



American Academy of Oral  
& Maxillofacial Pathology

## Poster Program

**Tuesday - May 18, 2010**  
**7:30 am – 11:30 am**

*Salon C*

# Poster Abstracts – Tuesday, May 18, 2010

## #1

**SAFETY AND PERFORMANCE EVALUATION OF SALIWELL GENNARINO.** C Krushinski, S Zunt. Indiana U School of Dentistry, Indianapolis. Objective: The objective of this clinical trial was to test the safety and efficacy of electrostimulation using the Saliwell GenNarino (GN) device. This was a part of a world-wide study, with about ten subjects enrolled per site, with seventeen sites enrolled, and one hundred forty subjects expected. Methods: Dental impressions of both arches were taken with alginate impression material and stock trays, and poured immediately with yellow stone. The casts were sent to Israel for fabrication of the GN, and the device was received about one month later. The use of the device was compared between active vs. sham mode for one month each in a double-blind design (Phase 1). In phase 2, the xerostomia relieving effect of the active device was assessed in an open label design for an additional nine months, divided in three trimesters differentiated by the length of time of device wearing (1,5, or 10 minutes). Results: Eleven subjects were enrolled. Eight subjects completed phase one of the study, and five subjects completed the entire study. One subject was extremely pleased with the GN, and nearly doubled both unstimulated and stimulated salivary flow. Six of eleven subjects dropped from the study. Two subjects dropped because they could not function without their sialogogue medication (both were taking Evoxac® (cevimeline HCl). One subject dropped because the device was not tolerated. One subject dropped due to distance traveled and did not think the device was helping. Two subjects experienced a dead battery during the study. Conclusions: The GN offers patients a non-drug, non-invasive option for the treatment of xerostomia. It is a custom-made removable device which patients can wear up to ten minutes per hour. The GN appears safe and patients seem to tolerate it well.

## #2

**10-YEAR REVIEW OF A SMALL SURGICAL ORAL PATHOLOGY SERVICE.** K Summersgill. U Pittsburgh, Pittsburgh. This research collected data for several parameters for up to 10 years for the private surgical oral pathology practice associated with the School of Dental Medicine, U. of Pittsburgh. In 2009, the practice rendered a diagnosis on 2179 surgical biopsies, 15 cytologies for candidiasis, 21 external consultations, and 44 internal ENT pathology consultations, for a total of 2253 procedures. Of the biopsies, 64 were dermatopathology cases (10 year avg.: 42) and 48 were malignancies (10 year avg.: 34). Over 10 years, the practice saw an average of 1725 surgical biopsies/year, with a general upward trend. The most common diagnoses in 2009 were: irritation fibroma (7.4%), hyperkeratosis (6.4%), giant cell fibroma (5.7%), epithelial dysplasia (5.5%), radicular granuloma (4.7%), mucocele (4.7%), radicular cyst (3.6%), and papilloma (3.1%). Of periapical (PA) lesions in 2009, 55% were granulomas. 72% of PA lesions were from the maxilla; the maxillary incisors accounted for 31% of all submitted PA lesions. Over the past 5 years, the practice had an average of 165 contributors, 94% from Pennsylvania. The mean number of biopsies each submitted for 2009 was 11.6 (range 1-156, median=3, and mode=1). In 2009, 51% of contributors who sent more than 2 cases were oral surgeons, who contributed 84% of the cases. There was an average annual gain of 50 contributors, and a loss of 45. For one oral pathologist in 2009, billings were mostly for Level IV (59%), followed by Level V (29%) and Level III (4%). Collections were most commonly from Blue Cross/Blue Shield (59%), followed by cash (16%). Medicare accounted for 5% of collections.

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## #3

CANADIAN IMMUNOHISTOCHEMISTRY QUALITY CONTROL (CIQC): AN ACADEMIC PROGRAM PROVIDING PROFICIENCY TESTING TO CANADIAN CLINICAL IMMUNOHISTOCHEMISTRY LABORATORIES. M Copete, J Garratt, B Gilks, D Pilvadic, E Torlakovic. U Saskatchewan, Lions Gate Hospital, BC, U British Columbia, BC, General Jewish Hospital, McGill U, QC, U Toronto. External quality assurance is an important component of quality control/quality assurance measures for clinical laboratories, which also includes immunohistochemistry (IHC) testing. Although it is essential for proper IHC tests calibration, only a few programs offer proficiency testing (PT) to clinical laboratories. Recently, the Canadian Immunohistochemistry Quality Control (CIQC) was created to support EQA for clinical IHC testing and is an academic program affiliated with the Canadian Association of Pathology. It provides several challenges in both Class I and Class II IHC tests. Tissue microarray (TMA) design is used by the CIQC for PT. Ten runs are completed since inception. Unstained slides from TMA blocks were sent to participants. The stained slides are returned to the CIQC, which subsequently scans all results for digital/virtual microscopy, performs expert assessment by the team of pathologists, and performs statistical analysis to provide information on kappa-values and concordance with reference results. While Class II test results appear satisfactory, results of Class I tests show very heterogeneous level of success with different IHC tests/antibodies and are ranging from less than 40% to close to 90% with most tests being suboptimal. More extensive PT testing needs to be developed for Class I tests, which account for great majority of clinically utilized IHC tests.

## #4

INAPPROPRIATE CALIBRATION AND OPTIMIZATION OF PANKERATIN (PAN-CK) AND LOW MOLECULAR WEIGHT KERATIN (LMWCK) IMMUNOHISTOCHEMISTRY (IHC) TEST IS VERY COMMON IN DIAGNOSTIC IHC LABORATORIES. M Copete, J Garratt, B Gilks, D Pilvadic, E Torlakovic. U Saskatchewan, Lions Gate Hospital, BC, U British Columbia, BC, General Jewish Hospital, McGill U, QC, U Toronto. IHC tests are generally classified as Class I and Class II tests. The former test results are used by pathologists in conjunction with clinical and morphological findings to determine cell differentiation. Class II tests are prognostic and predictive markers, which are used by clinicians to stratify patients for appropriate therapies. Pan-CK and LMWCK tests are most commonly used Class I tests to support evidence for epithelial differentiation. Canadian Immunohistochemistry Quality Control (CIQC) is a new provider of proficiency testing (PT) for Canadian clinical IHC laboratories. So far, CIQC had two challenges including PT for pan-CK and LMWCK. CIQC has designed 70-sample tissue microarray (TMA) for Run 1 and 30-sample TMA for Run 8. Run1 had 13 participants and Run8 had 61 participants. In both runs > 40% of laboratories produced poor results indicating that about half of clinical laboratories have inappropriately calibrated IHC test for most common markers of epithelial differentiation. Further analyses indicated that inappropriate selection of external positive controls and samples for optimization of these tests were the problem. Therefore, proper selection of positive control material and material for optimization of the tests is critical for proper clinical application of Class I IHC tests.

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## #5

NEONATAL TEETH IN 6-WEEK-OLD BABY WITH BILATERAL CLEFT LIP AND PALATE. CASE REPORT AND REVIEW OF THE LITERATURE. C Haberland, J Persing. Yale-New Haven Hospital, New Haven. The presence of teeth at birth or shortly thereafter is rare. We present a 6-week-old Hispanic baby girl with a non-syndromic bilateral cleft lip and palate with a neonatal tooth on the right maxilla adjacent to the cleft. Clinically, the tooth had yellow dysplastic enamel, gingival inflammation, and mobility. An occlusal radiograph showed a calcified tooth-like structure lacking a root, and a second outline of a tooth structure apical to it. Due to feeding difficulties the tooth was extracted. One week later the patient presented with an erupted second tooth-like structure at the previous extraction site. This tooth was also extracted. Review of literature shows that natal teeth occur more frequently (3:1) compared to neonatal teeth. Overall the incidence of natal/neonatal teeth is between 1:8,000 to 1:10,000 in patients without orofacial clefts. However, natal/neonatal teeth have been reported to occur in 2% of patients with unilateral cleft lip and palate and in 10% of patients with bilateral cleft lip and palate. Clinically, the teeth usually appear with an opaque yellow-brown, irregular enamel, and are mobile. Histologically, they present with dysplastic and/or hypomineralized enamel, irregular dentinal tubules and incomplete root formation. In approximately 9% of patients a second tooth-like structure may develop later. In general, extraction of natal/neonatal teeth is indicated if there are feeding difficulties and/or soft tissue injuries. Degree of mobility and risk of aspiration have been regarded as reason for extraction; nevertheless, to date there are no reported cases of aspiration, only cases of spontaneous exfoliation. Due to an increase in incidence of neonatal teeth in patients with orofacial clefts adequate diagnosis and management are important.

## #6

AGGRESSIVE OSTEOLASTOMA OF THE MAXILLA: A CASE REPORT AND REVIEW OF THE LITERATURE. C Harrington, B Accurso, J Kalmar, H Iwenofu, A Agrawal, C Allen, M Leon. Ohio State U, Columbus. Aggressive osteoblastoma is a rare primary bone neoplasm with the potential for local invasion and recurrence, but not metastatic spread. Very few well-documented cases have been reported in the jaws. A 25-year-old man presented with a gradually enlarging palatal mass of several months duration. He reported that while generally asymptomatic, the lesion had recently become increasingly painful. The diagnosis from the incisional biopsy was "osteoblastic neoplasm." One month later the patient underwent a partial maxillectomy. Histopathologic examination of the resection revealed a proliferation of large epithelioid cells with eccentric nuclei and prominent nucleoli associated with broad, irregular deposits of osteoid and trabeculae of bone. Mitotic figures were uncommon and typical in appearance while osteoclast-like giant cells were readily identifiable within an associated loose fibrovascular stroma. A diagnosis of aggressive osteoblastoma was made. Eight months post-operatively there was no evidence of recurrence. Previous reports of gnathic aggressive osteoblastoma will be reviewed and the distinguishing features from conventional osteoblastoma or osteoblastoma-like osteosarcoma will be discussed.

