



American Academy of Oral
& Maxillofacial Pathology

Essay Program

May 7 & 8, 2007

Kansas City, Missouri

**ESSAY PROGRAM 1
MONDAY, MAY 7, 2007**

#1 8:00 AM

OSTEONECROSIS OF THE JAWS – EXPOSED BONE WITHOUT THE BISPSPHONATES. J. Bouquot, E. Moore. University of Texas Dental Branch at Houston. Background: Hundreds of examples of bisphosphonate associated osteonecrosis of the jaws (ONJ, phossy jaw) have been reported as painful, chronically exposed alveolar bone. No case has been reported in non-irradiated individuals with a documented lack of bisphosphonate use. Objective: To report several cases of chronically exposed alveolar bone in persons not using bisphosphonates. Methods: Cases were collected from the practices of the investigators. Detailed medical histories ruled out bisphosphonate use in all cases. Results: 3 patients without active periodontitis (2 males, 1 female; 17, 34, 38 years of age), presented with exposed alveolar bone with minimal surrounding soft tissue inflammation; 2 lesions were painful. 2 lesions occurred after acute trauma; 1 developed “spontaneously.” In the 2 painful cases exposed bone sequestered after 6 and 14 months; the nonpainful lesion remained unchanged, with exposed bone, for more than 8 years. 2 cases showed unremarkable radiographic features; 1 showed a poorly demarcated radiolucency from crestal to apical bone. All cases were microscopically diagnosed as acute osteomyelitis with sequestrum formation. No etiologic factors, other than the original traumatic episode, could be found to explain the lack of healing in these individuals. Conclusion: Exposed alveolar bone can result from idiopathic factors not related to bisphosphonate use. The identification of such factors should be pursued as it may aid in the prevention or prediction of ONJ and may provide additional means by which to treat refractory cases. We propose the diagnostic term “bisphosphonate-like osteonecrosis” (BLO) for these look-alike cases.

#2 8:12 AM

ALTERATIONS OF p16^{INK4a} PROTEIN EXPRESSION IN ORAL SMOKELESS TOBACCO LESIONS. R Greer, A Meyers, S Said, K Shroyer. U of Colorado Schools of Dentistry and Medicine, Aurora. Objectives: This study correlates the detection of p16^{INK4a}, and pRb with the detection of high risk HPV infected oral lesions associated with the use of smokeless tobacco as compared with patients that do not have a history of smokeless tobacco use. Design: Tissue samples were subjected to p53, p16^{INK4a} evaluation by indirect immunohistochemical methods using commercially obtained antibodies and HPV analysis was performed by MY09/MY11 L1 consensus sequence PCR. The benign clinico-pathologic entity alveolar ridge keratosis (ARK) served as controls. Subjects: Ninety three biopsies were evaluated, sixty seven smokeless tobacco keratosis (STKs), and sixteen squamous cell carcinomas (SCC). Results: Focal p16^{INK4a} expression was detected in 9/26 Grade I STKs, 12/27 Grade II STKs, in 10/28 Grade III STKs, in 14/29 SCCs and in 3/10 ARKs. p16^{INK4a} expression in STKs and in ARKs was typically weak but was strongly positive (2 to 3+) in a high proportion of SCCs. p53 was identified in 100% of STKs, in 27/29 SCCs, and in 100% of ARKs. HPV DNA was detected in 12/26 Grade I STKs, in 3/21 Grade II STKs, in 0/15 Grade III STKs, in 4/26 SCCs, and in 1/6 cases of ARK. Conclusions: HPV-mediated disruption of cell cycle regulation is not a common feature of smokeless tobacco keratosis, especially high grade smokeless tobacco keratosis. There is, however, an apparent relationship between the grade of smokeless tobacco keratosis and the presence of HPV; with HPV rarely being identified in high grade lesions. p16^{INK4a} is generally expressed at lower levels in STKs and is unrelated to lesion grade. Supported by a grant from U.S. Tobacco Corp. and the University of Colorado Foundation

ESSAY PROGRAM 1
MONDAY, MAY 7, 2007

#3 8:24AM

THE EFFECTS OF BISPHOSPHONATES ON OSTEOBLASTS *IN VITRO*. A. Naidu, R.D. Spears, P.C. Dechow, J.M. Wright, H.P. Kessler, L.A. Opperman. Baylor College of Dentistry, TAMHSC, Dallas, TX. Bisphosphonates are used therapeutically to inhibit bone resorption. Recently, intraoral bone necrosis has been reported in patients being treated with bisphosphonates. Primary rat osteoblasts were cultured in media containing increasing concentrations of two different bisphosphonates. Alendronate was added to half of the cells at 10^{-6} M, 10^{-5} M, 10^{-4} M, and 10^{-3} M concentrations. Zoledronate was added to half of the cells at 3 μ M, 10 μ M, 60 μ M, and 100 μ M concentrations. Control groups received culture media containing no medication. Supernatants were harvested after 24, 48, and 72 hours and analyzed with enzyme-linked immuno-absorbent assays (ELISAs) to measure the expression of IL-6, TGF- β 1, and RANKL. Live and necrotic cell numbers were assessed with trypan blue exclusion assays. Both alendronate and zoledronate treatment groups showed significant decreases in viability as concentration increased. ELISA analysis revealed significant increases in TGF- β 1 concentration in treatment groups. Zoledronate control groups reflected a temporary increase in RANKL, which did not occur in treatment groups with either drug. ELISA analysis revealed no significant differences in IL-6 production between any of the groups. The cytotoxic effect of high concentrations of alendronate and zoledronate was evidenced by the low number of remaining viable cells at 72 hours. This effect was independent of the TGF- β 1 production. The increase in expression of TGF- β 1 could account for the beneficial effects of the drugs and suggests a possible mechanism of action for bisphosphonates. At low drug concentrations, the increase in TGF- β 1 was delayed, which suggests that bisphosphonates may still have a therapeutic benefit at lower concentrations over a longer treatment time without the cytotoxic effects that can lead to osteonecrosis.

#4 8:36AM

OSTEOLIPOMA OF THE BUCCAL MUCOSA: CASE REPORT AND LITERATURE REVIEW. D.Sundararajan, G.Gallagher, S.Kabani and V.Noonan, Boston University, Boston, MA. Lipoma, a tumor composed of mature fat, represents by far the most common true neoplasm of mesenchymal tissue. Recognized histologic variants of lipoma, such as angiolipoma, chondroid lipoma, spindle cell lipoma, pleomorphic lipoma and osteolipoma are much less common. Osteolipoma , which is a rare variant, consists of lipoma with osseous metaplasia. These lesions have also been called ossifying lipoma. Bone production is mainly encountered in lipomas of large size and long standing duration. Only very few cases of osteolipoma located in the oral cavity have been reported in the literature. We present a case of osteolipoma located in the buccal mucosa. The patient at presentation was a 27 year old woman with a deep, firm, mobile lesion measuring 1.0 x 0.7cm on the right buccal mucosa. The histologic features of this rare case will be presented along with a brief review of the literature.

