous Tumors found that none presented signs of recurrence. One malignancy case presented multiple recurrences and metastasis to the meninges and lungs. Some features of the tumor may indicate an increased risk of malignant evolution, among them there may be margin infiltration, pleomorphism, hypercellularity, increased mitosis and nuclear atypia.

Conclusions: immunohistochemical (CD34, Bcl-2, CD99 and STAT6) and molecular genetic methods can be used to effectively confirm the diagnosis of SFT. Therapeutically, cases of SFT extending into the infratemporal space can be treated orally to reduce neurological, glandular and hemorrhagic complications. Radiation therapy and chemotherapy have been ineffective, so increasing our understanding of the biological behavior of solitary fibrous tumors allows for better focused treatment options. A promising drug in the treatment of advanced SFT could be Pazopanib, which has reduced toxicity and only easily residue adverse effects such as diarrhea, hypertension and fatigue.

USEFULNESS OF NATURAL BIOACTIVE COMPOUNDS IN ORAL DISEASES OF NEPHROPATHIC PATIENTS

Campolattano V.

Aim: the oral diseases and chronic kidney disease (CKD) are related to each other, in a reciprocal cause/effect relationship. The mechanisms underlying this correlation have not yet been defined. The aim of this abstract is to evaluate the possible correlations between oral diseases and CKD and the possible beneficial effects induced by natural bioactive compounds (NBCs) in CKD patients oral diseases.

Methods: we selected the studies according to research online items of “oral disease” and “chronic kidney disease” and “natural bioactive compounds” in association with “polyphenols” and/or “oral microbiota” and/or “oral inflammation”. The databases used were PubMed and Web of Science up to January 2022.

Results: CKD patients have an increased risk of developing oral diseases compared to the general population. In particu-

lar, CKD patients may present changes in soft tissues, bone tissues, teeth, saliva and exhalation. Furthermore, CKD patients are more susceptible to oral infections. Several *in vitro* and *in vivo* studies suggest that NBCs seem to exert numerous beneficial effects both local, at the level of the oral cavity, and systemic. Among NBCs, the most important are the polyphenols that are able to modulate the oral microbiota composition, to exert an antioxidant, anti-inflammatory and antitumor action, and to counteract the demineralization of the alveolar bone during periodontal disease.

Conclusions: in the light of these evidences, the NBCs could represent a valid adjuvant therapy, in combination with standardized therapy in the management of oral diseases in CKD patients.

THE IMPORTANCE OF SALIVARY BIOMARKERS OF DEMYELINATING AND NEURODEGENERATIVE DISEASES

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Aim: the aim of this work is to highlight the most important findings about salivary biomarkers related to neurodegenerative and demyelinating diseases. We also aim to describe some innovative biosensors able to detect these salivary biomarkers.

Methods: we consulted three different databases (PubMed via Medline, Cochrane and Embase) up to April 2021 and selected the most relevant papers related to the topic. After the selection, we proceeded with the analysis of the studies and we then divided them into five different groups: Alzheimer's disease (AD), Parkinson's disease (PD), Huntington's disease (HD), Multiple Sclerosis (MS) and Amyotrophic Lateral Sclerosis (ALS).

Results: although cerebrospinal fluid is still the gold standard

for biomarkers' detection, saliva analysis is drawing the attention of researchers and several biomarkers have been discovered in saliva (such as amyloid beta peptides for AD or alpha-synuclein for PD). For this purpose, the use of wearable biosensors could allow performing non-invasive, easily repeatable and stress-free analysis, thus increasing patients' compliance, and evaluating the circadian rhythm of the analyzed biomarkers.

Conclusions: the lack of standardized methods and clear ranges still limits the use of salivary biomarkers in clinical practice, but their potential future applications are broad and stimulate further research in both technological and clinical fields.

ORAL CANCER DETECTION AND SALIVARY BIOMARKERS: A REVIEW OF LITERATURE

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Aim: the main goal of this study is to present an overview of literature regarding the importance of salivary biomarkers of oral cancer and their detection through biosensors.

Methods: two databases (PubMed and Google scholar) were searched up to June 2021 to find the related articles using the search string: "oral cancer" AND "biomarkers" AND "saliva" OR "salivomics". Second research was carried out to pick out biosensors and bioelectronic platform for the detection of oral cancer biomarkers in saliva.

Results: oral cancer is the 16th most common malignancy which numbers are rising due to an increase in alcohol and tobacco consumption, an early diagnosis is crucial for reducing

mortality. A readily available fluid, such as saliva, could allow stress-free, rapid and non-invasive analysis thanks to bioelectronic platforms. More than 100 potential salivary biomarkers for the early detection of oral squamous cell carcinoma (OSCC) have already been detected: among these there are tumor cells, microRNA and Cell Free DNA. However, the lack of clinical validation and of a specific disease biomarker limit their application. For the time being there are no salivary biomarkers routinely used in clinical practice.

Conclusions: future specific studies are required to evaluate the biological and technical variability related to salivary biomarkers and to implement them in the diagnosis of OSCC.

OSTEONECROSIS OF THE JAWS RELATED TO NON-ANTIRESORPTIVE DRUGS: A SYSTEMATIC REVIEW

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Aim: the aim of this systematic review is to evaluate the characteristics of Medication-Related Osteo-Necrosis of the Jaws (MRONJ) not related to antiresorptive drugs and its differences with MRONJ related to antiresorptive drugs.

Methods: this systematic review was conducted following the PRISMA guidelines. Electronic search was conducted using the PubMed, Ovid Medline and Cochrane databases and was limited to human and English-language studies. Case series, cohort studies and clinical trials were included as study designs. Systematic reviews of literature, editorials and letters to the editor were excluded.

Results: after full-text analysis, a total of 55 articles were eligible for inclusion in this systematic review. The studies described 69 cases of MRONJ not related to antiresorptive drugs in 67 patients. MRONJ equally occurred in both genders, at a

mean age of 61.2 years. The predominant diseases were breast cancer (11,6%), renal cell carcinoma (10,2%) and rheumatoid arthritis (8,7%). MRONJ development was mainly associated with bevacizumab (21,7%) and aflibercept (7,3%) administration. Stage II had the highest occurrence (46,4%). The mandible was affected in the majority of cases (72,5%). Pain associated to MRONJ was reported in 68,1% of cases. The main triggering event was dental extraction (42%). In 53,6% of cases patients recovered completely and the mean healing time was 6.6 months.

Conclusions: an increasing number of patients, particularly cancer patients, appears at risk of developing MRONJ associated with non-antiresorptive drugs, although with a better prognosis and a shorter healing time. Pain and swelling represent an important index for the early diagnosis of the disease.

A NON-INVASIVE MOLECULAR TEST FOR PERIODICAL MONITORING OF ORAL CANCER TREATED PATIENTS

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Aim: no clinically validated tests for early detection of recurrence during the follow up after Oral Squamous Cell Carcinoma (OSCC) treatment currently exists. In the present study we applied 13-gene DNA methylation analysis from oral brushing at different timepoints during the oncologic follow-up of these patients. Aim of this study was to assess the prognostic role of our procedure in the periodical monitoring of OSCC treated patients.

Methods: 74 patients surgically treated for OSCC were enrolled in the present nested case-control study. Baseline brushing samples were collected after 4-10 months from OSCC resection surgery. Subsequent samples were collected at intervals of 4-10 months, unless relapse or death occurred. Quantitative DNA methylation level of a 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: 19 secondary events occurred in the population study in a mean follow-up period of 19 ± 11.3 months. 13-gene DNA methylation analysis detected all positive scores in 24/74 patients, all negative scores in 26 patients and mixed scores (both neg. and pos.) in 24 patients. As compared with patients who tested negative, those testing positive and mixed had ~19-fold (OR = 18.7, $p < 0.001$) and ~8-fold (OR = 7.9, $p = 0.04$) increase in likelihood of relapse respectively. Among relapse cases, 17/19 tested positive before occurrence.

Conclusions: data of the present study suggest a potential role of our procedure as a surveillance tool for patients treated for OSCC.

ITALIAN PATIENTS WITH ORAL LICHEN PLANUS: A CROSS-SECTIONAL STUDY FROM THE SIPMO

SIPMO (Italian Society of Oral Pathology and Medicine)

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Aim: Oral Lichen Planus (OLP) is an immune-mediated inflammatory chronic disease of the oral mucosa, with different patterns of clinical manifestations. The aim of the study was to analyze the differences in the clinical and psychological profile of keratotic oral lichen planus (K-OLP) and non-keratotic oral lichen planus (nK-OLP) patients from the North vs Central-South regions in Italy.

Methods: OLP patients were recruited in 15 Italian universities joined with the Italian Society of Oral Pathology and Medicine (SIPMO- Società Italiana di Patologia e Medicina Orale). The Numeric Rating Scale (NRS), Total Pain Rating Index (T-PRI), Hamilton Rating Scales for Depression and for Anxiety (HAM-D and HAM-A), Pittsburgh Sleep Quality Index (PSQI), and Epworth Sleepiness Scale (ESS) were administered.