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## #7

**CRANIOFACIAL FIBROUS DYSPLASIA.** V Woo, E Herschaft, H Akerson, N Handoo, R Danforth.. U Nevada Las Vegas, Las Vegas, Sioux Falls, U Iowa, Iowa City. Fibrous dysplasia (FD) is an unusual developmental condition caused by postzygotic mutations of the GNAS1 gene, resulting in persistent activation of the G-protein  $\pm$ -stimulatory subunit. Activation of the G-protein complex leads to inappropriate maturation of osteoblasts and deposition of fibro-osseous tissue in place of bone. Various extraskeletal manifestations may also be seen. Diagnosis requires close correlation primarily between clinical and radiographic findings, with histologic confirmation desirable in some cases. Craniofacial FD is characterized by involvement of the maxillofacial bones and skull. The clinical presentation is frequently non-specific, consisting of a painless facial swelling. Moreover, difficulties are often encountered in radiographic diagnosis because of overlapping anatomy and the varied radiographic appearance of FD in this region. We report an 11-year-old female who presented with complaints of sinus symptoms and progressive facial asymmetry. Intraoral examination revealed marked expansion of the right maxilla. Panoramic imaging showed an indistinct radiopacity causing partial obliteration of the maxillary sinus. On cone-beam computed tomography (CBCT) scanning, a classic ground-glass change to the bone was noted with extension into the antrum, zygoma, sphenoid bone and orbit. Biopsy confirmed a benign fibro-osseous lesion composed of fibrous stroma with trabeculae of curvilinear woven bone. Due to the extensive nature of this patient's FD, non-surgical treatment options are being explored. Craniofacial FD can present challenges from both a diagnostic and management perspective. This case highlights the utility of advanced imaging, including CBCT, in evaluation and therapeutic planning for patients with this condition.

## #8

**INTRAMEDULLARY FIBROUS SCAR-321 EXAMPLES OF A PREVIOUSLY UNREPORTED AVASCULAR FIBROSIS OF JAWBONE.** J Bouquot, R McMahon. U Texas, Houston, Valparaiso, Indiana. Any amount of fibrosis in fatty marrow is pathological, but occasional cancellous jawbone curettings show only viable bone and dense collagen, similar to that seen with periapical scars and fibrous mucosal scars. Some patients have reported dramatic chronic pain reduction with removal of the fibrosis. We describe a previously unreported lesion within jawbones. 321 cases and 100 controls (normal bone) were identified from a database of archival biopsies. Lesions were usually in the posterior jaws, were found in patients with an average age of 48 years; 76% were females (controls: 43 years; 69% females). At least 51% of lesions were located in previous surgical sites, 37% were painful; 83% showed ischemic/inflammatory changes in adjacent marrow, but this was mild. The fibrosis was dense and almost completely avascular in 84% of cases; 43% had at least one focus of infiltration by lymphocytes. Attached bone was always viable and the etiology was not microscopically obvious except that 14% were associated with intramedullary foreign material, usually amalgam. Control cases showed no fibrosis of any type and were not associated with obvious ischemic or inflammatory conditions; differences between each lesional feature and controls were statistically significant at a level of  $p > .0001$  (Pearson chi square analysis). Conclusion: Focal regions of dense, avascular fibrosis do occur within medullary spaces, possibly secondary to improper healing after surgery, but the etiology is unclear. We propose "intramedullary fibrous scar" as the appropriate diagnostic term. Clinical significance is unclear but a sizeable proportion of cases are associated with pain, hence, this does not appear to be equivalent to the periapical scar.

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## #9

**RADIOGRAPHIC FEATURES OF ORAL BISPHOSPHONATE RELATED OSTEONECROSIS OF THE JAW (BON).** D Cohen, I Bhattacharyya, H Dashti, R Kuklani, S Fitzpatrick, MN Islam, K Magliocca. U. Florida, Gainesville, U. Indiana, Indianapolis. Objectives: To identify the salient radiographic features associated with osteonecrosis of the jaws related to oral bisphosphonate (BP) use. A database was created and maintained at our institution over the last three years and was sponsored by Merck & Co. Methods: A total of 35 well documented cases of BON were considered in the study. Radiographic images were obtained from the 29 cases that involved either jaw or adjacent tissues. X-rays from the 6 patients, with necrotic tori or mylohyoid ridge, were not considered relevant. Panoramic radiographs were the most common images evaluated with only a few periapical films or CT scans submitted. The radiographs were evaluated and radiographic features were tabulated. Results: Osteosclerosis limited to the alveolar process, widening of the lamina dura, expansion of the periodontal ligament space, bony sequestra, jaw expansion, radiolucencies and periosteal new bone formation were all noted. Osteosclerosis of the alveolar process was found in all radiographs. In the mandible, this sclerosis was especially distinct and noted to be located only above the inferior alveolar canal. Rarely were all radiographic features visualized in a single case. Another important finding was the presence of periodontal disease in all 29 of the cases that involved the jaws. This could be attributed to the fact that BP accumulates preferentially in sites of high bone turnover or remodeling. Conclusions: Recognition of the radiographic features plays a crucial role in the early detection of osteonecrosis and treatment planning of patients on oral BP. In stage, oral radiographic findings may be the only indicator of BON and can precede the finding of exposed bone.

## #10

**THE ROLE OF ZOLEDRONIC ACID IN THE APOPTOTIC CELL DEATH OF METASTATIC CANCER.** H Almubarak, A Jones, M Zhang, TF Meiller, MA Scheper. U Maryland, Baltimore. Bisphosphonates are synthetic analogues of naturally occurring pyrophosphate, capable of binding hydroxyapatite of bone and inhibiting osteoclast mediated bone resorption. This property has led to their use in cancers, well known to metastasize to bone, most notably breast and prostate cancer. We show here that zoledronic acid (ZA) directly induces apoptosis, in a survivin dependent manner, to a significantly greater degree in (Tumorigenic) than (Non-Tumorigenic) primary tumors. Human breast and prostate, non-tumorigenic (MCF 10A, LNCaP) and tumorigenic (MCF 7, PC3), cell lines were exposed to different concentrations of ZA (0-10  $\mu$ M), using  $1\frac{1}{4}$ M as the baseline. A dose response effect on apoptosis and cell proliferation (Microscopic Observation, Annexin V and MTS, respectively) was observed with increasing ZA concentrations to a greater extent in the tumorigenic versus non-tumorigenic cells. Gene expression analysis demonstrated the differential expression of multiple genes involved in apoptosis including: TNF, BCL-2, Caspase, IAP, TRAF, and Death Domain families. Western blot analysis confirmed anti-apoptotic proteins survivin, BCL-2, and BCL-xL were down-regulated and pro-apoptotic proteins caspase-2, -3, and -9 were up-regulated in the MCF-7 and PC 3 cell lines, but remained unchanged in the MCF-10A and LNCaP cell line 3; explaining, at least in part, the significantly increased levels of apoptosis within the tumorigenic cells compared to the non-tumorigenic cells. The combined results from this study demonstrate that low concentrations of ZA rapidly and directly affect the metastatic lesions through the induction of a gene-regulated apoptotic process. These findings support the potential for ZA to directly affect the tumor, as well as prevent bony invasion.

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## #11

**EPIDEMIOLOGY AND RISK FACTORS OF BRONJ: A RETROSPECTIVE ANALYSIS OF 576 CANCER PATIENTS RECEIVING INTRAVENOUS BISPHOSPHONATES.** R Gopalakrishnan, VT Math, L Tu, S Huckabay, A Dudek, K Swenson, J Leach, D Basi. U Minnesota, Minneapolis, Park Nicollet Institute, St Louis Park. The true incidence, etiology, and risk factors that contribute to bisphosphonate-related osteonecrosis of the jaw (BRONJ) pathogenesis are not known. We conducted a retrospective study to evaluate the frequency, risk factors, clinical presentation, and management of BRONJ in cancer patients treated with intravenous BP at the University of Minnesota Masonic Cancer Center and Park Nicollet Institute. Eighteen of 576 eligible patients (3.1%) developed BRONJ including 8 of 190 (4.2%) patients with breast cancer and 6 of 83 (7.2%) patients with multiple myeloma. Ten patients (59%) developed BRONJ following tooth extraction, while 7 (41%) developed it spontaneously. The mean infusions and duration of BP treatment was significantly higher in BRONJ patients compared to control subjects ( $P < 0.001$ ). Multivariate Cox proportional hazards regression analysis revealed that diabetes (HR=3.40; 95% CI=1.11-10.11;  $p=0.028$ ), hypothyroidism (HR=3.59; 95% CI=1.31-9.83;  $p=0.013$ ), smoking (HR=3.44; 95% CI=1.28-9.26;  $p=0.015$ ), and higher number of zoledronate infusions (HR=1.07; 95% CI=1.03-1.11;  $p=0.001$ ) significantly increased the risk of developing BRONJ. Based on the AAOMS staging system, one patient was initially diagnosed with a Stage I lesion, 10 patients with Stage II and 4 with Stage III lesions. Initial management of BRONJ was non-surgical, with debridement performed at subsequent visits if needed. BRONJ lesions healed completely in 2 patients (11%), healed partially in 5 (28%), remained stable in 5 (28%), and progressed in 6 (33%). Increased cumulative doses and long-term intravenous BP treatment is the most important risk factor for BRONJ development. Type of BP, diabetes, hypothyroidism, smoking and prior dental extractions may play a role in BRONJ development.

## #12

**RARE PRESENTATION OF METASTASIZING MIXED TUMOR WITH INTRAORAL METASTASIS TO THE MAXILLA.** R Gopalakrishnan, A Pearson, D Basi. U Minnesota, Minneapolis. Metastasizing mixed tumors are very rare salivary gland neoplasms that are histologically benign but clinically malignant as they metastasize to distant sites. Parotid gland is by far the most common location of the primary tumor and the most common sites of metastasis reported in the literature include bone, lung, and lymph nodes. We report an interesting case of metastasizing mixed tumor in a 36 year old male who presented with a mass in the left maxillary buccal gingiva and alveolar mucosa in the area of tooth # 13 and 14 twenty-one years after removal of a pleomorphic adenoma from the left parotid gland. Imaging studies showed the lesion also involved the alveolar bone. Histological examination revealed a benign salivary gland neoplasm that was consistent with pleomorphic adenoma. Review of the medical history revealed that the patient has had two recurrences of the primary tumor and five previous metastatic presentations prior to the current lesion. The patient's current and past clinical and histological presentations and work ups will be discussed, along with pertinent review of the literature. As far we know this is one of few reports of metastasizing mixed tumor with an intraoral presentation of the metastasis.