ESSAY PROGRAM 1
MONDAY, MAY 7, 2007

#5 8:48AM

USE OF ORAL CYTOLOGIC SMEARS FOR THE DIAGNOSIS OF UNCOMMON PATHOSES. J. Kacher, M. Lerman, R. Reich, S. Kerpel, P. Freedman. New York Hospital Queens, NY. Oral cytologic smears are typically used to diagnose candida and herpetic infections. Three cases of oral pathoses diagnosed with oral cytologic smears are discussed. For each case the patient either refused biopsy, or blood clotting values precluded an invasive procedure. The first case was that of a 19 year old female who presented with persistent vesicles and erosions over much of her oral mucosa. Biopsy was refused. The presence of Tzanck cells on a PAP-stained smear suggested a diagnosis of pemphigus vulgaris, which was later confirmed after permission to biopsy was granted. The next case involved a 60 year old male patient with deep, necrotic ulcers on the palate, and the right and left mandibular vestibule. Oral smears from several locations revealed atypical cells on a PAP-stained smear, which were re-stained and proved positive for myeloperoxidase, consistent with a diagnosis of acute myelogenous leukemia. Flow cytometric studies later proved the patient to have non-M3 type AML. The last case was of a 69 year old male with a black necrotic lesion on the midline of the hard palate. A PAS-stained oral smear revealed non-septate branching fungal organisms consistent with mucormycosis. Oral cytologic smears are a useful, minimally invasive technique that can be applied in a variety of clinical situations to accomplish rapid diagnoses, even on uncommon oral lesions.

#6 9:00AM

THE EFFECTS OF SULINDAC SULFIDE ON LARYNGEAL SQUAMOUS CELL CARCINOMA IN VIVO AND IN VITRO. M. Scheper, N. Nikitakis, R. Chaisuparat, S. Montaner, J. Sauk. U. Maryland, Baltimore. The NSAID sulindac exerts anti-proliferative and pro-apoptotic effects in various cancer cell lines. Here we assess the effects of sulindac, as a therapeutic alternative, on head and neck squamous cell carcinoma (SCC) cells in vitro and in vivo. In vitro, laryngeal SCC (HEP-2) cells were treated with various cyclooxygenase (COX) inhibitors or transfected with constitutively active Stat3 (c-Stat3) or survivin vectors and analyzed using Western blot, Annexin V and cell proliferation assays. In parallel, nude mice were injected subcutaneously with HEP-2 cells and, following tumor growth, treated intraperitoneally with sulindac or left untreated. Tumors were evaluated based on weight and analyzed for survivin and tyrosine-phosphorylated Stat3 (p-tyr Stat3) expression. In vitro studies confirmed the anti-proliferative and pro-apoptotic effects of sulindac, but not other COX inhibitors, on HEP-2 cells, and the downregulation of active and total Stat3 and survivin protein expression. Moreover, c-Stat3 transfection or survivin forced expression partially rescued the anti-proliferative effects of sulindac. In vivo studies showed considerable repression of HEP-2 xenograft tumor growth in the mice treated with sulindac versus controls over the treatment period, with a near complete resolution at ten days. Additionally, tumor specimens treated with sulindac showed a downregulation of p-tyr Stat3 and survivin protein expression. Taken together, our data suggest for the first time, a specific inhibitory effect of sulindac on growth and survivin expression of laryngeal SCC cell lines and xenografts in a Stat3-dependent manner, supporting its potential as a novel therapeutic approach for head and neck cancer.

ESSAY PROGRAM 1
MONDAY, MAY 7, 2007

#7 9:12AM

LOCATION BASED PLOIDY ANALYSIS FOR ORAL PREMALIGNANT LESIONS. M.N. Islam, D.M. Cohen, E. Veenker, L. Kornberg, I. Bhattacharyya. U of Florida, Gainesville. **Background:** The location of oral leukoplakia correlates strongly with the probability of finding dysplastic or malignant changes at biopsy. The floor of mouth exhibits greatest risk (42.9%) followed by the tongue (24.2%) and lip (24%). The possibility of finding dysplastic or malignant alterations in oral leukoplakia ranges from 15.6-39.2%. It is well known that the 5-year survival of oral squamous cell carcinoma can be improved dramatically with early detection. **Aim:** We hypothesized that since aneuploidy is predictive of future conversion to malignancy, high-risk sites (floor of mouth, tongue, lips) would exhibit greater aneuploidy than low-risk sites (palate, gingiva, buccal mucosa). **Material & Methods:** 60 archival samples (36 females, 20 males) from biopsies taken from various high/low risk locations of the oral cavity. Sections were stained using the Blue Feulgen Stain Kit for DNA Ploidy Analysis (Clariant). Ploidy was analyzed using a ChromaVision ACIS II (Clariant) system wherein the amount of Feulgen stain is proportional to the amount of nuclear DNA and a DNA histogram is generated from the information obtained using an image analyzing software. **Results:** An ANOVA analysis followed by the Student's t test revealed significant differences between means ($p < 0.05$). Lesions originating from lateral/ventral tongue (85%), floor of mouth (50%), soft palates (44%) exhibited a higher frequency of aneuploidy than lesions from gingiva (22%) or lower lip (25%). **Conclusions:** The data from this small series of cases in this preliminary study demonstrate that dysplastic lesions obtained from the floor of the mouth and lateral/ventral tongue have a definitive higher frequency of aneuploidy. We are currently in the process of correlating this data with follow-up information in order to draw inferences on the role of ploidy as a significant prognostic indicator.

