

Findings: Lesions from two of the patients were negative for the MAML2 gene rearrangement while lesions from the other two patients were positive for the MAML2 gene rearrangement.

Conclusion: Although it can be concluded that the two patients with positive translocation for MAML2 had a diagnosis of IMEC, the same conclusion could not be drawn for the two patients with negative translocation. Whether the cases that were negative for the translocation are GOCs with MEC-like islands or MAML2 negative IMEC could not be ascertained. Therefore, MAML2 gene rearrangement is not always dependable in differentiating IMECs and GOCs that share similar histologic overlap. The limited nature of the study due to small sample size precludes a more definitive conclusion. Collaboration vis-à-vis cases and data exchanges between oral and maxillofacial pathology centers may help achieve a better understanding of two uncommon, but clinically impactful, entities.

TUMOR ASSOCIATED MACROPHAGES: TAGGING AGGRESSIVENESS IN ORAL

SQUAMOUS CELL CARCINOMA. DR. ANU-PAMA MUKHERJEE, DR. ANITA SPADIGAM, DR. ANITA DHUPAR, DR. KARLA CARVALHO, DR. SHAHEEN SYED. GOA DENTAL COLLEGE AND HOSPITAL- GOA UNIVERSITY

Introduction: A tumor cannot progress independently of its micro-environment-the stromal cells, tumor associated inflammation, metabolic alterations and extracellular matrix remodeling is significant in disease progression, evolution and metastasis. Bidirectional interactions between the tumor cells and stromal elements determine individual tumor behavior as reflected in the prognostic variability of cases within the same histological grade. However, pivotal findings relating to the tumor micro-environment (TME) in Oral Squamous Cell Carcinoma (OSCC) still remain unaccounted for in the standard grading and staging systems. Thus evaluation of the TME could provide a more robust and accurate predictive assessment of OSCC.

Tumor Associated Macrophages (TAM) constitute the major inflammatory cell population of the TME, with a prominent role in stromal modulation and tumor progression. TAMs have also been regarded as suitable demonstrators of the “seed and soil theory” of metastasis.

Objective: To correlate the presence and role of TAMs in OSCC with the STNMP staging system.

Findings: Immunohistochemical evaluation revealed a definitive presence of TAMs at the advancing front of the tumor. The density of cells escalated from STNMP stage-1 to stage-4. A statistically significant, strong positive correlation was noted between-TAMs, tumor stage, tumor size and nodal status. A poor correlation between TAMs and tumor grade was noted.

Conclusion: In India, of the 77,003 new cases of OSCC registered annually, 67.7% of the patients are lost to the disease. While tumor grade is indicative of the degree of differentiation of OSCC, it is inadequate as a sole predictor of tumor behavior and prognosis. A holistic evaluation of tumors and their TME may be the remedy. Thus, it has emerged that TAMs being dynamic cells of the TME, could be utilized as indicators of tumor behavior and aggressiveness.

PLAQUE-TYPE LICHEN PLANUS OR LEUKO-PLAKIA WITH LYMPHOCYTIC HOST

RESPONSE?. DR. IBRAHIM AKEEL, DR. SOOK BIN WOO. HARVARD SCHOOL OF DENTAL MEDICINE

Introduction: Oral epithelial dysplasia (OED) and oral squamous cell carcinomas (SCCAs) often exhibit a lymphocytic host response (LHR) present as a band at the epithelium-connective tissue interface. Because these are often diagnosed as dysplasia with lichenoid mucositis or lichenoid dysplasia, clinicians assume that such lesions represent dysplasia or SCCA arising within lesions of oral lichen planus (OLP). If the clinical lesion is a solitary plaque, the diagnosis of plaque-type OLP may be made. Lichenoid lymphocytic reactions are not specific to OLP and may be seen in drug-induced, contact hypersensitivity reactions and other conditions. The objective of this study is to review cases of leukoplakia with a lichenoid LHR.

Materials and Methods: Cases diagnosed as OED with lichenoid features or lichenoid mucositis that represented biopsies from solitary white lesions were identified from the files of one laboratory from January 2013 to December 2018.