Results: a total of 540 participants were included, 270 OLP patients from the North Italian area and 270 OLP patients from the Central-South. Both groups were equally composed of 135 K-OLP and 135 nK-OLP patients. The Central-South K-

OLP (CS-K-OLP) patients reported a higher frequency of pain/burning compared with the K-OLP patients of the North (N-K-OLP) (NRS and T-PRI p-values < 0.001). The CS-OLP patients showed higher levels of anxiety, depression and a poor quality of sleep compared to the Northern patients (HAM-D, HAM-A, PSQI, p-value < 0.001). Regression analyses revealed that the NRS and T-PRI showed the greatest increase in the R2 value for the CS-K-OLP (DR2 = 9.6 %; p-value < 0.001**); DR2=9.7% p-value < 0.001; respectively) and that the oral symptoms and PSQI showed the greatest increase in the R2 value for the CS-nK-OLP (DR2 = 5.6 %; p-value < 0.001; DR2 = 4.5 % p-value < 0.001).

Conclusions: OLP patients from the Central-South regions present higher levels of pain and a greater impact of mood disorders compared to patients coming from the North. Clinicians should consider that the geographical living area may explain the differences in oral symptoms and psychological profile in OLP.

SEXUAL DESIRE IN BMS FEMALE PATIENTS: A CROSS-SECTIONAL STUDY

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Aim: the aim of this study is to investigate sexual desire in women with Burning Mouth Syndrome as compared to general female population.

Methods: a cross-sectional study with BMS patients and healthy controls was performed. Patients were investigated through physical examination and routine laboratory tests. We evaluated pain through Numeric Rating Scale (NRS) and Total Pain Rating Index (T-PRI), anxiety and depression through Hospital Anxiety and Depression Scale (HADS-A/D), sleep disturbances through Pittsburgh Sleep Quality Index (PSQI) and sexual desire using Sexual Desire Inventory (SDI).

Results: a total of 50 BMS sexually active premenopausal women (mean age: $45,68 \pm 6,70$) and 50 healthy controls (mean age: $44,56 \pm 7,10$) were enrolled. Compared with the controls, BMS

patients showed higher scores in the NRS ($7,81 \pm 1,71$ vs $0,14 \pm 0,40$; $p < 0.0001$), TPR-I ($10,50 \pm 4,86$ vs $0,36 \pm 1,06$; $p < 0.0001$), HADS-A ($11,86 \pm 2,85$ vs $3,90 \pm 2,81$; $p < 0.0001$), HADS-D ($8,04 \pm 3,18$ vs $1,42 \pm 1,86$; $p < 0.0001$) and PSQI ($9,04 \pm 2,62$ vs $4,64 \pm 3,27$; $p < 0.0001$). As for SDI, the mean global sexual desire score in BMS women was significantly lower compared to controls ($32,36 \pm 14,45$ vs $69,70 \pm 19,94$; $p < 0.0001$). In BMS group, no correlation was found between SDI and other items explored.

Conclusions: anxiety, depression and sleep disturbances are more common in BMS patients. The reported data demonstrate, for the first time, an association between BMS and sexual dysfunction with a lower global, dyadic and solitary sexual desire in BMS females compared to controls. Further studies are needed to corroborate our results.

ELISA TEST VS MODIFIED NIKOLSKY'S SIGN IN ORAL AUTOIMMUNE DISEASES DIAGNOSTIC PATHWAY

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Aim: the aim of this study was to compare the efficacy of modified Nikolsky's sign and ELISA test in patients with oral vulgar pemphigus (PVO) and mucous membrane pemphigoid (PMM).

Methods: 6 patients with a clinical diagnosis of oral autoimmune vesiculobullous diseases were enrolled. Modified Nikolsky's sign was performed: it consists of rubbing in the perilesional area with a blunt tool and insufflation of air at low pressure. If the bulla roof rises, the test was positive. Then, patients underwent for ELISA test and a sample for histological examination and direct immunofluorescence.

Sensitivity, specificity, negative and positive predictive value (VPN and VPP), accuracy and Choen's k of both analyzed methods were calculated.

Results: twenty-three patients (57,5%) were positive for Nikolsky's sign.

Modified Nikolsky's sign showed: sensibility of 84,6%, specificity of 92,9%, VPP of 95,7%, VPN of 76,4%, accuracy of 87,5%. Choen'K was 0,73: good agreement.

ELISA test showed: sensibility of 57,7%, specificity of 92,8%, VPP of 93,7%, VPN of 54,2%, accuracy of 62,5%. Choen'K was 0,43: modest agreement.

Conclusions: modified Nikolsky's sign can be useful in the early evaluation of PVO and PMM. This test is not expensive, minimally invasive, repeatable and easy to perform. Therefore, its execution should be encouraged in the routine dentist practice.

PAIN CATASTROPHIZING IN BURNING MOUTH SYNDROME PATIENTS

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Aim: burning mouth syndrome negatively affects patients' QoL. The pain catastrophizing (PC) influences experience and intensity of pain. The aims of this study were: i) to assess the level of PC, anxiety, depression and sleep disturbances, and ii) to evaluate the correlation between pain intensity and PC.

Methods: patients undergone clinical interview, oral inspection, laboratory tests and fill out the following questionnaires: Numeric Pain Rating Scale (NPRS), Total Pain Rating Index (T-PRI), Hospital Anxiety and Depression Scale (HADS), Pittsburgh Sleep Quality Index (PSQI), Pain Catastrophizing Scale (PCS).

Results: a total of 50 female BMS patients were recruited. The average age was $45,68 \pm 6,70$ years. The majority of patients showed high score in NPRS ($7,73 \pm 1,70$) and TPRI ($10,50 \pm$

$4,80$). Pathological scores were found in HADS-A ($11,54 \pm 2,94$), HADS-D ($8,04 \pm 3,18$) and PSQI ($9,04 \pm 2,63$). To regard PCS, the mean score was $25,70 \pm 10,69$. There were no significant correlations between PCS and other outcomes.

Conclusions: BMS is associated with alterations in the psychological profile (Anxiety, Depression, Sleep disturbances). There are no data about the patients' response to pain, such as PC. In our study group, high PC scores were found higher value was independent of pain intensity and other potential confounders, such as mental health and sleep disturbances, and can affect mental status and sleep. PC could also affect therapeutic results. Further studies are needed to investigate other possible correlations of PC in BMS patients and its therapeutic implications.

CAN PREVENTIVE DENTAL INTERVENTIONS REPRESENT POTENTIAL TRIGGERS FOR MRONJ ONSET?

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Aim: Medication-Related Osteonecrosis of the Jaws (MRONJ) is a serious adverse drug reaction in patients taking bone modifying agents, and major clinical research efforts are dedicated to the development of effective preventive measures and protocols. The aim of this retrospective study is to define whether preventive dental interventions may represent potential triggers for MRONJ onset.

Methods: the study included patients candidate to antiresorptive therapy with bisphosphonates or denosumab, referred at the University of Trieste Dental School who underwent a preliminary dental evaluation and preventive interventions.

Results: among 305 subjects included, 15 developed MRONJ (4,92%). Age, gender, underlying disease and type of medication were not associated significantly to an increased risk of

MRONJ. Preventive extractions ($p = 0.03062$; OR 3,17), the type of preventive protocol ($p = 0.0419$) and extractions during therapy at risk ($p = 0.0001291$; OR = 10,49) were significantly associated variables. All MRONJ cases caused by preventive extractions were related to a post-extraction waiting time ≤ 4 weeks.

Conclusions: although the importance of maintaining oral health is not questionable, there is need for a better definition of indications for tooth maintenance or extraction in the preventive phase. Time between preventive extractions and initiation of the therapy at risk seems to be of crucial importance to minimize risk for early MRONJ onset. Our results may represent an interesting point of view to be taken into consideration for further improvement of present guidelines.

SYNCHROTRON PHASE CONTRAST μ -CT: AN IMAGING METHOD FOR ORAL CANCER MICROENVIRONMENT STUDY

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Aim: the study aims to set up a protocol analyzing the 3D organization of the tumor stroma of oral tongue squamous cell carcinoma (OTSCC) surgical samples by Synchrotron Phase Contrast μ -CT to evaluate the tumor microenvironment (TME) rearrangement.

Methods: the study included 4 primary OTSCC surgical specimens selected from the archive of Institute of Pathology, Marche Polytechnic University, Italy, and stratified according to the pathological staging. A cylindrical section was carried out from each block of each sample from the most invasive area with the highest percentage of desmoplastic stroma. The high resolution (900nm) μ -CT was performed at the SYR-MEP beamline, ELETTRA Synchrotron Facility, Trieste, Italy. The collagen specific volume (ColIV/TV), the anisotropy degree index (DA), the connectivity density (Conn.D), and the

fractal dimension (FD) of peritumoral stroma were morphometric evaluated by the DragonFly 2022.1 Software, using the “Frangi 3D” filter to highlight the preferential orientation of collagen bundles.

Results: advanced OTSCCs showed a lower ColIV/TV, DA, Conn.D, and FD compared to early OTSCCs, suggesting a gradual decrease of collagen bundles organization and the impairment of physiological structural function and morphological integrity during the cancer progression.

Conclusions: these preliminary data provide a significant contribution to understand the TME rearrangements of OTSCC. The μ -CT provide to reliably reconstruct the 3D organization of connective stroma during the malignant tumor progression and invasion and its linking with neoplastic epithelial cells, offering a new methodology for the study of the TME.

IMPACT OF COVID-19 PANDEMIC ON THE EARLY DETECTION OF ORAL CANCER: A SINGLE CENTER STUDY

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Aim: the outbreak of SARS-CoV-2 pandemic has challenged healthcare systems across the world and hindered many cancers screening services. This situation also affected oral cancer patients preventing their access to health care screening services and specialistic cares. The study aims to retrospectively evaluate the impact of the SARS-COV-2 pandemic on the early detection of oral squamous cell carcinoma (OSCC) in relation to the different phases of the pandemic, comparing the results with the data referring to the same period of the previous year.