#8 9:24AM

DEVELOPMENT AND PRELIMINARY EVALUATION OF A VIRTUAL SLIDE-BASED PROGRAM FOR UNDERGRADUATE ORAL PATHOLOGY TEACHING D.Chugh, J.Kermalli, F.Salajan, J.McComb, J.Nyhof-Young, G.Bradley U. of Toronto, Toronto, Ontario, Canada. Virtual slides are increasingly used for pathology education. They eliminate the problems of breakage of glass slides, fading of stains with storage and variability of sections cut from the same tissue block. A virtual slide can be viewed simultaneously by many users and accessed through the Internet. **Objective:** to develop a novel, virtual slide-based program for teaching microscopic examination in our undergraduate oral pathology course. A set of 85 annotated virtual slides were prepared with *ScanScope GS®* and *Zoomify Enterprise®* software, and hosted online using the *BlackBoard®* learning management system. Each slide has a Notes Box to guide the student through the section, with linkages to clinical photographs and radiographs. Animated annotations are provided to indicate diagnostic features. **Findings:** In the pre-implementation evaluation of the program by student volunteers and course instructors, users found the virtual slides easier and less time-consuming to navigate, compared to glass slides. The image quality was rated as very good. The virtual slide program was implemented for a class of 25 students in the fall term of 2006, culminating in a term test. The outcome of the virtual slide-based term test is compared with that for 25 students who took a glass slide-based laboratory course with the same syllabus, over the same period. The students who took the virtual-slide program scored higher on the term test (average mark 88.8% compared to 68.7%; $p < 0.001$). These students have the advantage of having completed a lecture course in Oral Pathology in the previous year, so that a rigorous comparison between test results of the two groups is difficult. **Conclusions:** The virtual slide program has been uniformly well received by students and effective in teaching histopathology without using microscopes. Future work includes implementation of the program for the full third year class of 95 students and analysis of the effectiveness of various components of the virtual slide program.

**ESSAY PROGRAM 1
MONDAY, MAY 7, 2007**

#9 9:36AM

JUVENILE INFLAMMATORY PAPILLARY GINGIVAL HYPERPLASIA-A NEW ENTITY. J Wright, J Chang, W Binnie, and H Kessler. Baylor College of Dentistry, Texas A&M U HSC, Dallas Texas. Inflammatory papillary hyperplasia is a reactive tissue growth that usually develops in the palate beneath a denture in elderly patients. Poor fit and candidiasis are thought to be etiologic factors in the development of this lesion. Here, we report 43 cases of inflammatory papillary gingival hyperplasia in young children. Inflammatory papillary gingival hyperplasia in young children has characteristic clinical and histopathologic features. Clinically, the average age of patients in this study is 11 years, females predominate by a ratio of 3 to 1, 84% are Caucasians, and nearly all of the lesions are located on the anterior gingiva with the maxilla predominant (81%). The most classic clinical presentation is a papillary, pedunculated, red and easily bleeding gingival growth in young children. Some of the lesions are related to placement of orthodontic brackets. Histopathologically, the lesions exhibit thin papillary epithelial hyperplasia and prominent intercellular edema of the squamous epithelium mixed with chronic inflammatory cells and overlying exocytosis. Based on the characteristic clinical and histological features of this lesion, we conclude that this lesion is a distinct subtype of gingival hyperplasia, predominantly occurring in young patients. We propose the term juvenile inflammatory papillary gingival hyperplasia for this lesion. Although the possibility of viral etiology can not be ruled out, we suspect that irritation is the major cause of this lesion, and further studies are pending on etiologic factors.

#10 9:48AM

EXPRESSION OF EPIDERMAL GROWTH FACTOR RECPTOR (EGFR) AND HER-2/NEU IN SALIVARY GLAND TUMORS: A TISSUE MICROARRAY IMMUNOHISTOCHEMICAL ANALYSIS. E. Philipone, R.Kelsch, B. Mehrotra, M. Lingen, J. Fantasia Long Island Jewish Medical Center, New Hyde Park, NY., University of Chicago, IL. The literature on salivary gland neoplasia receptor status is limited and somewhat inconsistent especially when compared to tumors of other anatomic sites. EGFR and HER-2/neu are members of the EGFR/erbB receptor family and play important roles in cell proliferation, survival, migration and differentiation. Over-expression of these receptors has been linked to tumor development. EGFR and HER-2/neu have been sited as potential therapeutic targets. Purpose: To investigate the expression of HER2-neu and EGFR in benign and malignant salivary gland tumors using tissue microarray immunohistochemical analysis. This study was approved by the institutional review boards of the respective institutions. Methods: A retrospective analysis of the immunohistochemical expression of EGFR and HER-2/neu in benign and malignant salivary gland tumors forms the basis of the study. The tissue microarray consisted of two 1mm cores from each of 170 salivary gland tumors (50 and 120 specimen microarrays). One hundred twenty-five of these fulfilled the inclusion criteria of two cores per case. Sections were analyzed using standard or recommended scoring criteria. Results: Receptor status for both EGFR and HER-2/neu varied in both benign and malignant salivary gland tumors, ranging from no immunostaining to intense complete staining of tumor cell cytoplasmic membrane. Conclusion: Some benign and malignant salivary gland neoplasms over-express HER-2/neu and/or EGFR. Positive receptor status could support the use of molecular targeted agents should adjuvant therapy be warranted.

**ESSAY PROGRAM 1
MONDAY, MAY 7, 2007**

#11 10:00AM

CYSTINOSIS, FANCONI SYNDROME AND DENTIGEROUS CYSTS. P. Devilliers, R. Gutta and V. Szymela. U. of Alabama at Birmingham. Cystinosis is an autosomal recessive storage disorder and the most common inherited cause of Fanconi Syndrome. Recently, the causative gene CTNS was mapped to chromosome 17p13 and showed to be a lysosome cystine promoter. Infantile cystinosis causes Fanconi Syndrome by 12 months of age and end-stage renal failure by age 10. There is also growth retardation and severe photophobia from cystine crystal deposits in the cornea. Accumulation of cystine in all tissues eventually leads to multisystemic disease. A new treatment with cysteamine was introduced to delay disease progression. We present the first documented case of cystine crystal deposition in a dentigerous cyst wall of a 36 year-old male who presented with a radiolucency on the lower jaw. There was also cystine crystal deposition in the gingiva but not in the periodontal ligament or the dental pulp. Furthermore, cystine crystal accumulation in a dentigerous cyst appears to have a different mechanism from cystine crystal deposition in the cornea and the proximal renal tubulopathy.