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## #13

**DIAGNOSTIC IMAGING FEATURES OF INTRAOSSEOUS MUCOEPIDERMOID CARCINOMA.** KC Chan, MJ Pharoah, L Lee, I Weinrib, B Perez-Ordenez. U. of Toronto, Toronto, Princess Margaret Hospital, Toronto. Intraosseous mucoepidermoid carcinomas of the jaws are rare, comprising 2-4% of all mucoepidermoid carcinomas. A review of the English-language literature revealed a paucity of publications detailing the radiographic features of intraosseous mucoepidermoid carcinoma, and no review of advanced imaging characteristics. The purpose of this study is to present the common diagnostic imaging characteristics of intraosseous mucoepidermoid carcinoma seen in plain radiography and computed tomography. Two observers reviewed and recorded the imaging characteristics seen in plain films and 3 complete CT studies of 4 cases of histologically confirmed intraosseous mucoepidermoid carcinoma. In addition, in 1 case the histopathologic features displayed in a whole section through the resected specimen was correlated to the radiographic features. The following 5 imaging features were found to be common to all cases: a well-defined sclerotic periphery, the presence of amorphous sclerotic bone within the lesion, numerous loculations (majority less than 8 mm in diameter), lack of septae bordering some of the loculations, expansion and perforation of the outer cortical plate with extension into surrounding soft tissues. Other characteristics included tooth displacement and root resorption. Some of these characteristics are shared with both desmoplastic ameloblastoma and glandular odontogenic cyst; similarities and differences will be presented.

## #14

**BASAL CELL ADENOCARCINOMA: A SERIES OF 39 TUMORS.** E Bilodeau, L Barnes, R Seethala. U Pittsburgh, Pittsburgh. We herein report our experience with 39 basal cell adenocarcinomas (BCAC) (1993-2010) to further define the clinicopathologic features of this rare salivary gland malignancy. The mean age at presentation was 57.6 years, with no gender predilection. The most common sites were parotid gland 82.1%, submandibular gland 5.1%, and upper lip 5.1%. 22.8% of patients had a synchronous or asynchronous salivary gland tumor. One of these patients had Brooke-Spiegler syndrome. Four histologic subtypes were identified: membranous 41.0%, tubulotrabeular 23.1%, solid 20.5%, and cribriform 15.4%. All histologically tubulotrabeular tumors were low to intermediate nuclear grade; whereas 87.5% of solid and 43.8% of membranous variants were intermediate or high grade. Angiolymphatic invasion was seen in 20.5% of tumors. Perineural invasion was present in 33.3% of tumors. 25.8% of cases with associated normal salivary tissue exhibited precursor lesions including intercalated duct hyperplasia, striated duct hyperplasia, and in one case eccrine duct hyperplasia. 11.1% of patients presented with recurrent disease (mean time to recurrence: 65.8 months) and all were cytologically intermediate or high grade. Two patients showed evidence of metastatic disease with sites including distal extremities (finger) and brain. While BCAC is typically indolent, they can occasionally show high grade histologic features and behave in an aggressive fashion. Membranous and solid tumors appear more aggressive tubulotrabeular BCAC. Precursor lesions, such as intercalated and striated duct hyperplasia, are not infrequent.



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## #15

**THE INCREASED MUC1 EXPRESSION IN RECURRENCE AND MALIGNIZATION OF SALIVARY GLAND PLEOMORPHIC ADENOMA.** AB Soares, VC de Araujo, A Altemani. São Leopoldo Mandic Institute and Research Center, Campinas, State University of Campinas, Campinas. Background: Pleomorphic Adenoma (PA) is the most common salivary gland tumor. Although classified as benign, it presents tendency to recur (RPA) and risk of malignant transformation. It has been suggested that MUC-1 plays a role in the progression of many tumors and in the salivary gland it was indicated as a marker to predict RPA. The aim of this study was to evaluate the MUC-1 expression in different phases of the adenoma to carcinoma sequence. Methods: 21 cases of PA, 18 cases of RPA, 3 cases of RPA with focal transformation (RPAT) and 11 cases of carcinoma ex-pleomorphic adenoma (CXP) were analyzed for MUC1 expression by the immunohistochemical technique using the antibodies MUC1/DF3. Results: There was a significant difference in MUC1 expression in all the groups. When comparing non-recurrent with recurrent tumors, MUC1 reactivity in RPA was stronger than that observed in PA. In all the different groups of carcinoma MUC-1 expression was significantly higher in carcinoma than in the RPA and PA. Conclusion: This study shows that carcinoma cells overexpress MUC1 and that this molecule is associated with the malignant transformation of this tumor. In addition, this research confirmed that MUC1 is related to the recurrence of PA.

## #16

**PTEN AND NFKB SIGNALING IN SALIVARY GLAND TUMORS.** Y Marques, S Sousa, K Hunter, M Abreu e Lima, D Pinto Jr, P Speight. U São Paulo, São Paulo, U Sheffield, Sheffield. Salivary gland tumors comprise a group of tumors with a complex and unclear process of tumorigenesis. Previously we have shown a significant over expression of Akt and Mdm2 in these tumors. Akt coordinates many proteins within the cell. PTEN and NFkB may play important roles in the understanding of the activation of Akt pathway. PTEN negatively regulates the Akt/PI3K pathway, important for cell growth, proliferation and survival. NFkB activation is responsible for direct transcription of over 180 known NFkB target gene involved with survival and proliferation. Objective: the aim of this study was to analyze the expression of PTEN and NFkB proteins in salivary gland tumors. Thirty-eight cases of adenoid cystic carcinoma (ACC), 45 pleomorphic adenoma (PA), and 13 carcinoma ex-pleomorphic adenoma (EXPA), were submitted to immunohistochemistry. Normal salivary gland (NSG) was used as control. Findings: strong cytoplasmic and negative nuclear staining of NFkB in almost all tumors was seen. Eight samples of PA and one EXPA showed low rates of nuclear staining. NSG showed variable cytoplasmic expression rates. PTEN stained the cytoplasm of all tumors and NSGs. Also, high rates of nuclear PTEN in all ACC and low rates in three EXPA were seen. NSG showed negative nuclear expression. Nuclear PTEN may be associated with other proteins blocking or inactivating tumor suppressors and its own function, thus in ACC PTEN may indicate an unexpected activity towards the classic PTEN pathway and also PTEN protein may be associated with other proteins inactivating tumor suppressors. Conclusion: this study strongly suggests that PTEN may be involved in tumor progression of ACC. On the other hand, cytoplasmic expression of NFkB is probably not significant due to the similarity with NSG.

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## #17

MUCUS PRODUCING PAPILLARY CYSTADENOCARCINOMA OF MINOR SALIVARY GLANDS: REPORT OF TWO CASES. M Romañach, J León, O Almeida, F Pires, R Carlos. U Campinas, Piracicaba, State U Rio de Janeiro, Rio de Janeiro, Centro Clínico de Cabeza y Cuello/ Hospital Herrera Llerandi, Guatemala City. Salivary gland cystadenocarcinomas with both mucinous and papillary components have been rarely described in the literature. Tumors with these features present no uniform nomenclature and variable clinical behavior. We report two additional cases of mucus producing papillary cystadenocarcinomas focusing their histological and immunohistochemical features. Case 1 presented as a nodular, deeply situated mass in the posterior floor of the mouth of a 59-year-old female and case 2 as a submucosal nodule in the floor of the mouth of a 54-year-old female. Both tumors exhibited the same histological features, including multiple cystic spaces filled with mucous, lined by clear mucous producing epithelial cells, forming intraluminal papillary projections supported by a thin fibrovascular connective tissue core. Some columnar epithelial cells had atypical morphology and mitotic figures were rarely encountered. Luminal content was positive for Periodic acid-Schiff and mucicarmin. The neoplastic epithelial cells were strongly immunopositive for cytokeratin (CK) 7, 8, 18, and 19 and negative for CK 20. The Ki-67 labeling index was 10% and p53 staining was less than 5%. Both patients were submitted to wide surgical excision and there are no signs of recurrence after 1 year in case 1 and 6 months in case 2. Large series of cystadenocarcinomas presenting both mucinous and papillary components are necessary to better understand their immunophenotype, diagnostic features and biological behavior.

## #18

EXTRASKELETAL MYXOID CHONDROSARCOMA IN A PEDIATRIC PATIENT. M Romañach, J León, O Almeida, M Nuyens, R Carlos. U Campinas, Piracicaba, Centro Clínico de Cabeza y Cuello/ Hospital Herrera Llerandi, Guatemala City. Extraskeletal myxoid chondrosarcoma (EMC) is a rare malignant soft-tissue tumor that mainly affects the thigh of males in their sixth decade of life. It has been rarely described in the head and neck area, especially in children and adolescents. We present a case of EMC affecting the infratemporal space of a 13-year-old male presenting a large painless diffuse mass in his right parotid region lasting 6 months. T2 weighted magnetic resonance image exhibited a lesion with high signal and lobular configuration. Histological evaluation of the specimen obtained by incisional biopsy revealed multiple nodules containing tumoral cells separated by several fibrous septae. The tumoral cells presented vacuolated granular cytoplasm and round nuclei and were supported by an abundant myxoid pale stroma. Periodic acid-Schiff staining with and without prior diastase digestion demonstrated cytoplasmic glycogen in the tumoral cells. Immunohistochemical features of the tumoral cells included positivity for vimentin, neuron-specific enolase, and chromogranin whereas the tumor was negative for pan-cytokeratin AE1/AE3, EMA, S100, desmin, HHF35, CD57, GLUT-1 and synaptophysin. The Ki-67 labelling index was 42%. The patient was treated by surgical excision and adjuvant radiotherapy but died after 1 year due complications of local tumor dissemination.