Results: There were 13 males and 11 females (1.2:1 male to female ratio), and the median age was 61 (range 37–90). All lesions were unilateral and the two most common locations were the tongue (12 cases, 50.0%) and the gingiva (5 cases, 20.8%). Hyperkeratosis and/or parakeratosis and epithelial atrophy was present in 23 (95.8 %) and 10 cases (41.6%) respectively while degeneration of the basal cells was present in 7 cases (29.1%) only. OED was present in 13 (54.1%) of the cases (5 mild, 5 moderate, 2 severe, and 1 carcinoma-in-situ); 36.3% of the cases that showed epithelial atrophy also showed OED. A lymphocytic band was present in 24 cases (100%).

Conclusion: These lichenoid lesions were solitary plaques located most commonly on the tongue and gingiva, common sites for leukoplakia with 54.1% exhibiting OED. As such, these lesions more likely represent leukoplakia with a LHR rather than OLP. Clinicopathologic correlation is essential for accurate diagnosis.

COMPARATIVE ASSESSMENT OF P16 PROTEIN EXPRESSION IN NORMAL AND DYSPLASTIC ORAL MUCOSAL EPITHELIUM.

DR. VIMI MUTALIK^A, DR. KRISTIN MCNAMARA^B, DR. JOHN DRAPER^A, DR. JOHN KALMAR^A. ^A THE OHIO STATE UNIVERSITY, ^B OHIO STATE UNIVERSITY

Objective: Expression of the protein marker p 16INK4a is used as a surrogate for human papillomavirus (HPV) infection in biopsies of oral and tonsillar mucosa. While HPV infection accounts for <5% of oral cavity cancers, its association with oral epithelial dysplasia (OED) is unclear, with prevalence estimates ranging from zero to greater than 90%. In this study, the expression of p 16INK4a was examined in archived biopsy specimens by immunohistochemistry within three groups: control mucosa (CM), low-grade dysplasia (LGD) and high-grade dysplasia (HGD). Tissue samples were age-, sex- and site-matched with 24 cases in each group. Grading of p16 expression was performed according to the criteria of intensity and proportion of cells as described by Grobe et al.

Findings: Fifteen of the 24 HGDs (62.5%), fourteen of the 24 LGDs (58.3%) and four of the 24 CMs (16.6%) were positive for p 16INK4a expression. The difference in p16 expression between HGD versus CM and LGD versus CM were analyzed by Wilcoxon signed rank test and statistically significantly different at level with p-values of 0.0001 and 0.0009, respectively. Greater p16 expression was noted in HGDs compared to LGDs (p-value = 0.01960, which was significant at level). A step-down

Holm-Bonferroni method to account for multiple comparisons showed adjusted p-values of 0.0003 (HG versus CM), 0.0018 (LG versus CM) and 0.0196 (HG versus low LG) among three groups.

Conclusion: p16 expression was statistically-significantly greater in LGD and HGD lesions compared to CM, with a trend of greater expression being associated with higher grade of dysplasia.

DETERMINING THE INFLAMMATORY RESPONSE IN ORAL SQUAMOUS CELL CARCINOMA BY SALIVA ANALYSIS. DR. CATHERINE LALIBERTE, MS. DENISE LOPEZ EYMAEL, DR. GRACE BRADLEY, DR. MARCO MAGALHAES. UNIVERSITY OF TORONTO, FACULTY OF DENTISTRY

Objectives: Oral squamous cell carcinoma (OSCC) often shows a pronounced inflammatory infiltrate and there is accumulating evidence that this inflammatory infiltrate plays an active role in tumor development and progression. Analyses of saliva may provide a non-invasive approach to study the inflammatory response in OSCC. Our aim is to develop a protocol for collection and analysis of saliva in OSCC patients and to use it to characterize both the inflammatory cell profile and cytokine profile in the saliva of patients across all stages of OSCC.

Methods: 42 patients undergoing treatment for OSCC at the Toronto Odette Cancer Centre (stages I to IV), 25 healthy patients, and 9 patients with periodontitis were enrolled. Saliva samples were obtained by rinsing with 3 ml of saline for 30 sec. The samples were kept on ice and stabilized with protease inhibitor until filtration using a 20 μ m membrane filter. Cell pellets were separated by centrifugation and supernatants were analyzed using a BioFlex 30-Plex inflammatory panel (BioRad) and Luminex[®] detection technology. Cell pellets were fixed in 4% PFA and analyzed using multichannel flow cytometry. The fluorescent markers included CD45, CD66b, CD3, CD4, CD8, CD25, CD56, CD68, CD138, Siglec8, PD1 and PDL1.