#12 10:12AM

HUMAN PAPILLOMAVIRUS ASSOCIATED OROPHARYNGEAL SQUAMOUS CELL CARCINOMAS IN NON-SMOKERS & NON-DRINKERS: A CASE CONTROL STUDY. E. Andrews and J. Webster-Cyriaque. U. North Carolina School of Dentistry, Chapel Hill. Background: Head and neck squamous cell carcinoma (HNSCC) affects 30,000 in the US each year resulting in ~8000 deaths. Incidence of HNSCC has remained stable, while incidence of oropharyngeal squamous cell carcinoma (OSCC), a subset of HNSCC, increased 3% annually from 1973 to 2001. Many OSCCs can be attributed to exposure to tobacco and alcohol, but patients with no known risk factors still develop cancer. While high-risk, integrated Human Papillomavirus (HPV) DNA has been consistently detected in 20% of HNSCCs and in 50% of the OSCC subset, to date case-control studies have not been performed. The purpose of this study was to determine the odds of high-risk HPV infection in malignant and benign lesions of non-smoker/non-drinkers (NS/ND) utilizing a case-control design. Methods: 36 NS/ND cases and controls were identified, DNA extracted from paraffin blocks containing tumor tissue, nested PCR utilizing MY9/11, GP5/6 primer sets targeting a conserved region of L1, to identify HPV presence, and typing by DNA sequencing to determine high-risk strains. Results: Analysis shows high-risk HPV DNA in 15 of 18 cases, 85% high-risk HPV in the base of tongue and 80% in tonsils, and low-risk HPV DNA in 3 controls. Four high-risk HPV cases are partners. Each of the partners had tonsillar cancer with associated HPV16 infection in their tumor tissue and no HPV in their benign contralateral tissue. Conclusions: HPV, the primary etiological factor that transforms cervical epithelium is implicated in most cervical cancers, leading to recent development of a HPV vaccine. HPV presence in these OSCC reveals the infectious nature of some OSCC and suggests HPV's similar role in transforming oral epithelium, providing further evidence of the need to vaccinate men and women. We have detected high-risk HPV in the majority of cases. Because of the close link between HPV and OSCC, early identification of the virus may provide a crucial marker of high-risk susceptibility for developing these malignancies.

ESSAY PROGRAM 1
MONDAY, MAY 7, 2007

#13 10:24AM

INTRAORAL MYCOSIS FUNGOIDES: A CASE REPORT AND REVIEW OF THE LITERATURE. M. Rosebush, R. Baiocchi, P. Porcu, J. Kalmar and C. Allen. The Ohio State University, Columbus. Mycosis fungoides (MF) is a unique CD4+ T-cell lymphoma that predominantly involves the skin with marked epidermotropism. We present a 58-year-old female who had a several-year history of multifocal, red, pruritic skin lesions. Skin biopsies from the preceding 7 years were suggestive of, but not conclusive for, MF. The patient was successfully treated with PUVA therapy in 2004. In March 2005, she developed skin lesions on the legs and trunk, as well as erythema and mild enlargement of the right maxillary buccal gingiva, vestibule and buccal mucosa. A biopsy of the maxillary vestibule showed a dense, epitheliotropic lymphoid infiltrate with scattered Pautrier microabscesses. The majority of lesional cells were positive for CD2, CD3, CD4 and CD62L. A monoclonal population of T-lymphocytes was confirmed by TCR beta clonality assay. The histopathologic, immunopathologic, and molecular results of the oral biopsy confirmed the diagnosis of MF. A systemic workup revealed mediastinal lymphadenopathy that was hypermetabolic by PET scan. She was enrolled in a clinical trial delivering combination therapy with Campath 1H, an anti-CD52 monoclonal antibody, and CHOP. Physical exam and restaging CT/PET surveillance demonstrated resolution of the cutaneous lesions and mediastinal lymphadenopathy. However, her intraoral disease persisted and progressed to involve the soft and hard palate. Local external beam radiation therapy achieved complete resolution of her oral disease. Approximately 35 cases of intraoral involvement by MF have been reported in the English-language literature. Oral cavity involvement is typically a sign of systemic progression of disease and historically has been associated with a poor prognosis.

#14 10:36AM

HEAD AND NECK SQUAMOUS CELL CARCINOMA (HNSCC)-MONOCYTE (MO)-LIPOPOLYSACCHARIDE (LPS) INTERACTIONS PROMOTE CYTOPROTECTIVE AND PRO-ANGIOGENIC FACTORS. A. Lam-ubol and Z. Kurago. The University of Iowa, Iowa City. Our own and other recent studies suggest that innate immune system cells and bacterial products are common components of the HNSCC environment and may contribute to HNSCC pathogenesis. One potential mechanism supported by our data is that soluble factors, including IL-6, produced through HNSCC-MO-LPS interactions, consistently activate Signal Transducer and Activator of Transcription (STAT)3 in HNSCC, which promotes proliferation, angiogenesis and protection from apoptosis important for cancer progression. Hypothesis: MO and LPS contribute to HNSCC progression by facilitating protection of HNSCC cells and by promoting growth and angiogenesis. Objective: To determine the role of MO and LPS in HNSCC progression. Methods: IRB approved the study protocol. HNSCC lines or keratinocytes were cultured alone or with MO from two healthy donors +/- *E. coli* LPS, and induced factors were measured by ELISA and flow cytometry. The effects of IL-6 and supernatants from HNSCC-MO-LPS co-cultures on IFN-gamma-mediated HNSCC cell growth suppression were evaluated by the WST-1 assay. Results: IFN-gamma-mediated growth suppression of keratinocytes and two out of three HNSCC lines tested was partially relieved by IL-6 and abolished by supernatants from MO-LPS-containing co-cultures with respective cell lines. TNF-alpha production was suppressed, while VEGF production greatly increased in the HNSCC-MO-LPS co-cultures. Conclusion: HNSCC-MO-LPS interactions appear to favor production of cytoprotective factors and enhance the production of angiogenesis-inducing VEGF, which are likely to promote HNSCC progression. (Supported by Anandhamahidol Foundation)

**ESSAY PROGRAM 1
MONDAY, MAY 7, 2007**

#15 10:48AM

HEPATOCELLULAR CARCINOMA METASTATIC TO THE CORONOID REGION AND ZYGOMA. V. Murrah, J. Mohorn, B. Howerton, E. Andrews and R. Padilla. U.of North Carolina, Chapel Hill; Piedmont Oral Surgery Associates, Greensboro, North Carolina; Carolina Oral & Maxillofacial Radiology, Raleigh. Metastatic carcinoma is the most common form of malignancy reported in the jaws and may be the first indication of an undiscovered primary at a distant site. Hepatocellular carcinoma (HC) is rarely reported as metastatic to the jaws. Our objective is to report a case and discuss the findings in the context of previously reported cases. A 74 y.o. male was referred to a local oral surgeon due to spontaneous fracture of the right coronoid process while eating. Past medical history included hypertension, Type II diabetes, pneumonia and cirrhosis. Cone beam CT images revealed obvious fracture of the right coronoid and a lesion of the right zygoma. Biopsy revealed a malignant neoplasm comprising solid sheets of granular basophilic cells with large nuclei and prominent nucleoli. Nuclei appeared to be located on the periphery of the cells. Mitoses were seen, but these were not common. Fibrous septae separated groups of neoplastic cells and focal necrosis was seen. PAS staining was positive, with some diastase resistance. Immunostaining (IHC) results were as follows: AE1/AE3 and CEA, positive; CK-7 and S-100, negative. Small specimen size precluded additional IHC. The specimen was signed out as a malignant epithelial neoplasm with the recommendation that the patient be referred for metastatic disease work-up. The patient subsequently developed a right zygomatic mass and non-tender abdominal wall mass. A CT PET revealed multiple destructive hypermetabolic bony lesions throughout the axial skeleton, consistent with metastatic disease. A hyperbolic irregularly enhancing lesion in the inferior right hepatic lobe raised the concern of primary hepatocellular carcinoma, especially in light of the underlying cirrhosis. The patient's coronoid biopsy was subsequently interpreted as metastatic hepatocellular carcinoma and the patient was placed on Xeloda. Due to location in the parotid region, salivary gland malignancy had been considered. The caveat is given that in cases of neoplasms of this location with granular cytoplasm, one should also consider metastatic HC.