Methods: all patients subjected to biopsy for oral lesions from 01/01/19 to 30/04/21 were included in the study and a “pre-pandemic period” (01/01/19-23/02/20) and “pandemic period” (24/02/20 to 30/04/21) were considered. The latter was further divided into time intervals corresponding to the various “wa-

ves” to assess the impact of the pandemic on diagnostic activity. Differences among groups were established by Chi-square and Fisher exact tests. A $p < 0.05$ was accepted as statistically significant.

Results: a total of 805 of oral biopsies were included and a 107 OSCCs and in-situ carcinoma were diagnosed. The total number of oral biopsies performed during the first “wave” and the respective interval of the previous year results statistically significant (38 vs 140; $p < 0.05$). However, the number of OSCCs diagnosed in these periods is almost similar (16 vs 12; $p > 0.05$).

Conclusions: although these results must be confirmed by multicenter studies, it is possible to state the impact of the pandemic on early diagnosis of OSCC is strongly linked to the pandemic and healthcare local situation.

IMMUNOISTOCHEMICAL EXPRESSION OF PODOPLANIN IN ORAL LICHEN PLANUS

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Aim: podoplanin has been proposed as prognostic and predictive marker in oral cancer and Oral Leukoplakia. However, only one study evaluated the role of podoplanin in Oral Lichen Planus (OLP). The present study investigated the clinical and histological variables capable of influencing the immunohistochemical expression of podoplanin in patients with OLP.

Methods: sixty consecutive biopsies from patients with OLP constituted the basis of the present study. OLP with podoplanin expression in the suprabasal layer of the epithelium (pattern 2 in Kawaguchi classification) were considered overexpressed. The relationship between Podoplanin overexpression and the following clinical and histological variables: age, gender, smoking habits, site of incisional biopsy, clinical aspect,

number of lesions, lichen classification, degree of dysplasia, previous diagnosis of oral cancer, inflammatory infiltrate intensity was analyzed.

Results: multilevel mixed logistic regression analysis revealed that only presence of dysplasia ($p < 0.05$) and intensity of inflammatory infiltrate ($p < 0.05$) significantly influenced Podoplanin expression in OLP.

Conclusions: the present paper revealed for the first time that Podoplanin expression is influenced not only by presence of dysplasia but also by chronic inflammation. Further investigations will be necessary to evaluate the role of Podoplanin in the inflammatory process and the usefulness as marker to evaluate the risk of malignant transformation in OLP patients.

THE PROGNOSTIC ROLE OF TUMOR BUDDING IN EARLY ORAL TONGUE SQUAMOUS CELL CARCINOMA

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Aim: Oral Tongue Squamous Cell Carcinoma (OTSCC) represents the most common malignancy of the oral cavity. Despite the improvements in prognostic stratification of the current staging system, personalized treatments are still not used in the clinical practice. Accumulating evidence suggested tumor budding (TB) is a reliable prognostic factor in OTSCC. However, a standardized scoring system is still necessary to improve assessment replicability and interobserver agreement. The study aims to evaluate the prognostic role of TB in 190 early OTSCC patients treated with curative intent at the "Ancona General Hospital", Ancona, Italy, between 1997-2018.

Methods: TB was evaluated on haematoxylin and eosin-stained sections in the hotspot area of the tumoral infiltrative front under $\times 200$ magnification. TB was scored as a continuous variable and using the two-tier system proposed by Wang et al.

(cut-off:5buds/field). Univariate and multivariate Cox regression analyses of disease-free survival (DFS) were performed. A p -values < 0.05 was considered as statistically significant.

Results: on multivariate analysis, TB resulted an independent prognostic factor of worst DFS, both considering TB as continuous variable ($P > 0.0005$) and using the two-tier system ($P > 0.0005$). High-risk group had a 5.7 times-increased probability of poor DFS compared to low-risk group.

Conclusions: these data confirm the prognostic value of TB in predicting DFS in early OTSCC. Classifying patients in two groups using the 5-buds cut-off significantly discriminates their survival outcomes. The identification of TB as a reliable prognostic marker in early OTSCC could improve the selection of patients could be benefit from elective neck dissection or adjuvant radiation therapy.

DNA METHYLATION PATTERNS ASSOCIATED WITH MALIGNANT TRANSFORMATION OF ORAL LICHEN PLANUS

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Aim: Oral Lichen Planus (OLP) is a chronic inflammatory disease of unknown etiology involving T lymphocytes with cytotoxic activity against the epithelial cells. It belongs to Oral Potential Malignant Disorders (OPMDs) with a transformation rate in Squamous Oral Cell Carcinoma (OSCC) around 1.4%. Purpose of the present study was to analyze methylation levels in a group of 12 OLPs-associated OSCC and in a second group of 25 OLPs that did not develop an OSCC.

Methods: two distinct brushing samples from 12 patients with OLPs-associated OSCC were collected: one on the tumor mass (GROUP 1a) and one on the distant mucosa diagnosed as OLP (GROUP 1b). As control group, one sample from 25 consecutive patients with OLP who did not develop OSCC after 60 months of follow-up (GROUP 2) was collected. The DNA

methylation level of 273 CpGs islands of 15 genes previously described as altered in OSCC (*ZAP70*, *KIF1A*, *LRRTM1*, *PARP15*, *FLI1*, *NTM*, *LINC0059*, *EPHX*, *ITGA4*, *miR193*, *GP1BB*, *miR296*, *TERT*, *miR137* and *PAX1*) was investigated by bisulfite Next Generation Sequencing, according to a previously described method.

Results: CpGs of *NTM*, *miR296*, *miR137* and *ZAP70* showed similar methylation levels in OSCCs (GROUP 1a) and in their respective OLPs (GROUP 1b), whereas a significantly distinct methylation profile was found in OLP group that did not develop OSCC (GROUP 2).

Conclusions: data from this preliminary study identify a specific methylation profile of OLP associated with OSCC. Future investigations will be necessary to evaluate the predictive value of these genes in OLP patients.

ORAL CANDIDA CHANGES DURING FIXED ORTHODONTIC TREATMENT: A SYSTEMATIC REVIEW

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Aim: to evaluate the changes in oral *Candida* colonization during Fixed Orthodontic Treatment (FOT).

Methods: the search for articles was carried out in PubMed, Scopus and Web of Knowledge, including articles published in English until February 2022. The search identified every human study report potentially relevant to the review, applying the search terms “orthodontic” OR “orthodontics” OR “fixed appliance” OR “bracket” AND “Candida” OR “Candidiasis” OR “Candidosis”. After duplicate study selection and data extraction procedures according to the PICOS scheme, the methodological quality of the included papers was assessed by the Swedish Council on Technology As-

essment in Health Care Criteria for Grading Assessed Studies (SBU) method.

Results: the initial search identified 533 articles, 152 of which were selected by title and abstract. After full-text reading, eleven articles were selected. The evidence quality for all the studies was moderate.

Conclusions: according to the SBU tool, this review could draw conclusions with a limited level of evidence. Contrasting results have been reported on the possible increase in *Candida* counts during FOT. However, FOT promotes the oral *Candida* colonisation of non-*albicans* species, although the most prevalent species is *Candida albicans*.

ORAL SQUAMOUS CELL CARCINOMA AND PATIENTS DELAY: A SYSTEMATIC REVIEW

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Aim: Oral Squamous Cell Carcinoma (OSCC) is still one of the most common cancers in the world, with global estimates indicating that there are approximately 354,864 new cases per year. Diagnostic delay is a known factors related to a worst prognosis of OSCC, one of the main causes of delay may be attributed to patient delay. The aim of this research is to analyze those studies relating to patient delay in the literature in order to consider the role of the fear related to OSCC.

Methods: guidelines reported in the PRISMA statement have been followed in order to perform the study. Inclusion and exclusion criteria were applied. In particular, we included studies published in the last 10 years reporting at least 25 patients affected by OSCC and defining the patient's delay (in days or months).

Results: searching through the various databases yielded 179 articles; a total 5 of articles included in this review. The systematic review included 1436 patients. The patient delay ranged from 60 days to 7.4 months with an average diagnostic delay of approximately 3 months.

Conclusions: patient delay, and probably fear, plays a key role in patient's prognosis. This phase of uncertainty, linked to the development of oral lesions of unknown origin, may cause moments of fear in the decision-making processes. The authors believe that awareness campaigns should include the knowledge regarding OSCC and related risk factors, but also consider the role of fear and its impact on patient delay.

IMPACT OF SARS-COV-2 INFECTION AND VACCINATION ON ORAL LESIONS OF IMMUNE ORIGIN: A REVIEW

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Aim: SARS-CoV-2 causes COVID-19, which is characterized by immune dysregulation and production of pro-inflammatory cytokines. This pathogenetic mechanism is common to various lesions that may affect the oral cavity. Moreover, cutaneous and mucosal lesions have been reported after Covid-19 vaccination. This review aims to investigate on the influence of SARS-Cov-2 infection or Covid-19 vaccination on the rise or exacerbation of lesions of immune origin in the oral cavity.

Methods: a literature review was performed in order to identify cases of association between Covid-19 and immune-mediated diseases of the oral cavity. Articles were searched by PubMed, using a combination of "covid-19", "covid-19 vaccination", "lichen planus", "erythema multiforme", "aphthous stomatitis" and "pemphigus" as keywords. Letters to the edi-

tor, case reports and case series were included. Studies without cases reporting an oral involvement were excluded.

