and deeply invasive cancers (> 2 mm). Hierarchical clustering (Euclidean distance, Ward linkage) according to presence of lesions (CIS, papilloma, invasive cancer, deeply invasive cancer) revealed three clusters, each with three animals. Significantly greater numbers of lesions were present in Cluster 3 tongues compared to Clusters 1 and 2 (p=0.03 for both comparisons, Ordinary one-way ANOVA, Holm-Sidak multiple comparisons test). Cluster 1 comprised tongues with the deeply invasive cancers, which also showed aggressive features, including perineural invasion. Significantly fewer papillary lesions were present compared to Clusters 2 and 3 (p=0.004 and p=0.0002, respectively, two-way ANOVA, Tukey's multiple comparisons test).

Conclusions: Our data suggest possible division of the 4NQO model into subtypes. Lesion associated genomic copy number alterations and mutations are being determined to identify molecular and evolutionary relationships among lesion types and possible model subtypes.

PREVALENCE OF DRUG-RESISTANT MICROORGANISMS IN ORAL CAVITY DURING ORTHODONTIC TREATMENT.

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Bacterial antibiotic resistance is a steadily growing global problem, which is nowadays compared with issues such as global warming, ozone depletion and extinction of species. Rough surfaces such as brackets in orthodontics treatment can cause biofilm accumulation and maturation, what could advance changes in the oral microbiota, favoring the resistance of these microorganisms.

Objectives: To investigate the prevalence of drug-resistant microorganisms in patients using fixed orthodontic appliance.

Methods: Sample consisted in 22 patients (11 female and 11 male) with mean (SD) of 22.3 (11.0) years with good general and oral health conditions participates in the study. Oral biofilm was evaluated by autofluorescence imaging analysis (using LED light) to indicate mature biofilm and posteriorly collected at the buccal tooth surface around fixed orthodontic appliance. Oral biofilm samples were inoculated into chromogenic medium and screening of representative microorganisms was performed. The CFUs were isolated and tested with antibiogram discs and antimicrobial agents which are common in clinical practice were used.

Results: Oral microorganisms collected around brackets showed a surprising high prevalence of bacterial resistance for all tested drugs: Erythromycin (54.5%), Clindamycin (50%), Amoxicillin (45.5%), Amoxicillin with Clavulanic Acid (31.8%) and Cephalexin (31.8%).

Conclusion: A special attention should be directed to precautions against these microorganisms, particularly in immunosuppressed patients, who are more susceptible to infections.

FOLLICULOSEBACEOUS CYSTIC HAMARTOMA OF THE ORAL MUCOSA: CLINICOPATHOLOGIC ANALYSIS OF 3 CASES OF AN UNCOMMON ENTITY.

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Objective: Folliculosebaceous cystic hamartoma (FSCH) represents an unusual type of cutaneous hamartomatous proliferation, manifesting clinically as an asymptomatic, slow-growing papulo-nodular lesion that most commonly affects the facial skin, primarily around the nose. Microscopically, FSCH is composed of infundibular structures with numerous radiating sebaceous lobules embedded in a mesenchymal stromal component. Despite the nomenclature, significant cystic dilatation is observed in <40% of the cases. Intraoral involvement of FSH is exceedingly rare. We aim to present and analyze the clinicopathologic characteristics of a case series study of 3 intraoral FSCHs.

Results: Three FSCH cases were identified in the archives of the Oral and Maxillofacial Pathology Laboratory, University of Minnesota between 2008-2017 with M:F ratio=2:1 and mean age =42.3 years (age range: 27-61 years). All cases were located in the buccal mucosa and presented as painless, submucosal nodules of long duration measuring 0.6-1.5 cm. No previous history of skin graft in the area of the lesions was reported and none of the patients had a clinically identifiable syndrome. Histopathologically, oral FSCHs showed aggregates of variable number of rudimentary follicular structures and sebaceous lobules. Occasionally, the sebaceous glands were radially arranged and attached to small in size infundibular structures featuring rare microcystic changes, or were scattered in the deeper portions of the oral mucosa. The pilosebaceous units were immersed in a dense, focally desmoplastic, connective tissue stroma with variable amounts of mature adipocytes and vessels. Piloerector muscles were present in 2 out of 3 FSCHs, while inflammation was generally absent.

Conclusions: Oral FSCH is an infrequent lesion which can be misdiagnosed as ectopic Fordyce granules or other sebaceous neoplasms. Similar to a subgroup of cutaneous FSCH, oral lesions fail to show prominent cystic formation. Notably, a predilection for the buccal mucosa is reported. Whether oral FSCH represents late developing stage of trichofolliculoma remains unknown.

ODONTOGENIC TUMORS: A 50-YEAR EXPERIENCE.

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Objectives: Odontogenic tumors are a heterogeneous group of lesions of diverse clinical behavior and histopathologic types, ranging from hamartomatous lesions to malignancy. They are derived from epithelial and mesenchymal elements of the tooth-forming apparatus so they are unique to the jaws. The last update of these tumors was published in 2017 January. According to this classification, benign odontogenic tumors are classified as follows: Epithelial, mesenchymal (ectomesenchymal), or mixed depending on which component of the tooth germ gives rise to the neoplasm. Malignant odontogenic tumors are quite rare and named similarly according to whether the epithelial or mesenchymal or both components are malignant. Epidemiological data on odontogenic tumors within in Turkey is scarce. Our aim is to determine the incidence of odontogenic tumors according to the new classification within a Turkish population. These tumors were identified using the pathology files, Istanbul, about a 50-year period.