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## #19

**HIGH-GRADE MYOFIBROBLASTIC SARCOMA OF THE PALATE AND MAXILLARY SINUS: CASE REPORT WITH LITERATURE REVIEW.** J Doscher, S Dubner, D Miller, R Kelsch, J Fantasia. Long Island Jewish Medical Center, New Hyde Park. **Background:** Myofibroblastic sarcoma (MS) represents a distinct malignant mesenchymal neoplasm composed of myofibroblasts, different from fibrosarcoma and leiomyosarcoma. MS may arise in soft tissue or bone in adults or children. There is a predilection for the head and neck region. Most MS are low-grade; mimicking nodular fasciitis, and possibly inflammatory myofibroblastic tumor; yet a less differentiated high-grade variant exists. High-grade MS is hypercellular, has less collagen production, may exhibit necrosis and demonstrates hyperchromasia, and increased mitotic activity. Marked pleomorphism and multinucleated giant cells that characterize high grade pleomorphic sarcoma are lacking. The cells of MS express smooth muscle actin and calponin and lack h-caldesmon. MS lacks specific cytogenetic abnormalities as identified in infantile fibrosarcoma t(12;15) and inflammatory myofibroblastic tumor (rearrangement in the ALK gene region). Cytogenetics of MS has demonstrated non-characteristic chromosomal aberrations with a simpler karyotype than reported with high-grade pleomorphic sarcomas. **Methods:** Case study. An 86-year-old man presented with a large ulcerated mass of the right posterior palate, with mobile maxillary molars and upon biopsy, underlying necrotic appearing bone. Histopathological findings and immunohistochemical phenotype were interpreted as high-grade MS. Work-up of the patient revealed extensive disease involving multiple sites. **Conclusion:** A high-grade MS with an aggressive clinical course is presented. MS is a distinct lesion with defined immunophenotypic features. Low-grade lesions may mimic reactive or benign processes and high-grade lesions need to be differentiated from other similar appearing spindle cell sarcomas.

## #20

**NASAL SINUS LEIOMYOSARCOMA WITH HISTORY OF UNILATERAL TREATED RETINOBLASTOMA.** S Fitzpatrick, C Monteiro, R Makary. U Florida, Gainesville, U Florida, Jacksonville. Patients with a history of treated retinoblastoma (RB) have a greatly increased risk of a broad spectrum of secondary malignancies appearing many years later, with a high incidence in the head and neck region. Leiomyosarcomas (LMS) account for about 20% of these tumors. LMS in the sinonasal region generally are associated with a locally aggressive course and have a poor prognosis. We report an unusual case of LMS of the nasal sinus area in a 35 year-old African American male with a history of unilateral RB and radiation therapy. RB may occur in two forms. The hereditary form is generally bilateral but can present as unilateral with a positive family history and typically exhibits a germline mutation in the RB1 gene on chromosome 13. The non-hereditary form is usually unilateral but can show the same germline mutation in up to 10% of cases. Patients with hereditary RB have a ten-fold higher cumulative risk of developing secondary malignancies than those with the non-hereditary form. Most reported cases of sinonasal LMS are in patients with a history of the bilateral hereditary form of treated RB. To the best of our knowledge, this is the second reported case of sinonasal LMS arising in a patient with a history of unilateral RB. The clinical history, radiology, and pathology are presented along with a brief discussion of the literature.

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## #21

CONGENITAL EWING SARCOMA OF THE HEAD AND NECK WITH NOVEL EWS-NFATC2. C Flaitz, J Hicks. U Texas Dental Branch, Houston, Baylor College of Medicine, Houston. Background: Congenital small round cell tumors (SRCT) are typically leukemias and neuroblastomas. Congenital Ewing sarcoma (ES) is very rare and may be misdiagnosed as another SRCT. Case Report: A 37 weeks gestational age male was delivered vaginally. An 8x7cm, blue to purple mass protruded from the left facial/ear region that was not detected at 20 weeks gestation by ultrasound. Diagnostic imaging and clinical impression were interpreted as a vascular tumor, and prednisone and lansoprazole therapy was initiated. The tumor rapidly increased in size and ulcerated; therefore, resection was performed on the 8th day. Pathology: The tumor was comprised of sheets of undifferentiated cells with scant cytoplasm, frequent mitoses, minimal stroma and no differentiation. Flow cytometry revealed CD56 (NCAM) and CD38 positivity with no evidence of hematolymphoid malignancy. Immunocytochemistry exhibited CD56 and dot-like Golgi staining with CD99. Myogenic (myogenin, desmin), neuroblastic (NB84), epithelial (EMA, cytokeratin), germ cell (AFP, CD30, PLAP), vascular (CD34, CD31), rhabdoid (INI1) and melanocytic (HMB45, MelanA) markers were negative. Electron microscopy provided evidence for neuroectodermal (ES) derivation with rare neurosecretory granules, bland nuclei, intercellular junctions and lack of neurites. Cytogenetics identified EWS rearrangement by FISH and novel EWS-NFATc2 translocation [t(20;22)]. Despite therapy, the child died of disease 4 months after protocol initiation. Conclusion: Multimodal diagnostics, including cytogenetic and molecular analyses are important for definitive diagnosis, proper treatment and discovering novel translocations in neonates with SRCT.

## #22

ORAL WARTS IN HIV-INFECTED INDIVIDUALS EXHIBIT LACK OF TISSUE AUTOFLUORESCENCE: A CLINICOPATHOLOGIC STUDY. C Flaitz, M Nichols, N Vigneswaran, J Bouquot, A Zuluaga. U Texas Dental Branch, Houston, Bering-Omega Dental Clinic, Houston, Remicalm LLC, Houston. HIV-infected individuals experience an increased prevalence of oral warts. Multiple and high-risk HPV genotypes have been identified in these lesions, which suggests a potential risk for HPV-associated squamous cell carcinoma. The purpose of this clinical study was to evaluate HPV-induced oral lesions in HIV-infected individuals, using direct autofluorescence visualization and correlate results with histopathologic findings. Consecutive HIV patients from Bering-Omega Dental Clinic with oral warts and hyperkeratotic lesions were recruited. Following informed consent, patient demographics, CD4 count, viral load, medications and oral cancer risk factors were recorded. Clinical features and location of lesions were evaluated and photographed under white light, violet light excited autofluorescence (405 nm) and green-amber light reflectance (540-560 nm), using Identafi 3000 (Trimira, Houston TX). Surgical specimens were submitted for routine microscopic diagnosis. Immunoperoxidase (IMP) studies, using HPV Cocktail Broad Spectrum (Biocare Medical, Concord CA), were performed. 29 patients had HPV lesions and/or squamous cell carcinoma (25M, 4F; mean age=47; mean CD4=339). 4 patients were in the control group (3M, 1F; mean age=45; mean CD4=163). In HPV group, tobacco use was 55% and alcohol use was 38%; control group was 100% tobacco and 50% alcohol use. IMP for HPV was positive in warts but no controls. Loss of fluorescence (LOF) was 85% for oral warts, 9% equivocal, 6% no loss. LOF for control group was 25% with positive vascular reflectance for lichenoid mucositis. In this pilot study, oral warts consistently demonstrated loss of fluorescence in this high-risk oral cancer group, using a multi-spectral oral examination light.

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## #23

DETECTION OF LOW AND HIGH RISK HPV SUBTYPES IN OROPHARYNGEAL CANCERS AND PRECANCEROUS CONDITIONS BY REAL TIME PCR. N Said-Al-Naief, P Kulesza, W Carroll. U Pacific, San Francisco, Northwestern U, Chicago, U Alabama, Birmingham. Human papilloma virus (HPV) infection has been recently identified as an important etiologic factor in H&N pathology with important treatment & prognostic implications since HPV + tumors affect a younger non smoking population & have a distinctly better survival after treatment than the HPV-negative cohort. M & M: The identification and genotyping of high risk (16, 18, 31, 33, 35, 39, 42-45, 51, 52, 56, 59 & 70) & low risk (6 & 11) HPV was investigated in 18 H&N cancers and pre-cancerous lesions. 8 invasive tonsillar Sq. cell carcinomas (5 mod. diff. {MDSCC} & 3 poorly diff. {PDSCC}), 5 laryngeal tumors (4 Squamous Papillomas, one of which exhibited moderate dysplasia & 1 MDSCC), 2 well-diff. SCC {WDSCC}) involving the L.arytenoid & fossa of Rossenmuller respectively & 1 invasive PDSCC of the soft tissues of the neck of unknown primary were investigated. 2 invasive WDSCC of dorsal tongue & floor of mouth respectively & 1 lesion of lateral tongue showed keratosis with moderate dysplasia were also included. Results: 61.1% (11/18) of all lesions were HPV 16+ and none demonstrated low risk HPV subtypes. 5/6 MDSCC were HPV 16+ & 1 tumor was inconclusive. 3/4 PDSCC demonstrated HPV 16+ subtype. Neither the oral lesions nor the tumors of the aryt. & fossa of Ross. showed HPV presence. All laryngeal Papillomas were + for HPV16. Conclusions: Despite the small sample size, the present study further confirms the detection of high risk HPV in oropharyngeal carcinoma & laryngeal papilloma. The absence of HPV in oral malignant & precancerous lesions also delineates the limited contribution of HPV to the development of these lesions. These findings should also prompt the clinicians to investigate the presence of HPV in MDSCC & PDSCC with lesser emphasis on WDSCC via Real Time PCR.

## #24

PRIMARY INTRAOSSEOUS CARCINOMA-REPORT OF A CASE AND REVIEW OF THE LITERATURE. J Ojha, R Wesley, M Oberoi. U Detroit Mercy, Detroit, St. John Clinical Pathology Laboratories, Detroit. Primary intraosseous carcinoma (PIOC) is a rare malignancy of the jaws arising from the remnants of residual odontogenic epithelium. PIOC is most commonly seen in the posterior mandible and has a strong male predilection. The incidence of PIOC is extremely low with less than 50 cases reported in the literature. We report an additional case of PIOC in the mandible of a 73 year old patient. The lesion was initially discovered as an incidental unilocular radiolucency at the apex of tooth #28. Due to the increasing size and non healing nature of the lesion following root canal therapy, an incisional biopsy was performed. Histopathological examination revealed an epithelial malignant neoplasm of odontogenic origin consistent with PIOC. The patient was treated with anterior mandibulectomy followed by reconstruction with a fibula free flap. In addition to a comprehensive literature review, we discuss the diagnostic criteria, clinical, histopathological, therapeutic and prognostic features of PIOC.