#16 11:00AM

EFFECTS OF BERRY GEL CHEMOPREVENTION ON LOSS OF HETEROZYGOSITY INDICES IN ORAL EPITHELIAL DYSPLASIA. B. Shumway, L. Kresty, P. Larsen, G. Stoner, S. Mallery. The Ohio State University, Columbus. Loss of heterozygosity (LOH) at specific chromosomal loci (3p14, 9p21, 17p13) has previously been reported in 20-83% of oral pre-malignant lesions by multiple investigators, including our laboratory. One study showed that LOH at 3p14 and/or 9p21 and one additional locus carried a 33-fold greater risk of malignant progression. Return to a heterozygous state at these loci was therefore selected as a relevant biomarker for our laboratory's 6 week clinical trial. This investigation will determine therapeutic efficacy of a topically applied bioadhesive gel containing 10% freeze-dried black raspberries (FBR) in persons with oral epithelial dysplasia (OED). The study incorporates intra-patient comparison of untreated and post-treated samples, enabling each participant to serve as their own internal control. Hemisection of the clinically apparent lesion is performed, followed by q.i.d. application of the FBR gel. After 6 weeks, a final biopsy is taken to include the entire pre-treatment lesional area. All control patients (N=10) and the majority (N=17/20) of the dysplasia patients have completed the trial. Presence of LOH from pre-treatment biopsies will be compared to post-treatment tissues derived from remaining treated OED and to healed epithelium at the biopsy site. Thus, treatment effect in existing dysplastic epithelial cells and repopulating keratinocytes will be determined. Dysplastic epithelium and matched normal connective tissue (internal control) are laser capture-microdissected followed by DNA isolation and PCR amplification. Fluorescently-labeled DNA fragment visualization and LOH analyses using the Applied Biosystems 3730 Genetic Analyzer and Genemapper® software are ongoing.

ESSAY PROGRAM 1
MONDAY, MAY 7, 2007

#17 11:12AM

DEVELOPMENT OF AN ELISA FOR CHRONIC ULCERATIVE STOMATITIS. L.W. Solomon, V. Kumar, S. Sinha. Tufts U. Boston MA, IMMCO Diagnostics Inc. Buffalo, NY, and State U. of New York, Buffalo. Chronic Ulcerative Stomatitis (CUS) is an immunologically mediated, mucocutaneous condition, primarily affecting the oral cavity with chronic, exacerbating and remitting ulcerations. Diagnosis is desirable because CUS lesions are responsive to hydroxychloroquine pharmacotherapy. Histology is often lichenoid although not diagnostic, and immunofluorescence (IF) studies are needed for diagnosis. The antigen $\Delta Np63\alpha$, is an isoform of the p53 / p63 / p73 family of transcription factors and a protein normally present in basal cell nuclei of squamous epithelia. Immunogenic epitopes of $\Delta Np63\alpha$ are in the N-terminal portion of the protein. Amino acids 1-275 were PCR amplified with a His tag, cloned into a pET28c vector and transfected into BLR(DE3) cells. Protein was recovered and purified and used to coat microtiter plates. Human sera (1:100 dilution) and secondary antibody (HRP conjugated goat anti-human IgG, 1:10,000 dilution) were used in an Enzyme-Linked ImmunoSorbent Assay (ELISA). TMB substrate, then stop solution, were added and results read at 450nm with a BioRad Model 680 microplate reader with Microplate Manager 5.2 PC software. Positive serum samples from CUS patients were previously diagnosed by direct IF and demonstrated antibodies to $\Delta Np63\alpha$ on immunoblot. Control sera were diagnostic samples from patients with dermatologic or rheumatic clinical conditions and were immunologically non-reactive with $\Delta Np63\alpha$ on immunoblot. Samples were tested in triplicate and results averaged. Statistical cutoffs for positive and negative samples were determined. The expense and limited availability of IF testing results in empirical treatment of many oral ulcerative conditions. An ELISA based diagnostic test will allow examination of large numbers of samples to establish the incidence / prevalence of CUS and allow treatment efficacy comparison.

#18 11:24AM

MELORHEOSTOSIS: REPORT OF TWO CASES AFFECTING THE JAW. P. Parashar, A. Musella, T. Novak, R. Greer. U. of Colorado School of Dentistry, Aurora. Melorheostosis is a rare sclerosing bone dysplasia that is characterized by a localized, diffuse thickening of the cortical bone. This condition was first described by Leri and Joanny in 1922, and usually affects the appendicular skeleton and associated soft tissue, but rarely affects the craniofacial complex. The etiology of this condition is obscure. Diagnosis of melorheostosis relies on clinical, radiographic and histologic correlation. Only eight cases of melorheostosis involving the craniofacial complex have been reported. We report two new cases of isolated melorheostosis involving the maxilla and mandible along with differential diagnostic considerations. To our knowledge, involvement of the maxilla only has not been previously reported.