Findings: Over a thousand cases of odontogenic tumors were diagnosed in the Oral and Maxillofacial Pathology Unit between 1971-2018. The cases were reviewed and reclassified histopathologically in accordance with the 2017 WHO classification of head and neck tumors. The most common three tumors were ameloblastoma (n:366, including unicystic and peripheral ameloblastomas), odontoma (n:335, both complex and compound), and odontogenic myxoma/fibromyxoma (n:190), respectively. Malignant and peripheral odontogenic tumors are a small proportion of this series. The mean age is about 32 and there is a slight female predilection. The most common site is molar region of the mandible, followed by the anterior mandible and the anterior maxilla.

Conclusions: This is one of the largest series of odontogenic tumors to be described from the Europe. The location, site, gender and age of the patients are similar to that in other populations, however there are some differences about the frequency of the tumors types.

THE IMPORTANCE OF EARLY RECOGNITION OF ORAL POTENTIALLY MALIGNANT DISORDERS IN HIV-AIDS INDIVIDUALS..

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Objective: An increase in head and neck cancer (HNC) in HIV-infected individuals has been described in several epidemiological studies, suggesting that immunosuppression, even in treated patients, may play a role in the development of HNC. A thorough oral examination is essential for the identification of potentially malignant lesions, particularly in individuals at high risk to develop cancer. Thus, we report two cases of oral potentially malignant disorders occurring in HIV individuals.

Clinical Presentation: Case 1. A 39-year-old male HIV + since 2013. In 2015 presented an asymptomatic, slightly granular, red/white pediculate tumor on the left buccal mucosa, clinically compatible with multifocal epithelial hyperplasia with post-traumatic hyperkeratosis (251 cells/ml CD4+, undetectable viral load [VL]). Two weeks later, the lesion showed marked erosive/ulcerated areas, thus, a complete excision was done. The final diagnosis was in situ squamous cell carcinoma positive to HPV-16. Case 2. A 40-year-old male HIV+ since 2005, with histologically confirmed oral hairy leukoplakia, immunohistochemistry showed positive expression to EBV and negative to HPV. In 2015 presented a white well circumscribed homogeneous plaque, with a slightly rough surface and some satellite lesions, comparable with the previous hairy leukoplakia. The patient referred itching and burning sensation, so an excisional biopsy was done, showing hyper orthokeratosis with moderate dysplasia. The sample was negative for EBV and HPV. Both patients have remained asymptomatic, without signs of recurrence.

Outcome: The present cases evidence that some oral potentially malignant disorders may resemble other common lesions in HIV-patients that could be underdiagnosed, delaying an appropriate management and impacting prognosis. It is essential to highlight that HIV/AIDS patients should be closely monitored. Oral examination should be cautious even in the presence of lesions with a benign appearance.

A CLINICO- EPIDEMIOLOGICAL, GENETIC AND MOLECULAR ANALYSIS OF FOCAL EPITHELIAL HYPERPLASIA (FEH).

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Objectives: FEH is a benign mucosal condition often presenting in female children. The Indian descendants in America, Eskimos in Greenland and Canada, the Nahuatl population in Mexico and Aboriginals in Australia are commonly affected populations while in Africa; cases have been reported from the Khoi San population in South Africa and from Ghana and Nigeria. Clinically, lesions may be localised or multiple, flat (Papillomatous) or raised (Papillonodular) and are more common on the lips and buccal mucosa

Material and Methods: An epidemiological demographic screening project between 2015-2017 was undertaken for FEH by the NRU, Khartoum, Sudan. This assessed 647 persons in the age groups 5−38 years living in the province of 'Kalakla' (North, West and East), an area with a high population of FEH presentation as determined by health statistical analysis, ministry of health. Clinical assessment was carried out in all persons and genetical and molecular HPV subtyping was carried out in 30% of the assessed population.

Findings: 77% of persons were 5-15 years, 14% were between 16-27 and 9% were between 28-38 of age. Of 647 persons, 147 persons were clinically diagnosed with FEH and the lips were the commonest area affected. Mean age of presentation was 14 years (range: 5 − 23), 27% of persons with FEH had a familial relation and 132/147 were female. 30/147 underwent PCR analysis and HPV 32 was the most common subtype, followed by 1,11,12 and 13. 3 persons had no evidence of HPV infectivity. Finally, 12/15 persons who underwent genetical analysis were positive for HLA DRB 1*0404 expression.

Conclusion: Persons with FEH and their relatives are greatly affected by the aesthetic, medical and traumatic concerns related with this condition. Differential diagnosis includes other viral lesions, epidermodysplasia verruciformis, dysplastic PUVA keratosis and syndromes such as Neurofibromatosis and Cowdens.

INTERFERON GAMMA (IFNΓ) ANTITUMOR EFFECTS ON ORAL CANCER CELLS ARE ACCOMPANIED BY ER STRESS RESPONSE MODULATION AND DSPP ACTIVITY SUPPRESSION.

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Objectives: Expression of proinflammatory cytokines in various malignant neoplasms is widely considered to represent a host immune response to control tumor development. Recently, the role of interferon gamma (IFNγ) in oral squamous cell carcinoma (OSCC) and its relation with endoplasmic reticulum (ER) stress pathways were investigated. Dentin sialophosphoprotein (DSPP) has been involved in malignant transformation, invasion and metastasis of OSCC. The present study examined the effects of IFNγ treatment on ER stress, Unfolded Protein Response (UPR) and calcium homeostasis regulating mechanisms and the potential interaction with DSPP in OSCC cells.