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## #25

**INTRAORAL ADENOSQUAMOUS CARCINOMA-REPORT OF A CASE AND LITERATURE REVIEW.** J Ojha, M Tanabe, R Wesley, J Blatt. U Detroit Mercy, Detroit, St. John Clinical Pathology Laboratories, Detroit. Adenosquamous carcinoma (ASC) is a rare and aggressive malignant neoplasm with a poor prognosis. It arises from both the surface and salivary ductal epithelium, with histological features of both squamous cell carcinoma and adenocarcinoma. The most common site in the upper aerodigestive tract is the larynx, followed by the oral cavity. An exhaustive literature search revealed less than 20 documented cases of intraoral ASC. The most common intraoral locations are the tonsillar pillars, floor of the mouth and posterior tongue. We report a case of ASC on the palate of a 72 year old edentulous patient, who presented with a chief complaint of pain and soreness of 3 weeks duration under the denture. Clinically, the lesion presented as a thick, diffuse leukoplakia extending from the right vestibule to the alveolar ridge and the hard and soft palate, with cratered ulceration of the left side of the hard palate. An incisional biopsy was performed. The microscopic examination displayed squamous cell carcinoma and adenocarcinoma, favoring a diagnosis of ASC. The patient opted for treatment with chemotherapy and radiation only, without extensive surgery. The clinical and histopathological features of ASC, differential diagnosis, and review of literature are presented.

## #26

**LEUKOPLAKIA: IS THE PREVALENCE OF DYSPLASIA/CARCINOMA GREATER THAN WE THINK?** R Grammer, M Lerman, S Woo. Harvard School of Dental Medicine, Boston. Leukoplakia is the most frequently occurring oral lesion with malignant potential: a clinical entity defined by the World Health Organization as “white plaques of questionable risk having excluded (other) known diseases or disorders that carry no increased risk for cancer.” Essentially, leukoplakia is a diagnosis of exclusion. Histologically, leukoplakia may represent hyperorthokeratosis or parakeratosis, with or without acanthosis, inflammation, and/or dysplasia. Cases submitted for histopathological examination from January 2007 to June 2008 to Pathology Services Inc., a surgical pathology laboratory in Cambridge, Massachusetts affiliated with the Harvard School of Dental Medicine, were reviewed for inclusion in the study. In total, 1,269 cases were accepted. Among these, 417 were true leukoplakia, the remaining 852 were specific benign lesions. Of the 417 true leukoplakias, 241 cases showed evidence of reactive lesions, only 176 cases were non-reactive, non-specific leukoplakia. Among these 176, 43.2% (76) were dysplastic and all 176 cases atypical. Current literature suggests 80.1% of leukoplakias reveal no histopathologic evidence of epithelial dysplasia. This may be partly because frictional injuries such as benign alveolar ridge keratosis and all classic morsicatio mucosae oris (chronic bite injury) were excluded. Based on the diagnostic criteria used in the aforementioned paper, this study found 10.9% of leukoplakia to be dysplastic and 89.1% without evidence of dysplasia. After exclusion of these benign frictional and otherwise reactive keratotic conditions, this study found the proportion of cases of true leukoplakia that represent atypia, dysplasia, carcinoma-in-situ, and invasive squamous cell carcinoma is 43.2%, twice that previously reported.

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## #27

**P38 REGULATES IL-1<sup>2</sup>-MEDIATED CYTOKINE SECRETION IN HEAD AND NECK SQUAMOUS CELL CARCINOMA.** R Vander Broek, E Van Tubergen, K Kirkwood, N D Silva. U Michigan School of Dentistry, Ann Arbor, Medical U South Carolina School of Dentistry, Charleston. Cytokines and pro-inflammatory factors are critical mediators of head and neck squamous cell carcinoma (HNSCC). RNA binding proteins, such as tristetraprolin (TTP), target cytokine mRNA for degradation and decrease cytokine production. However, during an inflammatory response, TTP is functionally inactivated by phosphorylation through p38 activity, leading to increased expression of cytokines. A constitutively active p38 pathway is implicated in tumor survival and IL-6 production. Previously, we showed that increased IL-6 in HNSCC is prognostic for poor disease specific survival and higher probability of tumor recurrence. Therefore, an active p38 MAPK pathway may inactivate TTP and contribute to tumor progression. Objective: to delineate the role of p38 activity in regulating cytokine secretion in HNSCC. Methods: p38 activation was optimized with an IL-1<sup>2</sup> dose curve. UM-SCC-11A and -81B were transfected with siRNA non-target and p38. Conditioned medium was collected from cells transfected with siNT or sip38 in the presence of IL-1<sup>2</sup>. IL-6, VEGF and PGE2 secretion was quantified by ELISA. Results: p38 is activated in HNSCC cell lines. IL-1<sup>2</sup> mediates pp38 activation in HNSCC cell lines maximally at 10ng/ml. p38 knockdown was verified by immunoblot analysis. Maximal knockdown of p38 occurred at 72h post transfection. p38 knockdown reduced cytokine secretion even in the presence of IL-1<sup>2</sup> at 72 hours post transfection. Conclusions: These findings support the potential for targeting regulators of cytokine secretion, such as p38 or downstream targets of p38, as a practical means for limiting the progression of HNSCC. Future studies will elucidate the mechanisms of p38 regulation of TTP activity in HNSCC. Support: UM School of Dentistry, NIDCR R01 DE018512 and K02 DE019513.

## #28

**IMPACT OF DENDRITIC CELL-HEAD AND NECK SQUAMOUS CELL CARCINOMA INTERACTIONS ON CELL PHENOTYPES AND MIGRATION.** L Ramanathapuram, E Lamb, E Odell, Z Kurago. NYU, New York, Kings College, London. In head and neck squamous cell carcinoma (SCC) samples we observed the intimate association of myeloid dendritic cells (DC) with SCC cells in both primary tumors and their lymph node metastases. In vitro videomicroscopy studies showed that the direct interactions between monocyte-derived DC and SCC cells produced a significant impact on SCC cell migration. Our current research further examines the influence of monocyte-derived DC on the properties of SCC cells. As monocytes are precursors of mucosal DC, we used peripheral blood monocytes differentiated in vitro into DC by standard methods, which produces a non-adherent population of immature DC (naDC) and a population of adherent cells (aDC). Because in vitro-differentiated DC are used in tumor immunotherapy studies, we examined both aDC and naDC. aDC and naDC were phenotyped by flow cytometry and individually co-cultured with two SCC cell lines. All co-cultures produced floating and attached mixed DC-SCC cell populations which were analyzed for viability, chemokine receptor expression, morphology and ability to re-establish colonies. SCC cells caused the up-regulation of DC differentiation marker CD1a, lymph-node homing chemokine receptor CCR7, tissue-migration receptor CXCR4 and down-regulation of DC maturation marker CD86 on aDC and naDC, with more pronounced influence on aDC. On the other hand, the floating SCC cells in co-cultures with aDC and naDC were enriched for viable cells and also expressed more CCR7. Re-plated DC-SCC floaters were capable of establishing new colonies. Quantification of the migratory abilities of DC and SCC cells and the functional characterization of detached SCC cells are under investigation.

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## #29

**MULTIMODALITY OPTICAL IMAGING OF MOUSE MODEL OF TONGUE CARCINOGENESIS: CORRELATION WITH HISTOPATHOLOGIC AND MOLECULAR FEATURES.** N Vigneswaran, K Rosbach, A Wu, J Wu, R Richards-Kortum, A Gillenwater, M Lingen. U Texas Dental Branch, Houston, Rice U, Houston, U Texas MD Anderson Cancer Center, Houston, U Chicago Medical Center, Chicago. Animal models of oral carcinogenesis are critical for development of non-invasive optical imaging diagnostic tests. Aim: To describe the optical imaging data in a mouse model of tongue carcinogenesis and correlate them with histologic and molecular features. Methods: Two inbred strains (CBA and C57BL/6) of mice were given 4NQO (100 µg/ml) in drinking water for 16-weeks. Mice were euthanized 8 and 18-weeks after initiation of 4NQO treatment and tongues were imaged and then used for histologic and molecular studies. Tongues were imaged after topical application of the following fluorescently-tagged contrast agents: 2-NBDG (to assess metabolic activity), EGF peptide and proflavine (DNA binding dye). Tissue sections were stained with anti-mouse EGFR, phosphorylated-EGFR (p-EGFR), CD147, cyclin D1 and p63 antibodies. Results: Autofluorescence imaging of experimental tongues revealed multifocal loss of autofluorescence, whereas control tongues revealed normal autofluorescence. Images obtained with contrast agents revealed higher fluorescence intensity in experimental tongues as opposed to the control tongues. The experimental tongue mucosa revealed epithelial dysplasia (8 weeks) and OSCC (18 weeks). Confocal imaging of fresh tissue slices incubated with 2-NBDG and EGF revealed increased binding in experimental tongues compared to controls. Proflavine staining displayed dysplastic cells with enlarged nuclei throughout the entire epithelium. Immunohistochemistry revealed increased expression of EGFR, p-EGFR, CD147, cyclin D1 and p63 in the experimental tongue sections. Conclusions: The 4NQO-induced mouse tongue carcinogenesis closely mimics the key optical imaging, histologic and molecular features of human oral cancers and its precursors.

## #30

**DISCOID LUPUS ERYTHEMATOSUS IN THE ORAL CAVITY: CLINICAL CHARACTERISTICS AND TREATMENT.** E Gagari, E Georgakopoyloy, T Danciu. U Athens School of Medicine, Athens. Discoid Lupus Erythematosus (DLE) is a chronic skin disease that mainly affects the skin of the face and other sun-exposed areas. It is distinctly rare in the oral cavity and there are few evidence-based studies that document its treatment. We present a case series of 9 patients with oral DLE that have been followed up for the last two years in the Oral Medicine Clinic of the A. Syggros Hospital. The mean age of patients was 52 years (40-75) and the majority of patients (8 out of 9) were females. The oral lesions presented mainly as painful lichenoid mucositis with desquamative gingivitis and bullae formation being an occasional finding. Oral lesions responded initially well to treatment with oral prednisolone, but presented with frequent relapses. All the patients demonstrated skin lesions characteristic of DLE and received different treatment for the skin lesions which appeared to cause less discomfort to the patients. Serologic findings indicative of systemic lupus erythematosus were found to be negative in all the cases examined.