Results: aphthous lesions are the most common oral lesions associated with Covid-19. Rare cases of oral lichen planus, erythema multiforme and pemphigus in Covid-19 patients were reported. Cutaneous lesions in conjunction with Covid-19 vaccination were described, sometimes with a mucosal involvement: studies report 5 cases of oral lichen planus, 4 cases of erythema multiforme and 3 cases of pemphigus.

Conclusions: recent articles describe oral lesions of immune origin in conjunction with Covid-19 or following Covid-19 vaccines. The pathogenetic mechanism is unclear and further studies are required to investigate on this possible association. Oral examination should be performed in patients with Covid-19, in order to identify early these lesions.

PROGNOSTIC VALUE OF MIR-155 FOR SURVIVAL OUTCOME IN HNSCC: REVIEW, METANALYSIS AND TSA

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Aim: the head and neck squamous cell carcinoma are among the most common neoplasms; in fact, it is among the top six neoplasms with an incidence of about 370,000 new cases per year. The 5-year survival, despite chemotherapy, radiotherapy and surgery for stages 3 and 4 of the disease, is low. MicroRNAs are a large group of small single-stranded non-coding endogenous RNAs approximately 18-25 nucleotides in length that play a significant role in the post-transcriptional regulation of genes. Recent studies investigated the tissue expression of miR-155 as a prognostic biomarker of survival. The purpose of this systematic review is therefore to investigate and summarize the results in the literature concerning the potential prognostic expression of tissue miR-155 patients with HNSCC.

Methods: the revision was written following the indications of the PRISMA, 3 database PubMed, Scopus and Cochrane databases were consulted through the use of keywords relevant to the topic of the revision, 765 bibliographic references identified, and 8 studies were included in the meta-analyses.

Results: OS, HR = 1.40, 95% CI: [1.13, 1.75]; DFS, HR = 1.36, 95% CI: [0.65 2.83]; PFS, HR = 1.09, 95% CI: [0.53 5.15]; Trial sequencing analysis (TSA) Curve crosses the line $Z = 1.98$ and Crossing of the monitoring boundary before reaching the information size provides for firm evidence of effect. The APIS graph shows that for an RRR of 38% alpha 5% and for a power of 80% the number of optimal patients is 475.

Conclusions: miR-155 could be a promising prognostic biomarker of survival for HNSCC.

PROGNOSTIC VALUE OF MIR-31 FOR SURVIVAL OUTCOME IN HNSCC: REVIEW, METANALYSIS AND TSA

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Aim: among the most common neoplasms, HNSCC is in 6th place with 370,000 new cases per year, the incidence rates vary according to gender with a ratio of 2 to 1 for the male and the survival rate despite the progress of chemotherapy, radiotherapy and surgery is extremely low for the advanced stages of the disease, in fact at 5 years it is 30% (stage 3 and 4) and is characterized by the presence of squamous carcinomatous cells of the multi-layered epithelium lining the oral cavity, larynx, and pharynx. The different expression of miRs can be used as a prognostic biomarker in HNSCC, and the main microRNA proven as a bioindicator described in the scientific literature for HNSCC is miR-21, other microRNAs have been investigated to a lesser extent (miR-99a, miR-99b, miR-100, miR-143, miR-155, miR-7, miR-424, miR-183) but among the-

se the one that has caught the most interest is the miR-31.

Methods: the present systematic review was performed based on PRISMA. A search was carried out in the PubMed, Scopus and the Cochrane databases with the use of keywords. This search produced 721 records and 4 included studies.

Results: the results of the meta-analysis report aggregate HR for OS between high and low miR-31 expression of 1.59 [1.22 2.07], $\text{Chi}^2 = 5.04$ $\text{df} = 3$ ($P = 0.17$) and $I^2 = 40$; $Z = 3.44$ ($P = 0.00006$). The TSA Curve crosses the line Z and Crossing of the monitoring boundary before reaching the information size provides for firm evidence of effect.

Conclusions: the data resulting from the meta-analysis suggest that elevated miR-31 expression could predict a poor prognosis.

RITUXIMAB AND PRP BEFORE MUCOGINGIVAL SURGERY IN A CASE OF RECALCITRANT ORAL PEMPHIGUS

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Aim: Pemphigus Vulgaris (PV) is a blistering disease characterized by the presence of oral/skin erosions and desquamative gingivitis. Oral lesions, often unresponsive to therapy, can increase the risk of periodontitis. Periodontal treatment may be very difficult in the active phase as minimal trauma tends to induce new erosions. Very few data exist regarding surgical management of periodontitis in patients with PV. Additionally, the success of surgical therapy for gingival recessions is unknown. In this case report we describe a case of a recalcitrant PV patient with deep gingival recessions successfully treated with muco-gingival surgery after disease control was achieved.

Materials and Methods: 1 female patient affected by PV and gingival recessions in the lower incisors was enrolled. Previous

therapies for PV with local/systemic corticosteroids and mycophenolate mofetil sorted no effect. Patient was scheduled to receive intravenous rituximab and Platelet Rich Plasma (PRP) topical applications. Scaling and root planing was planned as pre surgical preparation before Coronally Advanced Flap (CAF) in case of PV remission.

Results: the combination of Rituximab and PRP successfully achieved a complete and stable remission of PV lesions. This allowed to successfully perform CAF without PV relapses. Clinical improvement of recessions remained stable at 6 months.

Conclusions: in PV patients, disease control is crucial before considering periodontal surgery. Rituximab and PRP were effective for recalcitrant oral PV lesions allowing the success of mucogingival therapy.

ASSOCIATION BETWEEN PERIODONTITIS AND COGNITIVE IMPAIRMENT IN BMS PATIENTS: A CASE CONTROL STUDY

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Aim: this is the first case-control study which evaluates the periodontal status in BMS patients analyzing differences in three groups differentiated after a cognitive assessment. Secondly, this study evaluates the association between Cognitive Impairment (CI) and periodontal disease in BMS patients.

Methods: 60 patients have been recruited from oral medicine department in Federico II University of Naples. After administering MoCa and MMSE tests for cognitive screening, these patients have been divided into three groups: 20 patients were considered in BMS without cognitive impairment group (MMSE > 26, MoCa > 24), 20 patients in BMS with cognitive impairment group (MMSE < 26, MoCa < 24) and 20 patients as healthy controls. Full periodontal charting has been performed on each subject and also a laboratory examination of a blood sample (TC, LDL, HDL, TG, Folate, Vitamin B12, Vita-

min D3, Hcy) has been analyzed for cases and controls.

Results: the three groups do not show any statistical differences about the sociodemographic profile, consumption of alcohol and smoking status. Comparing periodontal status throughout the staging and grading evaluations, 65% of BMS with CI patients were in 3/4 staging level, while in BMS without CI group it was only the 15% (p: 0.03). In BMS with CI group there were a 50% of grading B and 20% of grading C, while BMS patients without CI have a higher percentage (75%) of grading A.

Conclusions: BMS patients with Cognitive Impairment have worst periodontal status versus BMS patients without Cognitive Impairment. This confirms the association between cognitive decline and alteration in the periodontal assessment. The BMS or the Cognitive Impairment should be considered, also simultaneously, as predictive of periodontitis.

OPTICAL COHERENCE TOMOGRAPHY (OCT) PATTERNS FOR ORAL LEUKOPLAKIA AND LICHEN PLANUS

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Aim: Oral Leukoplakia (OL) and Oral Lichen Planus (OLP) are the most frequent oral potentially malignant disorders, characterized by extreme clinical variability. Optical Coherence Tomography (OCT) has been proposed as valuable diagnostic support, although so far there are no standardized OCT patterns to clinically assess OL and OLP lesions. In this context, the aim of this study was to conduct a critical review of the literature on potential specific OCT patterns for preliminary OL and OLP evaluation.

Methods: the research, updated to January 2022, was performed considering original articles on *in vivo* OCT diagnostic patterns of histologically confirmed OL and OLP in humans.

Results: 6 studies were eligible for a total of 114 OL and 54 OLP cases. Compared with healthy mucosa, the following po-

tentially discriminatory OCT patterns were detected. For OL, OCT showed an increased reflectiveness of the epithelium with a less clearly detectable lamina propria; if dysplasia was present, it was reported a loss of epithelial layers stratification and absence of basal membrane. For OLP, OCT showed a reduction of epithelial thickness with a hyper-reflective sub-epithelial area and poor visualization of basal membrane and lamina propria.

Conclusions: the OCT discriminatory pattern reported for preliminary OL and OLP evaluation should be oriented towards the epithelial thickness and the integrity of lamina propria, respectively. Due to the limited data available, further studies should be conducted to validate these preliminary reports.

SUBCLINICAL CANDIDIASIS AND ORAL MUCOSITIS IN HNC RADIOCHEMOTHERAPY: A LONGITUDINAL STUDY

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Aim: Oral Mucositis (OM) is an early side effect of radiochemotherapy (RTCT) of the Head and Neck district. The aims of this prospective observational study were (i) to investigate a correlation between the presence of *Candida* spp. (OC) in the oral cavity before the start of RTCT and the onset of severe OM (grade 3/4) during RTCT and (ii) between OC and an early development of severe OM (EOM).