ESSAY PROGRAM 1
MONDAY, MAY 7, 2007

#19 11:36AM

ORAL MUCOCELES: A CLINICOPATHOLOGIC REVIEW OF 1,824 CASES INCLUDING UNUSUAL VARIANTS A. Chi, P. Lambert, M. Richardson, B. Neville. Medical U. of South Carolina, Charleston
Objective. To review the clinicopathologic features of oral mucoceles with special consideration of unusual variants. **Study design.** We performed a retrospective consecutive case review of all oral mucoceles diagnosed by our biopsy service from 1997 through 2006. The following was recorded: age at biopsy, gender, clinical findings (lesion location, color, size, and consistency), history of trauma, history of recurrence, and histopathologic findings. **Results.** 1,824 oral mucoceles were identified. There was no significant gender predilection (M:F ratio 1:1). The peak incidence was in the 2nd decade with an average age of 25.0 years. The most common locations were the lower labial mucosa (81%), floor of mouth (5.8%), ventral tongue (5.7%) and buccal mucosa (4.7%); infrequent sites included the palate (1.4%) and retromolar area (.5%). The lesions most often were described as bluish/purple or normal in color with a soft, fluctuant, or firm consistency. The mean maximum diameter was 0.8cm with a range of .1 to 4 cm. In 470 cases, a history of trauma was reported. 95 cases were recurrent lesions. An uncommon but well recognized variant was the superficial mucocele (n=13). Unusual variants included mucoceles with myxoglobulosis (n=2) and synovial metaplasia (n=2). **Conclusions:** Myxoglobulosis is a well-recognized finding in appendiceal mucoceles, and only 17 cases of myxoglobulosis in oral mucoceles have been reported thus far. Synovial metaplasia likely represents a reactive response to gliding trauma and classically occurs within tissues around breast implants or joint prostheses; there are no prior reports in the literature of synovial metaplasia within an oral mucocele. Recognition of uncommon variants is important in order to avoid misdiagnosis as a neoplastic or vesiculobullous condition.

#20 11:48AM

LABIAL SALIVARY GLAND INVOLVEMENT IN NEONATAL HEMOCHROMATOSIS: A CASE REPORT AND REVIEW OF LITERATURE. K.C. Chan and M.C. Edelman. Long Island Jewish Medical Center, New Hyde Park, New York. Neonatal hemochromatosis (NH) is a severe liver disease of fetal or perinatal onset, in which iron deposition occurs at hepatic and extrahepatic sites without involvement of the reticuloendothelial system. Labial minor salivary gland biopsy has been suggested as a diagnostic adjunct in patients suspected of having NH, as hemosiderin accumulates in acinar epithelial cells. Prior to this observed salivary gland pathology, a diagnosis of NH was often delayed, rendered only after the usual causes of neonatal liver failure have been excluded. Recent studies have shown that early diagnosis and treatment can improve survival. Few cases of salivary gland hemosiderosis in NH have been reported in the literature. A positive finding of salivary glandular siderosis on biopsy will expedite care. We report a case of a female newborn (gestational age of 36 weeks) who had liver failure at birth, and was suspected to have NH. The results of a labial salivary gland biopsy supported the diagnosis of NH. The clinical and histological feature are presented and the NH literature pertaining to labial salivary gland pathology is reviewed.

ESSAY PROGRAM 1
MONDAY, MAY 7, 2007

#21 12:00PM

DESIGN AND DEVELOPMENT OF A WEB-BASED SOFTWARE FOR CONSULTANCY IN ORAL PATHOLOGY. B.Sarrafpour, P.Motahhary, F.Baghaee, N.Eshghyar, Y.Deighani, A.Reaziat. Tehran U of Medical Sciences, Iran. With an exponential growth of Internet connectivity in Iran as a developing country during the recent years, IT tools and technologies have been widely recognized as effective solutions for confronting shortcomings of medicine. Special geographic and demographic characteristics, plus insufficiency of specialized practitioners in remote locations, project the necessity of tele-consultancy Web applications. Tele-dentistry as a relatively new sub category in telemedicine is widely acknowledged in different tele-consultancy Web sites. Yet these service providers generally provide a wide scope of dental forums. Oral pathology is probably one of the most complicated specialties in dentistry, which has considerable interrelation with other dental fields such as oral surgery, oral medicine and oral radiology. Communication among oral pathologists and between them and other specialists is very helpful and crucial for reaching appropriate diagnosis in questionable cases. We believe that tele-consultancy forums specialized in certain fields will contribute a lot more in developing a rich knowledge base surrounding specific sciences. With this mindset we developed a web site specialized in oral pathology to make communication among oral pathologists feasible. In this web site specialists from all around the world can discuss presented cases and share their experiences focusing on oral pathology. Certain cases which might be very rare in some parts of the world can be observed, while latest knowledge and techniques can reach the most remote locations in an efficient and effective manner. On the other hand this web site can improve the quality and quantity of training in the area of oral pathology by electronically publishing its valuable data.

**ESSAY PROGRAM 2
TUESDAY, MAY 8, 2007**

#22 1:00PM

EPSTEIN-BARR VIRUS MODULATED DEDIFFERENTIATION OF BASAL CELL ADENOCARCINOMA TO LYMPHOEPITHELIAL CARCINOMA: REPORT OF A CASE. D. Flint, L. Franklin, R. Foss, C. Fielding. Armed Forces Institute of Pathology, Washington, D.C. A twenty-two year-old Hispanic female presented with a multinodular right parotid gland mass. The sections demonstrated areas of conventional basal cell adenocarcinoma (BCA) intimately associated with an undifferentiated lymphoepithelial carcinoma (LEC). Zones of transition between these components were evident. The BCA component was immunoreactive for pancytokeratin (AE1/AE3), smooth muscle actin (SMA) and S-100 protein but nonreactive for glial fibrillary acidic protein and latent membrane protein 1 (LMP-1). In contrast the LEC portion of the lesion was immunoreactive for AE1/AE3 and LMP-1, but not SMA or S-100. EBV-encoded small ribonucleic acid (EBER) *in-situ* nuclear staining was positive in both tumor types, as well as the areas of apparent transition between the two patterns. CD45rb staining highlighted the lymphoid stroma. Dedifferentiation of salivary gland tumors is a well recognized phenomenon in which a lower grade salivary gland tumor is associated with a high grade or undifferentiated carcinoma; however LEC is not a characteristic manifestation of dedifferentiation. EBV is a carcinogenic virus which plays a role in the oncogenesis of epithelial neoplasia in the head and neck, particularly nasopharyngeal carcinoma and salivary gland LEC from endemic areas, but it is rarely present in sporadic cases of salivary LEC. Only recently has EBV been suggested as a possible factor in the dedifferentiation of low grade salivary gland carcinomas. The current tumor may provide additional support for EBV playing a role in some cases of dedifferentiation.