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## #31

PATTERNS OF EXPRESSION OF TWIST1 AND ACTIVE AKT IN ORAL SQUAMOUS CELL CARCINOMA. T Danciu, K Cordell, E Gagari. U Michigan, Ann Arbor, U Athens, Athens.

Objective: Twist1/2 are members of the bHLH family of transcription factors that are implicated in carcinogenesis and play essential roles during development. Despite their significant role, the mechanisms that regulate the function of these factors remains poorly understood. We have identified two putative Akt phosphorylation sites in Twist1 that are conserved across species. Since both Akt and Twist1 are implicated in tumor initiation and progression, we tested expression and colocalization of Twist1 and active (phosphorylated) Akt (p-Akt) in samples of human oral squamous cell carcinoma (OSCC). Methods: 25 cases of paraffin-embedded tissues were selected from the Oral and Maxillofacial Biopsy Service at University of Michigan (UM) School of Dentistry.

Immunohistochemistry was performed to localize Twist1 and p-Akt. RT-PCR was used to detect mRNA expression of Twist1 in OSCC cell lines isolated and characterized at UM; immunoblotting was used to detect p-Akt in these cells. Results: In epithelium from normal patients, p-Akt and Twist1 staining was negative. In biopsy specimens of patients with OSCC, there was significant variability in Twist1 staining ranging from fewer than 10% of the tumor cells being positive to greater than 50%. There was a greater tendency for Twist1 positivity to be localized in the nucleus of poorly differentiated tumors. Similarly, there was variability in p-Akt staining and localization. All of the OSCC cell lines expressed p-Akt while Twist1 levels were variable. Conclusion: This preliminary work unveils a potential role for Twist1 in OSCC and its possible regulation by p-Akt in this malignancy. Future studies aimed at clarifying the role of Twist1 and Akt in prognosis of patients with OSCC will be conducted in our laboratory.

## #32

EXTRAPULMONARY TUBERCULOSIS WITH PRIMARY MANIFESTATION IN THE ORAL CAVITY: REPORT OF A CASE. E Gagari, T Danciu. U Athens School of Medicine, Athens, U Michigan, Ann Arbor. Extrapulmonary tuberculosis (EPTB) is a rare form of tuberculosis (TB) that may elude diagnosis. An 81-year-old male patient with no significant medical history presented with a large ulcerated lesion of the right buccal mucosa and commissure of one month's duration. A biopsy was obtained disclosing the presence of caseating granulomata. The patient was informed that further evaluation was required but was unable to return because he had been hospitalized for a prostatectomy. Seven months later, he re-visited the clinic complaining of the same oral lesion that had enlarged. Upon further evaluation, it was established that histopathology of the prostatectomy had also demonstrated the presence of caseating granulomata, but had not been followed up diagnostically. A blood test, chest x-ray and Mantoux test were performed. The results demonstrated a negative chest x-ray and strongly positive Mantoux test, with mild anemia. A second oral cavity biopsy specimen was obtained and used for Lowenstein Jensen culture as well as MGIT and AMTD assays all of which were found to be positive for mycobacterium. A Ziehl-Neelsen stain of the specimen was negative. The patient was put on a rifampicin and ethambutol regimen and the oral lesion resolved completely in 6 weeks.

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## #33

**STEATOCYSTOMA SIMPLEX: CASE REPORT OF A RARE INTRAORAL OCCURRENCE.** P Pugalagiri, H Kessler, E Holmgren. Baylor College of Dentistry-Texas A&M University Health Science Center, Dallas, Pittsfield, MA. Steatocystoma simplex is a benign cystic lesion of adnexal origin that occurs in the dermis. It occurs as a solitary firm, cystic nodule, unlike steatocystoma multiplex which presents with multiple subcutaneous nodules. Though steatocystoma simplex is histopathologically similar to steatocystoma multiplex, there is no evidence of an inherited autosomal dominant pattern in steatocystoma simplex. Steatocystoma simplex occurs most commonly in the face and it also occurs in the chest and limbs. Intraorally, it was first described by Olson et al in 1988. To our knowledge, ours is the third report of steatocystoma simplex in the oral cavity described in the literature. Histopathological features include a cystic cavity lined by a corrugated, thin epithelial lining of two or three layers. The characteristic features have been described as the presence of an eosinophilic horny superficial layer with the absence of a granular cell layer and the presence of sebaceous lobules within or adjacent to the cyst wall.

## #34

**NUCLEAR LOCALIZATION OF E-CADHERIN IN ORAL SQUAMOUS CELL CARCINOMA.** P Pugalagiri, Y-S Cheng. Baylor College of Dentistry-Texas A&M University Health Science Center, Dallas. E-cadherin (E-cad) is the most important cell adhesion molecule that maintains stable cell-to-cell contact in epithelium. Down-regulation of E-cad is known to be correlated with tumor invasion and metastasis in carcinomas. Evidence has suggested that down-regulation of E-cad can be due to at least three mechanisms: 1) mutation in the E-cad gene; 2) transcriptional repression; and 3) post-transcriptional alterations that increase degradation of E-cad. Recently, some studies have shown that after cleavage from the extracellular domain, the cytoplasmic domain of E-cad was translocated to the nucleus in some carcinomas. In esophageal squamous cell carcinoma, the cytoplasmic domain of E-cad in the nucleus was also found to activate the AP-1 transcription factor, which induced cyclin D1 promoter activity. These findings suggested a possible role of E-cad in growth of cancer cells. However, whether this event occurs in oral squamous cell carcinoma (OSCC) and/or is involved in oral carcinogenesis is totally unknown. In this study, we hypothesized that nuclear translocation of the cytoplasmic domain of E-cad is a feature of OSCC but not a feature of normal oral keratinocytes. Evidence is presented from Western blot findings.

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## #35

### ORAL AND CUTANEOUS TELANGIECTASES: DIAGNOSTIC AND MANAGEMENT

**CHALLENGES.** D Klingman, J Fantasia. Long Island Jewish Medical Center, New Hyde Park. Background: Multiple telangiectases are associated with several conditions, including hereditary hemorrhagic telangiectasia (HHT), an autosomal dominant inherited disorder. Major forms of HHT include: HHT1, a mutation of the endoglin gene, chromosome 9; HHT2, a mutation of the activin A receptor type II-like kinase-1 gene, chromosome 12. In addition, a mutation of SMAD4, chromosome 18, is found in families with HHT and juvenile polyposis. Arteriovenous malformations (AVMs) and telangiectases of multiple anatomic sites characterize HHT. Clinical diagnostic criteria include: recurrent spontaneous epistaxis; visceral or brain AVMs; and a first degree relative with HHT. Complications associated with HHT1 and HHT2 include headache, brain abscesses, stroke, cirrhosis, high cardiac output secondary to left-right shunting, dyspnea, and cyanosis. Objectives: To review the work-up and treatment of a patient presenting with significant episodic oral bleeding in the context of concerns for possible HHT and other potential conditions. Methods: Case study. An 11-year old adopted female presented for evaluation regarding episodes of spontaneous brisk bleeding from the tongue, which were difficult to control. Clinical evaluation revealed telangiectases of the dorsal tongue and isolated telangiectases of the hand and finger. Results: Work-up revealed a pulse oximeter reading of 99 percent, and normal brain MRI. Contrast echocardiography excluded right to left shunting at the atrial or pulmonary artery level. Other conditions in the differential were excluded. Genetic testing was not performed. Oral bleeding is being managed with QR® Powder topically and epsilon aminocaproic acid (Amicar™). Conclusion: HHT could not be confirmed in this patient.

## #36

### SPINDLE CELL ORAL MELANOMA: CASE PRESENTATION AND LITERATURE REVIEW.

T-I Stiharu, M El-Hakim, A Kauzman. U Montréal, Quebec, McGill U, Montreal. Oral melanoma is rare and accounts for less than 1% of all melanomas. Survival is low and most patients die within 2 years after diagnosis. A 42-year old Caucasian woman presented with an ulcerated gingival mass in the upper left premolar region that had been present for 10 months. The mass was slightly tender and bled easily during oral hygiene procedures. Periapical radiographs showed enlargement of the periodontal ligament space but no central lesion was noted. Incisional biopsy showed a spindle cell proliferation that stained strongly positive for Melan A/MART and S-100 proteins. A diagnosis of spindle cell melanoma was made. PET scan revealed abnormal radiotracer accumulation in the lesional area. Few subcentimetric lung nodules were noted on CT scan but these did not show radiotracer uptake on whole body PET scan. A left hemimaxillectomy was performed with resection of three sentinel nodes which were negative for melanoma. Adjuvant radiotherapy was given because of close margins. Five months after surgery, the patient presented with a large submandibular mass. CT and PET scans suggested metastatic disease with an SUV of 12.2. Suspicious lymph nodes were also noted in the contralateral neck. The small pulmonary nodules, seen on initial work up, had not changed on both CT and PET scan. A bilateral modified radical neck dissection was performed and interferon was given. Seven months later, chest radiographs revealed multiple bilateral pulmonary nodules, suggestive of metastatic disease. CT and PET scans confirmed pulmonary metastasis and enlargement of the nodules. There were no signs of local recurrence. The patient is presently under palliative care. This case emphasizes the poor prognosis of oral melanoma and the importance of early diagnosis.