Methods: the protocol was approved by the ethical committee of the 'Università Cattolica del Sacro Cuore' (Ref. 22858/18) and was registered on ClinicalTrials.gov (ID: NCT04009161). An oral swab was taken before RTCT to assess the presence of OC.

A severe OM that occurred before the dose of 40 Gy was defined as an EOM.

Results: the final sample included 152 patients. No patients developed G4 OM and only 36 patients (23.7%) showed a G3 OM. Patients with different tumors sites showed different severe OM incidence (χ^2 Test — $p < 0.05$), being nasopharynx the most affected one (9/19 patients; 47.4%). A correlation between the presence of *Candida* spp in the oral cavity and EOM (χ^2 Test — $p < 0.05$) was retrieved. Patients with OC developed severe OM at a mean dose of 38.3 Gy (range: 28-58; SD: 7.6), while patients with negative oral swab developed severe OM at a mean dose of 45.6 Gy (range: 30-66; SD: 11.1).

Conclusions: the presence of OC appears to be a predictive factor for EOM. Thus, a preventive treatment could be useful to reduce its incidence. Further clinical trials are needed to confirm these data.

GUM HYDRAL MOUTHWASH IN THE MANAGEMENT OF RADIOTHERAPY-INDUCED XEROSTOMIA OF HEAD AND NECK CANCER

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Aim: the aim of this retrospective observational study was to evaluate the reduction of patients' xerostomia symptoms due to RT after the utilization of Hydral, by using a modified version of the XQ and to assess the improvement of QoL by using EORTC QLQ-C30 and QLQ-H&N35 questionnaires.

Materials and Methods: the protocol was approved by the ethical committee of the 'Università Cattolica del Sacro Cuore'. (Ref. 22858/18). A retrospective evaluation of the clinical charts of HNC patients attending the Oral Medicine, Head and Neck Department – Fondazione Policlinico Universitario A. Gemelli - IRCCS, was done and the scores of the above-mentioned questionnaires of patients who received a pre-

scription of Hydral Mouthwash to reduce xerostomia symptoms were collected, at baseline and after one month of treatment.

Results: thirty-four patients were included in the final analysis. The modified XQ is the questionnaire which presented, at the end of the study, the more remarkable reduction of the mean score: 10.05% of improvement (ANOVA test, $p < 0.05$). Both the QLQ-C30 and the QLQ-H&N35 questionnaire showed a slight decrease, although not statistically significant.

Conclusions: hydral mouthwash seems to be clinically effective in reducing symptoms related to RT-induced xerostomia. No adverse events were reported in this study.

EVALUATION OF THE ORAL HEALTH STATUS OF A COHORT OF PATIENTS AFFECTED BY GVHD

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Aim: the aim of this prospective study was to examine subjects who have manifested Graft Versus Host Disease (GvHD) post hematopoietic stem cell transplantation (HSCT) to evaluate oral cavity health and salivary glands impairment.

Methods: the severity of oral GvHD was assessed according to the Oral Mucosal Score. Oral health and salivary function parameters were analyzed, respectively: DMFt, BoP, PI, PSR and salivary pH, basal/stimulated salivary flow and xerostomia. Each patient underwent professional oral hygiene (POH) and individual oral hygiene instructions were provided (OHI).

Results: ten patients with a history of HSCT were visited at the Oral Medicine department of Policlinico A. Gemelli between 17/05/2021 and 04/10/2021: 6 patients presented oral GvHD, mostly affecting the tongue and the buccal mucosa. The 90%

of these patients received peripheral blood stem cells transplant. The risk of GvHD was higher if the donor was of the opposite gender than the receiving. The 33% of these patients showed an increase in the extent of the lesions and in the severity of the symptomatology. Xerostomia was present in the 60% of the sample and hyposalivation in the 30%. After 3 months, oral health indices improved after POH and OHI in 90% of patients.

Conclusions: the results confirm what is retrievable from the available literature. Creating a follow up is crucial to monitor primary complications that could compromise the success of the HSCT. Ensuring good oral health is necessary to reduce the incidence of secondary complications of oral GvHD and increase the quality of life.

DECELLULARIZED DENTAL PULP: A NEW TOOL FOR ENDODONTIC REGENERATION

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Dental pulp is a major component of the dental body, contained in the pulp chamber, that serves to maintain the tooth life and function. The aim of the present work was to develop a system that functions as a growth-permissive microenvironment for dental pulp regeneration using a decellularized dental pulp (DDP) matrix, 5-Aza-2'-deoxycytidine (5-Aza), and Extracellular Vesicles (EVs) derived from human Dental Pulp Stem Cells (hDPSCs). Human dental pulps extracted from healthy teeth, scheduled to be removed for orthodontic purpose, were decellularized and then recellularized with hDPSCs. The hDPSCs were seeded on DDP and maintained under dif-

ferent culture conditions: basal medium (CTRL), EVs, 5-Aza, and EVs+-5-Aza. Immunofluorescence staining and Western blot analyses were performed to evaluate the proteins' expression related to dentinogenesis, such as ALP, RUNX2, COL1A1, Vinculin, DMP1, and DSPP. Protein contents found in the DDP recellularized with hDPSCs were highly expressed in samples co-treated with EVs and 5-Aza compared to other culture conditions. This study developed a DDP matrix loaded by hDPSCs in co-treatment with EVs, which might enhance the dentinogenic differentiation with a high potentiality for endodontic regeneration.

THE MOLECULAR MECHANISMS BEHIND C-MYC/HIF-1 α GENE EXPRESSION IN OSCC

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In the current manuscript we evaluated the biological roles and regulatory mechanism of c-myc in the pathogenesis of oral squamous cell carcinoma (OSCC). C-myc is expressed in multiple types of cancer, comprising head and neck squamous cell carcinoma (HNSCC), where it plays a fundamental role in the tumor prognosis and in the self-renewal of tumor stem cells. In the present paper, we found that c-myc, c-jun, Bcl-2, hypoxia inducible factor-1 α (HIF-1 α), vascular endothelial growth factor (VEGF), matrix metalloproteinase-9 (MMP-9), ERK and p-ERK were overexpressed in a cellular model of squamous cell carcinoma, Cal-27. Cal-27 cells treated with Doxorubicin (Doxo), a

common chemotherapeutic agent, inhibited cell invasion, hypoxia, angiogenesis, inflammation as indicated by downregulation of MMP-9, VEGF, ERK and p-ERK as well as promoted apoptosis as evidenced by downregulation of Bcl-2 protein. This work aimed at underlying the functional relevance of c-myc in OSCC and in the HIF-MYC collaboration by integrating the knowledge on this molecular link in OSCC tumor microenvironment. The results obtained evidenced for the first time the vital role of c-myc in Cal-27 in cell survival/proliferation and tumor growth as well as the inhibitory effect of Doxo downregulating the signalling pathway activated by c-myc.

MRNA COVID-19 VACCINE AND ORAL LICHEN PLANUS: A CASE REPORT

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Aim: the present case report aimed to describe the onset of oral lichen planus (OLP), following anti-COVID-19 vaccination with Comirnaty.

Methods: in June 2021, a 40-year-old male complained the appearance of bilateral lesions in buccal mucosa, one month after the second dose of Comirnaty vaccine. The patient underwent intraoral exam, appropriate hematochemical tests and an incisional biopsy, on the most significant area of the lesions.

Results: clinical examination revealed a good oral hygiene, two dental amalgam fillings on the upper first molars and the presence of keratotic reticular patches and erythematous and erosive lesions on the buccal mucosa of both cheeks, suggesting the diagnosis of OLP; however, laboratory tests resulted negative, while histopathological findings were suggestive of

OLP. The amalgam fillings were replaced, and a follow-up was scheduled. No clinical improvement of the oral lesions was observed after 6 months, excluding the possibility that amalgam could represent the causative antigen.

Conclusions: considering the immune-mediated pathogenesis of OLP, it may be hypothesized that the inoculation of the second dose of vaccine could have triggered, secondary to the loss of the immunological tolerance, a cell-mediated reaction against an unknown keratinocyte antigen, no longer recognized as self and may be, therefore, responsible for the genesis of the lesions described. Further clinical observations and wider studies with higher scientific evidence are needed to validate such a finding and the putative role of m-RNA vaccines in OLP pathogenesis.

ROLE OF TP53 AS THERAPY PREDICTIVE BIOMARKER IN PATIENTS WITH HEAD AND NECK CARCINOMA

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Aim: this study aimed to exploratory investigate TP53 role as therapy predictive biomarker in patients with head and neck squamous cell carcinoma (HNSCC) and to test the usefulness of two classification systems of TP53 mutational landscape.

Methods: clinical and genomic data of 110 HNSCC cases were retrieved by The Cancer Genome Atlas Database and processed in SPSS 21.0 for the statistical analysis. TP53 mutations were categorized as reported by two previously published classification models (Model 1 and Model 2).

Results: 98 were eligible for analysis in this study, 79 reported one single mutation in the TP53 gene, 19 patients held wild-type TP53 gene. From our analysis, emerged that high-risk mutations predicted over two-times higher risk of evidence of

disease after treatments compared to wild-type while no statistically significant difference emerged between low-risk mutations and TP53 wild-type tumors.

Conclusions: the impact of TP53 mutations on therapeutic outcomes is still controversial probably due to the different kind of mutational events that may characterize TP53. We provided the first evidence that TP53 mutations classified according to our model represent a useful tool in predicting therapy response of HNSCC patients. The present retrospective study improves current evidence of the role of TP53 mutations in prognosis and treatment response in patients with HNSCC. Well-designed prospective studies are needed to confirm the role of TP53 mutations in HNSCC before this biomarker can be used to inform clinical decision making.