#23 1:12PM

ORAL HODGKIN LYMPHOMA. J. Whitt, C. Dunlap, K. Martin. U. Missouri Kansas City. Hodgkin lymphoma, which typically presents as a nodal lesion, may infrequently involve extranodal sites, including the oral mucosa, typically as a manifestation of more widespread disease discovered during the staging process. The English language literature contains only six reports of primary extranodal Hodgkin lymphoma arising in the oral mucosa in the absence of more widespread disease. We report a case of primary, extranodal Hodgkin lymphoma that presented in the palatal soft tissue of a 79 year-old Caucasian female, who presented with a 3.5 cm ulcerated mass of her left palate that had been enlarging for three months and interfered with the function of her maxillary complete denture. An incisional biopsy of the lesion yielded tissue with a fish-flesh consistency. Microscopic examination revealed a diffuse, mixed cellular infiltrate, consisting of benign lymphocytes, plasma cells, histiocytes and foci rich in eosinophils. Within this background was a scattering of large, atypical cells, including some bizarre Reed-Sternberg forms which exhibited immunoreactivity for CD30 and CD20 and non-reactivity for CD15 and CD45RO, supporting a diagnosis of classical Hodgkin lymphoma. Staging work-up revealed no palpable lymphadenopathy, organomegaly or nasopharyngeal involvement. Chest radiographs were normal. Positron emission tomography exhibited a single focal area of abnormal hypermetabolic activity involving the left palate area, without involvement of any other site. The clinical stage was Ann Arbor I-A. The tumor was treated with a 6 MV photon beam to a total dose of 4,000 cGy in 25 fractions over 35 elapsed days. Midway through the treatment the tumor mass had completely disappeared clinically and the patient was able to wear her denture more easily. The patient exhibited no evidence of disease at six months follow-up.

**ESSAY PROGRAM 2
TUESDAY, MAY 8, 2007**

#24 1:24PM

INCREASED EXPRESSION OF THE COLLAGEN INTERNALIZATION RECEPTOR uPARAP/Endo180 IN THE STROMA OF HEAD AND NECK CANCER Shireman J^{1,2,3}, Wagenaar-Miller R¹, Molinolo A¹, Madsen D⁴, Engelholm L⁴, Behrendt N⁴, Bugge T¹, Sulek J¹ ¹Oral and Pharyngeal Cancer Branch, National Institute of Dental and Craniofacial Research, NIH, Bethesda, MD, ²Howard Hughes Medical Institute-NIH Research Scholars Program, Bethesda, MD, ³Nova Southeastern U College of Dental Medicine, FL, ⁴Finsen Laboratory, Rigshospitalet, Copenhagen, Denmark. Local growth, invasion and metastasis of malignancies of the head and neck involve extensive degradation and remodeling of the underlying, collagen-rich connective tissue. uPARAP/Endo180 is an endocytic receptor that was recently shown to play a critical role in the uptake and intracellular degradation of collagen by mesenchymal cells. As a step towards determining the putative function of uPARAP/Endo180 in head and neck cancer progression, we used immunohistochemistry to determine the expression of this collagen internalization receptor in 112 human squamous cell carcinomas, and 19 normal or tumor-adjacent head and neck tissue samples from the tongue, gingival, cheek, tonsils, palate, floor of mouth, larynx, maxillary sinus, upper jaw, nasopharynx/nasal cavity, and lymph nodes. The specificity of detection was verified by staining of serial sections with two different monoclonal antibodies against two non-overlapping epitopes on uPARAP/Endo180 and by the use of isotype-matched non-immune antibodies. uPARAP/Endo180 expression was observed in the stromal fibroblast-like vimentin-positive cells. Furthermore, the expression of the collagen internalization receptor was increased in tumor stroma compared to tumor-adjacent connective tissue, and was most prominent in poorly-differentiated tumors. These data suggest that uPARAP/Endo180 participates in the connective tissue destruction during head and neck squamous cells carcinoma progression by mediating cellular uptake and lysosomal degradation of collagen.

#25 1:36PM

MYOPERICYTOMA – FIRST REPORT OF A UNIQUE HISTOPATHOLOGIC ENTITY IN THE ORAL CAVITY. H. Chhatwal, M.N. Islam, J. Ojha, D.M. Cohen, A.C. Laga, I. Bhattacharyya U of Florida, Gainesville. & Brown U. Providence, RI. Myopericytoma is a benign perivascular myoid tumor that arises in subcutaneous and superficial soft tissues of the extremities in adults. This term was adopted in 1998 to describe tumors characterized histologically by striking concentric perivascular proliferation of spindle cells and showing apparent differentiation towards perivascular myoid cells or pericytes. Pericytes are considered to be of mesenchymal origin and are related to vascular smooth muscle cells and probably belong to the same cell lineage. Also known as Rouget cells, periendothelial cells or mural cells, these contractile cells are located within the basement membrane of capillaries and post-capillary venules. A close histological relationship exists between myopericytoma, solitary myofibroma, myofibromatosis, etc. A thorough search of the English language literature failed to reveal any intraoral cases. We present the first instance of a rare intraoral myopericytoma in a 72 year old white female who presented with a 1 cm pink, pedunculated lesion on the edentulous alveolar ridge of the posterior mandible. Radiographic examination demonstrated no osseous involvement. Microscopically, a proliferation of overlapping plump, spindle to round-shaped myoid cells in a concentric arrangement, intimately associated with thin walled vessels was noted. In some areas, the lesional cells appeared to originate intravascularly and scattered mitoses were seen. Positive reactivity to α -smooth muscle actin, h-caldesmon, smooth muscle myosin-heavy chain and focal positivity to desmin was observed. The patient remains free of recurrence at 6 months follow-up. The etiopathogenesis, immunohistochemical profile, histologic differential diagnosis and biologic behavior of this entity are discussed.

**ESSAY PROGRAM 2
TUESDAY, MAY 8, 2007**

#26 1:48PM

UNUSUAL HISTOLOGIC AND CLINICAL VARIANTS OF TRAUMATIC BONE CYSTS (TBC). I. Bhattacharyya, N. Islam, H. Chhatwal, J. Ojha, J. Reith, D. Cohen. U. of Florida, Gainesville. The term TBC was introduced by Lucas in 1929. These lesions are usually asymptomatic, slow growing, non-expansile and diagnosed at routine radiographic examination. Unusually large TBCs are rare in the jaws, but fairly common in the long bones of the extremities. Venous obstruction and blockage of interstitial fluid drainage, in an area of rapidly growing and remodeling bone, may play a role in the formation of TBC. In the extremities, TBCs tend to be large and relatively expansile lesions that behave aggressively with a recurrence rate of 20% or higher. TBCs have also been associated with compound odontoma, benign fibro-osseous lesions such as cemento-osseous dysplasia and fibrous dysplasia. We present 4 cases of unusually large, expansile, destructive, fluid filled, mandibular TBCs (3 F, 1M, ages 12-43). Microscopically, synovium-like fibrotic membranous tissue lined the cavities and was attached to spicules of trabecular and cortical bone. The membranous wall contained numerous multinucleated osteoclastic giant cells along with hemorrhage, hemosiderin and minimal inflammation. In addition, osteoid and cementum-like calcified materials were noted. The clinico-pathologic features closely resemble unicameral bone cysts of long bones but widely differ from the usual “empty” cavity encountered in routine TBCs of the jaws. The English language literature has very few reports of large destructive TBCs of the jaws. These lesions probably warrant separate and unique delineation due to their aggressive behavior, unusual clinical and histologic presentation and therapeutic requirements. Further longitudinal studies would be valuable in elucidating the clinical course of these lesions and developing better management protocols.