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## #37

### LYMPHATIC VESSEL DENSITY IN EARLY STAGE ORAL SQUAMOUS CELL

CARCINOMAS. S Faustino, D Oliveira, S Nonogaki, G Landman, A Carvalho, L Kowalski. Bauru School of Dentistry, Bauru, Adolfo Lutz Institute, São Paulo, AC Camargo Cancer Hospital, São Paulo, Barretos Cancer Hospital, Barretos. The aim of this study was to evaluate lymphatic vessel density (LVD) in correlation with the VEGF-C expression by tumor cells and with clinical and pathological variables in patients with oral squamous cell carcinomas (OSCC). Eighty-seven patients with primary OSCC arising tongue or floor of mouth, clinically T1N0M0 or T2N0M0, with occult lymph-node metastases (pN+) and without (pN0), treated in the A. C. Camargo Cancer Hospital, São Paulo, Brazil, from 1968 to 2001, were analysed. Archived paraffin-embedded tumor specimens were sectioned and stained with anti-human podoplanin and VEGF-C antibodies (streptavidin-biotin-peroxidase technique). Lymphatic vessels were counted in intratumoral and peritumoral areas (hot spot) in five high-power fields (X400) from each tumor. Average values were obtained and used as cutoff point. The correlations between LVD and VEGF-C expression and clinicopathological parameters were obtained by chi-square test. The 5 and 10-year survival rates were calculated by the Kaplan-Meier method and compared by log-rank test. No statistically significant difference was found between VEGF-C expression in OSCC in regard to clinicopathological parameters. A correlation between the intratumoral LVD and regional recurrence was found ( $p=0,047$ ) and the occult neck metastasis was a significant prognostic factor for overall survival ( $p=0.030$ ). These findings indicate that high intratumoral LVD may influence the regional recurrence in neck lymph nodes of patients with early OSCC, however this data was not enough to influence the disease-free survival rates of these patients. These findings also reinforce that occult lymph-node metastases (pN+) is the most important prognostic factor for the overall survival of the same patients (FAPESP grant #2007/04907-0).

## #38

CASE REPORT: EXUBERANT TRAUMATIC NEUROMA OF THE TONGUE. S Faustino, A Cury, D Oliveira. Bauru School of Dentistry, Bauru. A 24-year old man presented for removal of a unique soft nodule at the left border of the tongue. The nodule has been present since he was a teenager. His family history revealed no similar findings. Ophthalmological and thyroidal exams were normal. Intraoral examination revealed a unique sharply demarcated, coalescent, pink, pedunculated and superficially ulcerated nodule, measuring 1.0 X 1.0 cm, on the dorsal surface extending for the left border of the tongue. An excisional biopsy was performed under local anaesthesia and the surgical specimen was submitted to the Bauru School of Dentistry Oral Pathology Biopsy Service, University of São Paulo. Histopathological examination showed irregular, haphazardly arranged proliferation of Schwann cells and regenerating nerve fascicles of various sizes and shapes embedded in a fibrous stroma. Superficially, we observed oral mucosa recovered by discontinuous stratified parakeratinized epithelium and an ulcer recovered by pseudo-membrane. Immunohistochemical stains for S-100 protein, EMA, CD57, and collagen IV were accomplished with a standard streptavidin-biotin-peroxidase method on deparaffinized tissue sections. Immunoreactivity was graded with a semiquantitative method and the number of positively stained cells was evaluated in five high-power fields (X400). The immunostaining revealed diffuse and intense expression of S-100 by spindle cells of the nerve fascicles, intense positivity to EMA by perineurium, moderate expression of CD57 (Leu-7) by Schwann cells, and an intense collagen IV expression by endothelial cells of the blood vessels, but no expression of this protein was detected into the lesion. After immunohistochemical analysis the final diagnosis was traumatic neuroma of the oral cavity (FAPESP grant #2007/04907-0).

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## #39

### ZOONOTIC ANATRICHISOMIASIS IN HUMAN ORAL CAVITY; FIRST REPORTED CASE.

N Handoo, M Finkelstein, B Mathison, H Bishop, M Eberhard, J Hellstein. U Iowa, Iowa City, Div of Parasitic Diseases, CDC, Atlanta. This case presents a 44 year-old male patient from Iowa with zoonotic anatrachisomiasis. An immigrant from Mexico, he originally presented with a history of multiple oral and lip ulcers which occasionally resulted in enlarged lower lip. These symptoms progressed to crust formation on the ulcers and subsequently complete resolution within 48-72 hours. Also noted were two submucosal nodules on the dorsal surface of the tongue. An incisional biopsy was carried out to assist with diagnosis. Histopathologic examination revealed presence of coiled nematode with esophagus embedded in a prominent stichosome in the anterior end, paired bacillary bands and small size. These characteristics were consistent with trichuroid features that aided in the identification. This diagnosis was confirmed by Division of Parasitic Diseases at Centre for Diseases Control. Only a handful of human cases of infection with anatrachisomes have been reported in literature. Four of the previous cases occurred as skin lesions, while the most recent one reported in 2005, was an incidental finding in a breast biopsy. The causative parasite for our case has been suggested, but not confirmed, to be *Anatrachisoma buccalis* of the opossum. This is an unusual case as it is the first report involving the oral cavity in humans.

## #40

### GLANDULAR ODONTOGENIC CYST: ANALYSIS OF 46 CASES.

C Fowler, R Brannon, H Kessler, J Castle, M Kahn. Wilford Hall Medical Center, Lackland AFB, LSUHSC School of Dentistry, New Orleans, Baylor College of Dentistry, Dallas, Naval Postgraduate Dental School, Bethesda, Tufts U School of Dental Medicine, Boston. The glandular odontogenic cyst (GOC) is now a well-known entity and although numerous histopathologic features have been described, the exact criteria for diagnosis have not been universally accepted. Furthermore, some features of GOC may also be found in dentigerous, botryoid, radicular, and surgical ciliated cysts. The purpose of this multicenter retrospective study is to further define the clinical, radiographic, and microscopic features of GOC, and to determine which microscopic features are necessary for diagnosis of GOC in problematic cases, such as dentigerous cysts (DC) with metaplastic changes. In our series of 46 cases, the mean age at diagnosis was 51 years with a peak in the 5th-7th decades. 80% of cases occurred in the mandible and 60% involved the anterior portion of either jaw. Most cases presented as either a unilocular or multilocular radiolucency associated with the root(s) of teeth. Cases also presented in dentigerous, lateral periodontal, and globulomaxillary relationships. All cases were treated conservatively (enucleation, curettage, cystectomy, excision). Follow-up on 17 cases revealed a recurrence rate of 41.1% (7/17), with 5 cases recurring more than once (range of follow-up: 2 months - 20 years; average length of follow-up: 8.75 years). The mean interval from initial treatment to first recurrence was 96 months, and from first recurrence to second recurrence was 70 months. All cases exhibited eosinophilic cuboidal (hobnail) cells, a feature necessary for diagnosis in our opinion. The presence of ductlike spaces (microcysts), epithelial spheres, clear (vacuolated) cells, variable thickness, and multiple compartments appears to be most helpful in distinguishing GOC from GOC mimickers in problematic cases ( $p < 0.0005$ ).

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**ODONTOGENIC CARCINOSARCOMA: CASE REPORT AND LITERATURE REVIEW.** R Chikosi, P Freedman, N Segall, PGonzalez. New York Hospital Queens, New York, Dept of OMFS, Caracus, Dept of Pediatrics, Caracus. Odontogenic carcinosarcoma is an extremely rare aggressive tumor of the jaw bones. There have been only 4 previous cases published in the literature. The limited information available indicates that the tumor is more common in the mandible, has a broad age range (19-63), no sex predilection and high propensity for metastasis. We present a case of a healthy 9 year old girl who presented to her general dentist for evaluation of a radiolucent lesion of the mandible extending from the distal to right mandibular first molar to the right retromolar pad area. Biopsies done at another institution were diagnosed as ameloblastoma. The lesion was treated by curettage. Several months later she presented to an oral surgeon with a swelling of the right side of the face and associated facial asymmetry. Imaging studies revealed a lesion that again extended from the right second premolar area to the retromolar area. Perforation by tumor of both mandibular cortices was evident. A partial mandibulectomy with immediate reconstruction was performed. At this time the lesion was diagnosed as odontogenic carcinoma. Because of the rarity of the diagnosis, slides were sent in consultation to the Oral Pathology Laboratory at New York Hospital Queens which established a diagnosis of odontogenic carcinosarcoma based on the histopathologic picture as well as immunohistochemical stains. The patient experienced two recurrences with unsuccessful interventions. Since chemotherapy yielded only a 50% tumor response radiation therapy was initiated. A gastrostomy was performed to improve the patient's nutrition but she died of complications of her tumor 2 ½ years after presentation of her disease.

## #42

**AMELOBLASTOMA WITH INVOLVEMENT OF THE INFERIOR ALVEOLAR NEUROVASCULAR BUNDLE: A CASE REPORT.** A Pourian, M Finkelstein, J Hellstein. U Iowa, Iowa City. Ameloblastoma is a locally aggressive, epithelial odontogenic neoplasm most commonly occurring in the mandible. Due to its anatomic position, the inferior alveolar nerve often lies alongside, or is encompassed by the tumor. No case of invasion into the nerve itself by ameloblastoma has been reported. Because most treatment protocols suggest one-centimeter tumor-free margins, mandibular resection is often performed. However, somewhat contradictorily, some contend that the alveolar canal is not compromised by the tumor and thus advocate inferior alveolar nerve preservation via the pull-through procedure. We report a case of a 63-year-old female who had a jaw lesion of unknown diagnosis treated by an oral surgeon 30 years ago. An incisional biopsy of a three to four centimeter multi-loculated radiolucent lesion was performed in July 2009 and the diagnosis of ameloblastoma was rendered. The lesion was then resected with one-centimeter margins past the radiographic limits of the tumor. Histopathologic examination revealed nests of ameloblastoma within 120 ¼m of the neurovascular bundle. Because a pull-through procedure involves the entire neurovascular bundle, the question arises: what is the minimal tumor-neurovascular bundle distance to assure surgical free margins? We believe the 120 ¼m reported is too close to predict the surgical certainty of the neurovascular bundle pull-through procedure. These findings may alter the guidelines for safe tumor-surgery principles regarding the preservation of the inferior alveolar nerve.