PDT ON A REFRACTORY GUM PEMPHIGOID IN A NON-HODGKIN'S LYMPHOMA PATIENT, WITH MRONJ RISK

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Aim: mucosal pemphigoid is a group of chronic immune-mediated blistering conditions. The most affected area is the gum. The lesions may present as simple erythema and ulceration following the rupture of the vesicles. Systemic and topical corticosteroids are the treatment of choice to achieve symptomatic control and delay disease progression. Non-Hodgkin's lymphomas (NHL) are cancers that originate from lymphocytes (B and T). Monoclonal antibodies, used to treat NHL, can put patients at risk of developing osteonecrosis of the jaw (MRONJ). The aim of this work is to report the management of a gingival pemphigoid in a patient with non-Hodgkin's lymphoma refractory to drug therapy.

Methods: a 49-year-old female patient with diagnosis of gingival pemphigoid went to our observation. Anamnesis was

positive for previous NHL, treated also with Rituximab. Treatment with topical steroids (Clobetasol 0,05%) and systemic Prednisone were prescribed without any improvement. PDT sessions with Toluidine Blue produced only a little relief but had not effect on blisters. PDT with indocyanine green (0,2%), laser light 810 nm (Gaia evo, Garda laser, Negrar, Italy), at a power of 0.30 W for each interested area for 30 seconds, was performed (5 sessions, once a week).

Results: the patient had not pain after PDT with indocyanine green and the blisters were reduced.

Conclusions: the use of PDT can be considered a safe and successful treatment for the management of refractory oral pemphigoid and to reduce pathogen microorganism invasion, in order to prevent MRONJ.

A CASE REPORT OF 2 METACHRONOUS ORAL SQUAMOUS CELL CARCINOMAS AND 1 RECURRENCE IN 7 YEARS

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Aim: the concept of field cancerization describes the increased risk of cancer development in the epithelial cells adjacent to the primary tumor, after prolonged exposure to carcinogens due to the occurrence of genetic alterations in histologically normal-appearing tissues. Our aim is to describe a case of field cancerization in a woman that developed 2 metachronous oral squamous cell carcinoma (OSCC).

Methods: we report a case of a patient who was referred to our sector of Oral Medicine (AOUP P. Giaccone Palermo, Italy) for the presence of white and red oral lesions one year after a diagnosis of OSCC.

Results: in 2016, a 54-year-old woman with a recent history of OSCC on the left lateral border of the tongue came to our attention. Clinical examination revealed the presence of

a hyperkeratotic-erosive lesion on the masticatory mucosa of the 4th sextant. The incisional biopsy confirmed the presence of a new primary OSCC. The patient was then referred to Oncology Unit for staging and management. Although a periodic follow-up, the patient developed in 2021 a recurrence on the left lateral border of the tongue; and, in 2022, one new primary OSCC on the masticatory mucosa of the 3rd sextant.

Conclusions: field cancerization is characterized by the occurrence of genetic alterations in histologically normal-appearing tissues, and it leads to an increased risk for synchronous or metachronous primary tumors. Therefore, a frequent very strict follow-up is necessary to early diagnose new lesions and improve the patient's prognosis.

LUNG CANCER METASTASES TO THE ORAL CAVITY: CASE SERIES AND SYSTEMATIC REVIEW OF LITERATURE

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Aim: Lung Cancer (LC) is the most frequent cause of cancer-related death worldwide. Metastases of LC to the oral and maxillofacial region are rare. The aim of the present manuscript is i) to describe three cases of LC metastases to the oral cavity, and ii) to perform a systematic literature review on LC metastases to the oral cavity occurrence and treatment.

Methods: three cases of lung cancer metastases to the oral cavity were described. A literature search was performed on PubMed, EMBASE, and Cochrane Library. A systematic review was performed in order to assess the clinical and radiologic characteristics, treatment options, recurrence and survival rate of LC metastases to the oral cavity

Results: three patients, a 78-year-old male, a 70-year-old ma-

le, and a 62-year-old female, were referred for the development of a lesion to the mandible and the mandibular gingiva respectively. Incisional biopsies of the lesions were suggestive of metastasis from lung primary. All patients were treated with chemotherapy and adjuvant radiotherapy. The literature search retrieved 156 cases of LC metastases to the oral cavity, mostly involving the mandible and the mandibular and maxillary gingiva. The management of primary lung cancer metastases most frequently involved chemotherapy and adjuvant radiotherapy.

Conclusions: metastases of LC to the oral and maxillofacial region are rare. Thus, the diagnosis of a metastatic lesion in the oral cavity is challenging, both to the clinician and to the pathologist.

MEDICATION-RELATED OSTEONECROSIS OF JAW IN A REGIONAL NETWORK SINCE 2004: EXPERIENCE OF 856 CASES

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Aim: the aim of this work is to describe MRONJ cases observed at main hospital oral care centers in Piedmont and Valle d'Aosta territory in 15 years.

Methods: data were retrospectively collected from Oral Medicine, Oral Surgery and Oral Maxillofacial Surgery Units, from 01/01/2004 to 31/12/2018. The main parameters collected were disease for which involved drugs (bisphosphonates, denosumab, others) had been prescribed, sex, age of patients, and localization of MRONJ.

Results: data from 856 patients were acquired; 71% were females; mean age was 71 (32-91) years; 90.8% received one only antiresorptive (or antiangiogenic) drug, 9.2% patients were treated with >2 agents. The most administered bisphosphonates were zoledronic acid, alendronate and ibandronate; 35 patients received denosumab, 8 antiangiogenics only. Un-

derlying disease was neoplasm in 691 (80.7%) patients, with prevalence of breast cancer, followed by multiple myeloma and prostate cancer. Non-malignant disease was registered in 165 (19.3%) patients, most frequent was osteoporosis. Sites of ONJ were mandible, maxilla or both.

Conclusions: MRONJ appeared to be not rare in our two regions during the examined 15 years among patients affected by bone metastases or bone metabolic disorders, with predilection for mandible site, elderly (>70 years) and female patients. MRONJ cases related to denosumab are increasing in recent years.

Further collection and analysis of this large population database is ongoing, including evaluation of cancer patient survival after start of antiresorptive treatment and after MRONJ diagnosis.

GINGIVAL LESIONS IN PATIENTS AFFECTED BY MUCOUS MEMBRANE PEMPHIGOID

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Aim: Mucous Membrane Pemphigoid (MMP) is a rare autoimmune vesiculobullous disease. Desquamative gingivitis is often the early, or the only sign, of this condition. Much evidence suggest that the gingival microbiota can modulate the intensity of inflammation. The aim of this study was to investigate a topographic contiguity between the MMP gingival lesions and the presence or absence of teeth or fixtures.

Methods: the inclusion criteria were: histological diagnosis of MMP, presence of desquamative gingivitis as the only sign of disease, absence of topical and/or systemic therapy for MMP. The gingiva of each MMP patient was divided in 56 sites (28 vestibular and 28 lingual). For each site, the presence or absence of dental elements or fixtures and pemphigoid lesions

(erosions, erythema, bullae) were recorded. Chi-squared test was used for the statistical analysis.

Results: 20 patients were enrolled (3, male, 17 female, mean age 73,5), for a total of 1120 sites (678 sites with tooth, 384 edentulous sites, 58 sites with fixture). MMP lesions were more frequent in sites with teeth, when compared with edentulous sites ($P = 0.000$) or with sites with fixture ($P = 0.002$). MMP lesions were more frequent in sites with fixture if compared with edentulous sites ($P = 0.000$). All differences were statistically significant.

Conclusions: MMP seems to affect gingiva with higher frequency where teeth or fixtures are present, if compared with edentulous mucosa. The reason is not clear but gingival microbiota could play a role.

HYBRID ODONTOGENIC LESIONS IN PEDIATRIC PATIENTS: CASE SERIES AND SYSTEMATIC REVIEW OF LITERATURE

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Aim: Hybrid Odontogenic Lesions (HOL) are rare conditions with histological characteristics of two or more odontogenic cysts and/or tumours. Clinical and radiographic presentation is variable, and definitive diagnosis relies on the histological pattern. Therapeutic approach is determined on the basis of the most aggressive lesion detected on histology.

Methods: two cases of HOL occurring in pediatric patients are described. Literature search was performed to retrieve the cases of HOL reported in patients below 21 years of age. In total, 125 cases reported in 87 articles were found

Results: in case 1, a lesion preventing tooth 3.3 eruption was described in a 14-year-old boy. On histology, an odontoma with ghost cell and follicular cyst was diagnosed. In case 2, a 14-year-old boy presented following the failure of orthodontic

treatment to guide mandibular left molars eruption. Histology revealed the presence of a complex odontoma associated with neurofibroma.

According to the literature, HOL most frequently occurs in females, at a mean age of 13.87 years. Symptoms include facial asymmetry and asymptomatic swelling. Radiographic appearance recognizes mixed radiolucent and radiopaque pattern. Surgical enucleation is the treatment of choice, and relapses are very rare.

Conclusions: although of rare occurrence, HOL are pathologic entities which require careful diagnosis. However, diagnosis is often performed when manifestations such as the absence of permanent teeth and/or the development of swelling bring the patient to the attention of the clinician.

