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.

*MS. GABRIELA SABINO[A], DR. SELLY SUZUKI[A], DR. AGUINALDO GARCEZ SEGUNDO[A], MR. ALEXANDRE CZEZACKI[A], MS. THAINA PUGLIESI[B], MRS. GILCA SABA[B], MR. THIAGO ALMEIDA[A], MRS. IONE CASELATO[C], DR. VICTOR MONTALLI[A]. [A] SÃO LEOPOLDO MANDIC RESEARCH CENTRE, [B] SÃO LEOPOLDO MANDIC RESEARCH CENTER, [C] CQC*

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.

*DR. PROKOPIOS ARGYRIS, DR. IOANNIS KOUTLAS, DR. RAJ GOPALAKRISHNAN. UNIVERSITY OF MINNESOTA SCHOOL OF DENTISTRY*

**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.

*DR. MERVA SOLUK TEKKESIN[A], DR. SıRMAHAN CAKARER[B], DR. NIHAN AKSAKALLı[A], PROF. CANAN ALATLı[A], DR. VAKUR OLGAC[A]. [A] ISTANBUL UNIVERSITY, INSTITUTE OF ONCOLOGY, [B] ISTANBUL UNIVERSITY, FACULTY OF DENTISTRY*

**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.