Findings: Distinctive, reproducible changes were observed in salivary cytokines and inflammatory cell profile of patients with OSCC compared to control and periodontal disease patients. Using our protocol, we were able to describe specific patterns of inflammation for oral cancer, including altered CD4/CD8 ratio and marked increase in IL-1b, IL-6 and TNF-a.

Conclusion: We created a reproducible protocol to collect saliva and perform high-throughput analysis of inflammatory profile of saliva. This technology can be used to develop non-invasive, early detection/prognostic tests for OSCC, new adjunct therapies and new techniques to monitor response to treatment.

CHRONIC ULCERATIVE STOMATITIS: A LICHENOID OR VESICULOBULLOUS DISEASE?. DR. REKHA REDDY, DR. SARAH FITZPATRICK, DR. LIYA DAVIDOVA, DR. INDRANEEL BHATTACHARYYA, DR. DONALD COHEN, DR. MOHAMMED ISLAM. UNIVERSITY OF FLORIDA

Objectives: Chronic ulcerative stomatitis (CUS) is a rare disease of unknown etiology. The histopathologic features are similar to lichen planus, but direct immunofluorescence (DIF) studies show characteristic presence of IgG in basal and parabasal epithelial nuclei. This study will review a case series of

CUS and assess if the entity is more similar to lichen planus or vesiculobullous diseases.

Methods: An IRB-approved retrospective search of CUS was performed within the archives of the UF Oral Pathology Biopsy Service between 2007 and 2017.

Findings: Seventeen cases, all female, were included. The median age was 64 years (range 47-83 years). Eleven patients were Caucasian, one was Asian, and one was African-American. Race was not specified in four cases. Buccal mucosa (8/17) was the most common location, followed by gingiva (7/17), buccal vestibule (1/17), and gingiva/buccal mucosa (1/17). The most common clinical presentations were pain/burning (13/17), erythema (13/17), whiteness (11/17), ulcerations/erosions (5/17), blisters/positive Nikolsky's sign (5/17), sloughing (2/17), striae (2/17), and recession (1/17). The clinical impression was lichen planus in 12 cases. Of these twelve cases, 4 included vesiculobullous disease as a differential. Four cases did not include a clinical impression and one listed erythema multiforme as the clinical impression. All cases were confirmed with DIF testing that showed a characteristic speckled pattern of IgG in basal and parabasal cells. Eleven of these cases were also positive for fibrinogen and two cases were faintly positive for C3. None of the cases were positive for IgA or IgM.

Conclusion: Since CUS has overlapping clinical, histological, and immunofluorescence features with lichen planus and vesiculobullous diseases, clinicians and pathologists should consider this unusual, but significant, entity whenever oral ulcerative diseases with mixed features are encountered.

IMMUNOHISTOCHEMICAL ANALYSIS OF INFLAMMATORY RESPONSE IN VERRU-COUS CARCINOMA COMPARED TO CONVENTIONAL ORAL SQUAMOUS CELL CARCINOMA.

DR. LIYA DAVIDOVA^A, DR. REKHA REDDY^B, DR. SARAH FITZPATRICK^A, DR. INDRANEEL BHATTACHARYYA^A, DR. DONALD COHEN^A, DR. MOHAMMED ISLAM^A. ^A UNIVERSITY OF FLORIDA, ^B UNIVERSITY OF FLO

Introduction: Studies on inflammatory response to oral squamous cell carcinoma (OSCC) generally do not include verrucous carcinoma (VC), which typically carries a far better prognosis. While high CD8 expression is associated with favorable outcome in head and neck cancers, the role of CD4+ lymphocytes remains controversial. B cell involvement has been suggested to enhance T cell response. The aim of this study is to evaluate differences in inflammatory infiltrate immunohistochemistry (IHC) between OSCC and VC.

Materials and Methods: The archives of the UF College of Dentistry oral pathology biopsy service were retrospectively searched for OSCC and VC. Slides were reviewed and 10 cases of VC, 10 cases of well differentiated SCC (SCC-WD), and 10 cases of poorly differentiated SCC (SCC-PD) were selected for testing. IHC staining for CD4, CD8, and CD20 was performed for 30 selected cases. The results were assessed via Aperio Image Scope positive pixel count assessment and analyzed statistically using ANOVA comparison of means with significance measured at $p < 0.05$.

Results: A total of 90 scanned slides were evaluated. Analysis of the results showed no significant difference in mean scores of CD8 or CD20 across groups; however, there was significant difference in CD4 mean scores, with increasing scores noted