GAF VS FORMALIN, ORAL TISSUE PRESERVATION WITH A NEW FORMALIN FREE FIXATIVE

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In histopathology Formaldehyde in its buffered aqueous form known as “NBF” (Neutral Buffered Formalin) has been used as a fixative for hundreds of years. Formalin is widely used due to its convenience in handling, high degree of accuracy and extreme adaptability but on the other hand it is known that this volatile reagent is carcinogenic and mutagen (category 2/1B; EC Regulation n.605/2014). To replace this toxic reagent, a histological fixative is required which then acts in a chemical reaction such as formalin, but without its toxicity, and has a comparable effect on proteins and nucleic acids. The solution proposed by ADDAX Biosciences is a novel formalin-free fixative named as GAF (Glyoxal Acid-Free).

This project includes 3 different studies carried out since 2017 in which two histological fixatives (GAF vs NBF) were compared.

In the first was evaluated (morphological, structural, and genomic preservation) endoscopic biopsies from colon; the second is an open, controlled, multicentric and blinded Clinical Trial that involved 3 important European Centers; the third one was focalized on conservation of oral tissue biopsies (scanned slides will be shown).

The results show that the tissue fixation achieved in GAF is not inferior to NBF in all common diagnostic practices tested in these studies. The main applications investigated were EE, IHC, HC, FISH, DNA/RNA extraction and amplification. The first study was published on PLOSONE and the other two are on writing.

For the first time in history, these studies prove a non-carcinogenic fixative that is not inferior to NBF.

EVALUATION OF LGALS3BP AS A POTENTIAL TARGET FOR OSCC IMMUNOTHERAPY

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Aim: Antibody-Drug Conjugates (ADCs), consisting of a cytotoxic drug conjugated to a monoclonal antibody targeting antigens expressed on tumor cells, are the new frontier in cancer medicine. Lectin-galactoside-binding soluble 3 binding protein (LGALS3BP) is a multifunctional protein highly expressed in cancer cells, playing a role in neoplastic progression. We previously demonstrated that targeting LGALS3BP with a selective ADC can halt tumor growth and metastatic spreading in preclinical models of melanoma and neuroblastoma. In this work, we focused on the evaluation of the potential role of LGALS3BP as a novel ADC target in Oral Squamous Cell Carcinoma (OSCC), which treatment remains challenging.

Methods: LGALS3BP expression was evaluated in a cohort of 53 OSCC patients and in a panel of OSCC cell lines. mRNA,

cytoplasmatic, and secreted protein levels were measured by qPCR, Western Blotting, and ELISA, respectively.

Results: LGALS3BP was highly expressed and secreted, though heterogeneously, in a panel of OSCC cell lines. Fifty out of 53 (95.5%) cases showed a cytoplasmatic expression of LGALS3BP. To dichotomize LGALS3BP expression, a cut-off value of 79% - 50th percentile value - was chosen; tumors with a percentage of stained cells \leq 79% were considered as “low” LGALS3BP, while the others as “high”. LGALS3BP expression was not significantly correlated with any of the clinicopathological variables evaluated.

Conclusions: LGALS3BP is highly expressed in OSCC and represents a potential target for ADC-based therapy. Therapeutic studies are ongoing to confirm LGALS3BP as a promising target for cancer immunotherapy in OSCC.

IS CBD SAFE? AN *IN VITRO* STUDY OF ACUTE AND CHRONIC ADMINISTRATION ON ORAL CELL POPULATION

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Aim: Cannabidiol (CBD), due to trade of Cannabis light products, is increasingly used in healthy population. The aim of this work is to investigate biological effects of CBD, *in vitro*, on healthy oral cells populations, simulating the most frequent intake modalities.

Methods: Human keratinocyte (BSCL 143) and Human gingival fibroblast (BSCL 138) was treated with CBD at different concentration for 24 and 72h, with single administration (acute) or 30 minutes administration every 8h (chronic). Viability was determined by MTT assay, cell morphology with SEM (500X, 2500X e 5000X), cell migration by Scratch assay, apoptosis and cell cycle with flow cytometry.

Results: CBD caused a significant increase in apoptosis and cytotoxicity ($p < 0.01$) with 6 μM in acute treatment, 50 μM in

chronic treatment and significantly inhibited migration at 50 μM in both keratinocytes and gingival fibroblast. SEM analysis confirmed datas, showing raised cell edges, changing in cell shape and in the number of lamellipodia and filopodia. In keratinocytes, however, there was an increase in wound repopulation at 7h and significant reduced apoptosis at 72h with 25 μM .

Conclusions: CBD showed differences between chronic and acute treatment, it was toxic on oral cells at high doses, while appears biocompatible at low doses. Intermediate concentrations, such as 25 μM , showed less cytotoxicity and improved wound closure, especially in chronic administration. The results may be used for further studies to understand the mechanisms in these changes.

IDENTIFICATION OF SALIVARY MIRNAS IN WOMEN AT HIGH RISK OF BREAST AND OVARIAN CANCER DEVELOPMENT

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Aim: the present pilot study aims to evaluate the effect of nutritional and lifestyle interventions on salivary and blood miRNA expression in women with Breast Cancer (BRCA) 1-2 genes mutations. Such are highly predisposed to develop ovarian cancer (about 40%) and breast cancer (about 60%). Here we report the preliminary results of a comparison of miRNA profiles in saliva and blood.

Methods: twenty-five females, aged between 18 and 40 years, with a germ mutation of the gene BRCA1-2 were included in the study. The experimental intervention involved a preliminary evaluation which included recording of medical history, general diagnostics (e.g., blood pressure and heart rate), dental evaluation, salivary and blood collection, questionnaire on the quality of life and a nutritional counselling. Patients un-

derwent periodic follow-up at 3, 6, 11, 17 and 23 months from enrollment. Dental and periodontal health were assessed through DMFT, PSR, plaque and bleeding indexes. 2 mL of whole saliva were collected into a sterile tube. Presence and concentration of 84 selected miRNAs were evaluated through real-time polymerase chain reaction (RT-qPCR).

Results: preliminary results revealed a peculiar pattern of salivary miRNAs in women with BRCA 1 and 2 mutations. The result of the present study may be an important starting point for further research: healthy but predisposed subjects have already a changed miRNA pattern, different from healthy and not predisposed subjects.

Conclusions: salivary diagnostics is revolutionizing the concept of early diagnosis and monitoring of oral and systemic diseases.

A NATURAL PHOTOSENSITIZER AGAINST ORAL CANDIDA MDR STRAINS IN PHOTODYNAMIC THERAPY

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Aim: the emergence of multidrug-resistant (MDR) strains of *Candida spp* stresses the need for the development of new antimycotics. Photodynamic therapy (PDT) is an established treatment for various oral infections, and it involves the presence of 3 elements: (i) a photosensitizer that adheres specifically to microbial cells; (ii) light with a specific wavelength for each photosensitizer; (iii) the presence of oxygen. The reaction between these three elements determines the formation of singlet oxygen and free radicals which selectively kill the microbial cells. The aim of this *in vitro* study is to evaluate activated olive oil as a new type of photosensitizer in PDT against *Candida spp*.

Methods: oral MDR isolates of *C. albicans*, *C. kruseii* and *C. glabrata* were assayed by Kirby Bauer test, performed in accordance with EUCAST protocols. For each strain, four diffe-

rent combinations were evaluated: (i) 100 µl EVOO oil, (ii), 100 µl EVOO oil previously activated with 3% H₂O₂ (EVOO-H), (iii) 100 µl EVOO oil + 5 minutes of polarized light (480-3400 nm, 25 Watt), and 100 µl of (EVOO-H), dish plate irradiated with the same light. The Petri dishes were incubated in air at 37°C for 48 h.

Results: the clinical isolates of *Candida spp*. have shown different behavior with the different assayed experimental groups. While *C. glabrata* resulted sensitive with all combinations, with a 50% increase of inhibition halos by using polarized light. *C. kruseii* was insensitive. *C. albicans* resulted inhibited only with (EVOO-H) light-activated.

Conclusions: olive oil alone or activated with H₂O₂ could be considered a very performant photosensitizer against drug-resistant *Candida spp*. if illuminated by polarized light.

SALIVARY METABOLITES IN PATIENTS WITH ORAL LEUKOPLAKIA

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Aim: the pilot study aims to report preliminary results on the identification of salivary metabolites in patients with dysplastic and non-dysplastic oral leukoplakia (OL), in comparison to salivary metabolic profile of healthy controls (HC).

Methods: whole saliva of 23 patients with OL and 21 HC was collected before surgical procedures (biopsy for patients with OL or routine oral surgery for HC). Demographic variables, anamnestic and clinical data (e.g. size, location, clinical aspects of lesions), risk factors and oral health status (DMFT, PSR, plaque and bleeding scores) were recorded for each patient. Biopsy were performed in the most suspicious area of OL. Histopathological evaluation was performed in all cases and results were classified into OL with and without dysplasia. Salivary samples were centrifuged, filtered, frozen, lyophilized

and finally analyzed by H-NMR. Metabolite identification and quantification were carried out using Chenomx NMR suite 7.6 software. The Variable Importance in Projection (VIP) scores estimates the importance of each metabolite in the groups' aggregation.

Results: scores plot showed three distinct clusters. The clusters of HC and dysplastic OL were the most separated, with no overlapping between groups. An overall of 55 metabolites were identified, the most representative being isoleucine, glycerol, taurine, lactose, putrescine and 3-hydroxybutyrate.