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AMELOBLASTOMAS IN AN ORAL PATHOLOGY SERVICE IN MÉXICO CITY IN 2009. B Aldape, B Cruz Legorreta, F Ocampo Acosta, C Liceaga, R Liceaga. U Nacional Autonoma de Mexico, Mexico City, UABC, HJM. Introduction: A study of the frequency of odontogenic tumors in México city in 1997 reported 349 odontogenic tumors, where 87 were ameloblastomas representing 23.7%. A similar, but regional Latin-American multicentric study published in 2007, reported 163 ameloblastomas representing 22.7% of all odontogenic tumors. The present study is based in 12 ameloblastomas diagnosed among a total of 741 cases accessed in 2009. Objectives: To analyze the clinical-pathological features of these 12 cases. Results: The 12 ameloblastomas represent 1.6% of the total biopsies in our service; 8 cases (67%) UA, 2 cases (17%) SA, 1 case (8%) ameloblastic carcinoma and 1 case (8%) peripheral desmoplastic ameloblastoma. The age range was between 17 and 86 years. Eight cases were found in males and localized in the mandible. Almost all the cases were treated with radical hemi- mandibulectomy. The peripheral desmoplastic ameloblastoma was treated by surgical curettage. Conclusions: The diagnosis in all these cases was delayed because the contributors thought that they were dealing with an inflammatory process (i.e. abscess) during the course of several months, thus given chance to the tumor to reach sizes above 5 cm in diameter. Based on this experience we are proposing to our contributors, that in the presence of a clinical significant enlargement, a panoramic radiograph is indicated before the initiation of any treatment in order to establish a more adequate diagnosis.

## #44

MANTLE CELL LYMPHOMA OF THE ORAL CAVITY. R Kuklani, S Fitzpatrick , D Cohen , I Bhattacharyya. U Florida, Gainesville. Objective: Mantle cell lymphoma (MCL) is an aggressive B-cell lymphoma characterized by overexpression of cyclin D1 and t(11;14) chromosomal translocation. MCL has often been characterized by a poorer prognosis compared to other subtypes of non-Hodgkin lymphoma. It has been reported infrequently in the oral cavity. Study Design: 3 new cases of MCL occurring on the hard palate are presented. The clinicopathologic and immunohistologic features, genetics, prognosis, and treatment for this entity are reviewed along with a summary of 11 other previously reported cases of MCL occurring in the oral cavity. Results: The average age of patients with MCL was 70.9 years with 71% occurring in males and 29% in females. The most common location was the palate (60%) followed by tongue (26%) and 6.7% each for the gingiva and floor of mouth. Typically MCL displays uniform positive reactivity with CD20 and cyclin D1, and some variations are seen with other markers. Significant variation has been reported in the clinical presentation, treatment options and outcomes. Conclusion: Clinicians and pathologists should be cognizant of MCL presenting in the oral cavity and should be aware of the salient clinicopathologic characteristics and poorer prognosis associated with this entity.

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## #45

**INTRAORAL PAPILLARY HEMANGIOMA: CASE REPORT AND REVIEW OF THE LITERATURE.** J Kalmar, B Martin, K McNamara. Ohio State U, Columbus. Papillary hemangioma (PH) is a recently described benign cutaneous vascular lesion with histopathologic similarities to glomeruloid hemangioma. A predilection for the head and neck region has been reported and although affecting a wide age range, most cases have occurred in adults (mean age: 6th-7th decades). A 71-year-old Caucasian male presented with an asymptomatic lesion of several months duration located on the labial attached gingiva between teeth #27 and #28. Clinically, the lesion was described as a 0.5 cm, sessile, smooth, slightly translucent swelling that was firm to palpation. An excisional biopsy was performed and the specimen was submitted with a clinical diagnosis of gingival cyst. Microscopic examination revealed several prominent ectatic vascular channels enclosing papillary and anastomosing intraluminal proliferations of capillaries and endothelial cells. The endothelial cells frequently contained numerous, variably-sized PAS+, diastase-resistant cytoplasmic hyaline globules that occasionally distorted or obscured their nuclei. Lesional cells were uniformly positive for expression of CD31 and CD34 with more limited, primarily perivascular expression of SMA. To our knowledge, this is the first report of papillary hemangioma presenting in the oral cavity. The distinction of PH from glomeruloid hemangioma may have clinical relevance as the latter diagnosis is considered by some authorities to be specific for POEMS syndrome (Polyneuropathy, Organomegaly, Endocrinopathy, M-protein, Skin changes).

## #46

**INTRAVASCULAR FASCIITIS: REPORT OF AN INTRAORAL CASE AND REVIEW OF THE LITERATURE.** A Chi, M Richardson, W Dunlap, Jr., B Neville. Medical U. of South Carolina, Charleston, Private Practice, Anderson. Intravascular fasciitis (IF) is an unusual variant of nodular fasciitis. It is characterized by intraluminal, intramural, and extramural involvement of small to large arteries or veins. Only three cases involving the oral cavity have been reported previously in the literature. Here we present an additional case of IF arising in the submucosa of the upper lip of a 20-year old female. Microscopic examination showed a well-circumscribed, nodular proliferation of spindle cells arranged in intersecting fascicles. Occasional multinucleated giant cells also were noted. The tumor was present within the lumen of an intermediate-sized artery and extended into adjacent smaller vessels, thereby creating a multinodular appearance. Extramural extension into the surrounding connective tissue also was observed. Immunohistochemical stains showed the tumor cells to be positive for smooth muscle actin and negative for S-100 protein. The multinucleated giant cells were positive for CD68. CD31 and CD34 immunostains exhibited no reactivity among the spindle cells but highlighted a prominent capillary network within the background. Out of 28 cases of IF reported thus far (including the present case), the majority (n=21) have arisen in individuals in the 1st through 3rd decades; there is a 1.3:1 male:female ratio. Sites of involvement include the head and neck (n=11), upper extremity (n=8), lower extremity (n=7), and trunk (n=2). Conservative excision is standard treatment, although local recurrence has been reported in three cases. It is important for the pathologist to be aware of this lesion in order to avoid misdiagnosis as a sarcoma with angioinvasion.



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## #47

AN ATTEMPT TO FIND OUT THE ORIGIN OF GLOMUS TUMOR. M El Abany, A Abd El-Latif. U, of Alexandria, Alexandria, Pharos U, Alexandria. Glomus tumors are uncommon, benign neoplasms which are commonly seen in the extremities, particularly in the sublingual region of the finger and less common seen intraorally . The exact origin of glomus tumors is still uncertain. In literature, it was suggested that the perivascular tumors recapitulate the appearance of the modified myoid cells that support or invest blood vessels, others claimed that the term paraganglion is most appropriate as cells of the carotid body originate from neural crest and migrate in close association with autonomic ganglion cells. This study is a trial to give more spot light on the histopathological aspect of this relatively rare tumor within the head and neck region, and to try to find out its pathogenesis. 12 specimens of the tumor were collected. 6 cases were carotid body tumor, 2 were in the submandibular region and 4 in the tongue. Histochemical as well as immunohistochemical analysis were performed. The glomus cells stained positive with Gomori's reticulin stain, with the presence of intracellular fine fibrils taking different arrangement and thickness. This would suggest that the origin of glomus tumors could be either pericytes or smooth muscle. On the other hand all sections showed positive reaction to smooth muscle Actin as well as Collagen type IV antibodies which suggest that the origin of glomus tumor is smooth muscle. Further studies with larger number of cases and the usage of more immunohistochemical antibodies or even genetic analysis are recommended for further understanding of the origin of this tumor

## #48

ELECTROMYOGRAPHIC DATA ON MYOSIN HEAVY CHAIN CONTENT OF TMD MASTICATORY MUSCLES. N Thomas, Las Vegas Institute of Advanced Dental Studies. The analysis of electromyographic amplitude and frequency of TMD masticatory muscles may be used in place of histochemical and immune typing for histological diagnosis to demonstrate the myosin heavy chain composition of masticatory muscles of TMD subjects and their relaxation by the effect of transcutaneous electroneural stimulation of the cranial nerves V, VII and XI. The latter procedure enables the oral pathologist to obtain the relaxed physiological rest position from which a myotrajectory to an acceptable occlusal intercuspal position may be proven by spectral analysis of the electromyogram

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**DETERMINATION OF SURVIVAL AND RECURRENCE OF OSCC AND EFFECTIVE FACTORS ON HOSPITALIZED PATIENTS.** H Khademi, G Jahanshahi, Z Golestannejad. School of Dentistry and Torabinejad Research Center, Isfahan U of Medical Sciences. Introduction Oral cancer is one of the most ten reasons of death.. Almost 95% of oral cancers is SCC. survival and recurrency is two factors must be consider to stimate of prognosis of SCC. prognostic factors may affect survival and recurrency of SCC..In this study focused on this risk factors associated whit recurrency and survival of SCC. Metod & material: The aim of the study was evaluation of factors that influence survival and recurrency of SCC .A cohort tumor registry analysis was made of patients with SCC of the oral cavity who were treated in the hospitals of Isfahan university school of medicin between 2001and 2008 .Reffering to the hospital questionnaire we obtained all the information. Result: Ch-square analysis showed that clinical staging,treatment plane,smoking and histologic grade had the influence on survival and Kaplan-mayer analysis showed that patient with diffrent clinical staging ,histologic grading ,treatment plans and smoking had significant different cumulative survival.chi-square show that clinical staging ,treatment plan,smoking had influence on recurrency.but histologic grade did not affect the incidence of recurrency. Discussion: This study show that clinical stage and treatment plane and ciggarate use are factors influence survival .therefore when diagnosis and treatment of SCC with clinical low grade stage was soon, the chance of survival was further. It show that diagnostic screen methods and treatment plan with more survival chance must be consider in treatment plane and advise the patient not smoking after initial diagnosis of SCC increase the survival.

## #50

**COMPARATIVE STUDY OF SODIUM VARNISH 5% EFFECT AND LASER ND:YAG DENTINAL HYPERSENSITIVITY.** H Khademi, A Mogharehabet, Z Abdi. School of Dentistry and Torabinejad Research Center, Isfahan U of Medical Sciences. Introduction Dentin hypersensitivity is one of the most common complication from after periodontal therapy. So far many investigators use different types of fluoride and laser for treatment of this complication. The aim of this study was evaluation of effect of 5% sodium fluoride varnish and Nd: Y AG laser and their combinative use on dentine hypersensitivity treatment. Method & Material: We chose a group of patients who had totally 60 hypersensitivite teeth.