Conclusions: the preliminary data from exploration of salivary metabolome in OL through H-NMR, returned a panel of metabolites able to aggregate well distinguished clusters of cases and controls.

GENE EXPRESSION ANALYSIS OF OSCC CORE AND MARGINS: SOX2 AS A BIOMARKER OF POOR PROGNOSIS

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Aim: cancer stem cells (CSCs) accounts for cancer initiation and progression. Here, we characterized CSCs in tumor core and margins of oral squamous cell carcinoma (OSCC).

Methods: qRT PCR was used to analyze *KLF4*, *BMI1*, *UBE2C*, *CD44*, *ALDH1A1*, *NANOG*, *SOX2*, *OCT4*, *CD133*, *CXCR4*, *FAM3C*, *RRM2*, *IGF1-L* in tumor (T), clinical margin (CM) and health mucosa (H) of samples. TCGA database was used to confirm clinical correlations. 2D motility and 3D spheroid *in vitro* assays were performed to analyze the effects of SOX2 knockdown in CAL 27 and SCC-15 OSCC cell lines.

Results: 72 tissue samples taken from 24 OSCC patients were analyzed. *BMI1*, *UBE2C*, *CD44*, *NANOG*, *SOX2*, *OCT4*, *CXCR4*, *FAM3C* were significantly up-regulated in T vs H ($p < 0.01$); *KLF4*, *CD133* and *ALDH1A1* were significantly down-

regulated ($p < 0.05$). *CD44*, *SOX2* and *CXCR4* were up-regulated also in CM vs H ($p < 0.05$). *SOX2* expression in T samples correlated with advanced TNM stage ($p = 0.0007$) and lymph nodes invasion ($p = 0.0036$). High *SOX2* expression in CM correlated with lymph nodes invasion ($p = 0.0093$). TCGA analysis confirmed that high *SOX2* levels correlate with poor OS ($p < 0.05$). Finally, *SOX2* knockdown revealed a reduction of cell motility at 24, 48 and 72h and a breakdown of tumor spheroid generation ability of CAL 27 e SCC-15 OSCC cell lines. In parallel, *SOX2* knockdown led to the downregulation of stemness (*KLF4*, *BMI1*, *UBE2C*, *CD44*, *NANOG*, *OCT4*, *CXCR4*) and EMT (*VIM*, *SNAIL*, *SLUG*) markers.

Conclusions: the study emphasizes the potential role of *SOX2* as a predictive biomarker of poor clinical outcome in the tumor bulk and margins of OSCC.

DESIGN OF NEW QUESTIONNAIRES FOR EVALUATION OF HYPOSALIVATION

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Aim: the aim of this work is developing new questionnaires to perform an efficient screening for identification of xerostomic patients with potential hyposalivation.

Methods: selection of different types of questionnaires led to their division into five groups: biographical, general and salivation-specific anamnestic, oral health-related quality of life and a new hyposalivation diagnostic questionnaire. Surveys were administered to patients with evident xerostomia, by an operator. Sialometry was performed twice by spitting method.

Results: in this pilot study, the questionnaires assessed the frequency of hyposalivation-related diseases in patients and relatives, as well as the intensity and frequency of symptoms

associated with xerostomia. Oral health-related quality of life is generally worse in patients with hyposalivation, as well as anxiety and depressive disorders are more frequent. The score and positivity of the main criteria achieved in the diagnostic questionnaire would provide an indication of the seriousness of hyposalivation in patients with xerostomia.

Conclusions: questionnaires recording pathological and pharmacological history are needed to collect data about the presence of the etiopathogenic causes and symptoms perceived by the patient. Semi-quantitative clinical hyposalivation score would assess the severity of hyposalivation and allows to compare the disease severity and the response to treatment.

“IO POSSO” (PAZIENTI ONCOLOGICI E SUPPORTO SALUTE ORALE): A FOCUS GROUP FOR CANCER PATIENTS

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Aim: a focus group is a research methodology that allows for acquisition of data during meetings dedicated to a specific topic (1,2). Aims of this study are to share our experience of focus group, Io POSSO to support cancer experience of patients, side effects and relapses on life quality, and to assess home oral hygiene habits.

Methods: our focus group manages many meetings at the Oral Medicine Unit, focusing on different topics supported by specialists, i.e. psychologist, nutritionist, orthopedic, dental hygienist and oral pathologist. The effectiveness of meetings is estimate by a Decisions Meeting Feedback Score after few questions – “How would you rate this meeting?”, “After this meeting, has your outlook for the future changed? Was this meeting helpful?”. The oral health self-assessment test eva-

luates oral hygiene procedures, gingival bleeding, smoking, removable denture, dental problems.

Results: 56 patients have diagnosis of oral squamous cell cancer (82%), and other patients other forms of cancer. 11 are men and 45 women. Effectiveness of meetings is very high, with top level of scoring. The oral health self-appraisal questionnaire shows: 81.8% brushes teeth at least twice a day, 32,1% removable dentures, 3% smokes > 5 cig/day, 30.9% calls a dentist for emergency and 41.8% resolved by phone.

Conclusions: in our focus group, meetings and interviews have allowed patients to clarify beliefs and doubts about cancer therapy and its lapels. Our data seems to confirm effectiveness of this approach in order to improve quality of life and to clarify and encourage treatment pathway.

OZONIZED WATER FOR TREATMENT OF ORAL MUCOSITIS IN CHILDREN: A PILOT STUDY

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Aim: Oral Mucositis (OM) is a common side effect of chemotherapy that affects approximately 80% of paediatric cancer patients. Management of OM is still controversial. Among non-pharmacological therapies, exposure to low ozone (O₃) concentrations has a therapeutic effect in many diseases. The aim of this pilot study was to investigate the effectiveness of ozonized water in the treatment of OM in childhood.

Methods: patients 4 to 18 years old, undergoing cancer therapy and presenting OM (grade²) were enrolled and randomized into two treatment groups. All patients received conventional hyaluronic coating gel treatment. In addition, patients from group A received ozonized water treatment as 4-minute oral rinses (double-distilled ozonized water), for 4 consecutive

days. Patients from group B received placebo treatment (double-distilled water rinses) following the same protocol. OM WHO grade and VAS 0-10 pain evaluation were performed at day 1 (at diagnosis - T₀), day 4 (at the end of the treatment -T₁) and at day 7 (T₂).

Results: a total of 19 patients were included in the study (group A: n = 10; group B: n = 9). Both groups showed a decline of OM grade, being greater in group A, but the difference between groups was not statistically significant (p > 0.05). VAS pain score was significantly lower in group A both at T₁ and at T₂ (p < 0.05).

Conclusions: ozonized water treatment seems to be effective in reducing OM-related pain in children.

INCIDENCE OF DYSGEUSIA IN PATIENTS UNDERGOING HEMATOPOIETIC STEM CELL TRANSPLANTATION

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Aim: dysgeusia is an alteration in taste perception, often resulting from medication intake. This study aims to verify the incidence of dysgeusia in patients undergoing hematopoietic stem cell transplantation (HSCT), secondarily assessing a higher prevalence in cases where HSCT has most affected the quality of life of the patients.

Methods: we asked a sample of 39 patients who had undergone HSCT in the past 2 years whether they had dysgeusia, then we administered them an OHIP (Oral Hygiene Impact Profile) quality-of-life questionnaire, rating with a higher index those who suffered a greater impact on their quality of life. Furthermore, by excluding the 13 patients who died as a result of HSCT and dividing the sample into a group with

dysgeusia and one without, we compared the mean OHIP.

Results: the results show a 39% incidence of dysgeusia in the analyzed patients. Moreover, in the group with dysgeusia the mean OHIP is 6.6 with a standard deviation of 7.3, while in the other the mean OHIP is 4.9 and the standard deviation is 3.3. The p value obtained is 0.38, which is not statistically significant.

Conclusions: these results show a link between incidence of dysgeusia and HSCT. Furthermore, they confirm a higher mean OHIP value, thus a greater association in patients with a worse quality of life. Although the study is not statistically significant because of the small number of patients included, more research in this regard could clarify the link between HSCT and dysgeusia.

SURGERY VERSUS WAIT AND SEE APPROACH FOR THE MANAGEMENT OF ORAL LEUKOPLAKIA

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Aim: evaluation of the efficacy of oral leukoplakia's surgical excision to reduce the occurrence of oral carcinoma (ClinicalTrials.gov Identifier: NCT04858100).

Methods: in this randomized controlled trial (RTC), patients having histopathological diagnosis of oral leukoplakia are enrolled. They are randomized into two groups: a test group and a control group. In the test group, the patient receives complete excision of the lesion. Further follow-up is scheduled after 14 and 30 days from surgery when the operator assesses the healing at the surgical site and the patient receives the result of the histopathological examination. The patient then continues with the routine follow-up, every 3, 4 or 6 months according to the histological findings (presence/absence of dysplasia). In the control group, patient receives a "wait and

see" management with the periodical follow-up scheduled every 3-, 4- or 6-months, according to the histological findings of the incisional biopsies. The incisional biopsies are also periodically repeated every four visits, unless important changes arise first, for which it is necessary to anticipate the diagnostic assessment.

Results: the expected results will indicate whether the surgical excision can reduce the development of oral cancer in patients with oral leukoplakia, in comparison to the wait and see approach.

Conclusions: data obtained will be the first ones coming from an RCT, which evaluates whether excisional surgery is effective in preventing the development of oral cancer in patients affected by oral leukoplakia.