#27 2:00PM

CENTRAL HEMANGIOMA OF THE MANDIBLE. R. Padilla, S. Press, E. Andrews, G. Blakey, V. Murrah. The University of North Carolina at Chapel Hill. Intraosseous hemangioma is an uncommon entity, accounting for less than 1% of skeletal benign tumors. Hemangiomas of the jaws are a relatively rarely reported lesion. We present a case of a 19-year-old WF with a history of pain and swelling of the left posterior mandibular gingiva and who underwent surgical extraction of her third molars and retained tooth K. A left mandibular lesion was not recognized clinically or radiographically before attempting the surgical procedure and the patient experienced life-threatening bleeding during and after extraction of tooth K and attempt to extract tooth 17. At that time, a biopsy of tissue around tooth 17 was sent to a general pathology laboratory, and a diagnosis of “acute and chronic inflammation” was rendered. Subsequent extraction of tooth 17 resulted in another episode of profuse bleeding. The patient was then referred to UNC for management. The clinical assessment and re-evaluation of the biopsy specimen were consistent with hemangioma of bone. The patient underwent diagnostic imaging studies including angiography to make a definitive diagnosis and identify the feeding vessels. Sclerosis and prompt surgical excision of the lesion were performed successfully. The mandible was reconstructed and the patient healed uneventfully. No recurrent or residual lesion is present after 2 years. A review of the literature and an algorithm for the diagnosis and management of vascular lesions of the jaws is offered.

**ESSAY PROGRAM 2
TUESDAY, MAY 8, 2007**

#28 2:12PM

POST-TRANSPLANT LYMPHOPROLIFERATIVE DISORDERS OF ORAL CAVITY. J. Ojha, N. Islam, H. Chhatwal, D. Cohen, I. Bhattacharyya. U. of Florida, Gainesville. Post transplant lymphoproliferative disorder (PTLD) is a well-described, long-term complication of immunosuppression following solid organ or bone marrow transplantation. PTLD is related to long-term immunosuppressive therapy and usually arises from germinal center experienced B-cells. PTLD is histologically characterized by an abnormal lymphoid cell proliferation and in general tends to clinically behave in a malignant fashion, if left untreated. PTLD most often involves the GI tract and has also been reported in several other organ systems including the CNS and rarely in the head and neck. Lesions involving the oral cavity have not been well documented. We present three new cases of oral PTLD including two males, aged 40 and 52 with lesions on the buccal mucosa and left lingual posterior mandible respectively and one female, aged 9 with a raised mass of the tongue. Histologically, all of these tumors revealed a dense neoplastic proliferation of tightly packed small round hyperchromatic pleomorphic cells with minimal intervening stroma. Numerous large lymphocytic, plasmacytoid and immunoblastic cells were also noted. These cells exhibited angular to rounded nuclei and scanty eosinophilic cytoplasm. Numerous atypical mitoses were also noted. Lesional cells reacted positively with CD20, CD45 and scattered positivity with CD3. All three cases exhibited strong positivity for Epstein Barr virus (EBER). PTLD can be life-threatening and early accurate diagnosis and appropriate management can prevent fatal progression of this disease. Overall PTLD reduces the survival of transplant recipients and a poorer prognosis is associated with patients older than 55 years and in cases where lymphocytic infiltration of the graft has occurred. PTLD is treated by decreasing immunosuppression and initiating intravenous anti-viral therapy.

#29 2:24PM

LYMPHOMATOID GRANULOMATOSIS WITH MANDIBULAR INVOLVEMENT. C. Allen, R. Baiocchi, K. McNamara, J. Kalmar, and W. Marsh. The Ohio State U., Columbus. Lymphomatoid granulomatosis (LYG) is a rare condition that primarily affects the lungs. Only recently was it determined that LYG represents an EBV-driven proliferation of B-lymphocytes, with a prognosis that ranges from potentially spontaneously reversible (Grade 1) through an aggressive B-cell lymphoma-like process that is almost uniformly fatal (Grade 3). An 82-year-old man presented with mandibular pain and vague systemic signs and symptoms, including a 30-lb. weight loss over the preceding several months. An exophytic ulcerated mass grew from the extraction site of #18. Microscopic examination revealed a polymorphous inflammatory infiltrate that was focally angiocentric. Large atypical lymphoid cells were seen in the walls of some arterioles, in addition to smaller unremarkable lymphoid cells. The smaller cells proved to be CD3-positive, while the larger atypical cells were CD20-positive. In situ probes for EBER localized to the large atypical cells. Clonality assays showed a polyclonal population of T-lymphocytes by TcR beta analysis, while IgH V-D-J analysis confirmed a monoclonal population of B-cells. These findings were considered to be consistent with LYG, and the patient was referred for oncology evaluation and therapy. PET scans showed hypermetabolic activity in the left posterior mandible as well as in the lung parenchyma and mediastinal lymph nodes. Regression of the oral lesion could be seen after the first course of EPOCH (etoposide, vincristine, doxorubicin, cyclophosphamide, prednisone) chemotherapy. To our knowledge, this is the first well-documented description of oral involvement associated with LYG.

**ESSAY PROGRAM 2
TUESDAY, MAY 8, 2007**

#30 2:36PM

PRIMARY INVASIVE ASPERGILLUS STOMATITIS IN A PATIENT WITH ACUTE MYELOID LEUKEMIA (AML). A CASE REPORT AND REVIEW OF LITERATURE. N. Said –Al-Naief, M. Knoll, and S. Sittivorngwong, U. of Alabama at Birmingham. Invasive *Aspergillus* infection is life threatening situation for neutropenic patients with a mortality rate of 50-100%, despite aggressive antifungal therapy. Primary invasive oral Aspergillosis (PIOA) is rare. The lung is the most common primary site, with multiple secondary sites reported, including the oral cavity and paranasal sinuses. A case of PIOA in a 70 y/o WM, who was admitted to the UAB Hematology/Oncology service in October of 2006 with pancytopenia, accompanied by fever and chills is presented. A bone marrow biopsy, performed one day after admission, revealed acute myeloblastic leukemia, minimally differentiated. He received 7+3 induction chemotherapy. A follow-up bone marrow biopsy performed one month later demonstrated residual disease which prompted starting him on monoclonal antibody treatment with Mylotarg. His AML continued to be non-responsive to treatment and he kept spiking fevers. At that time, he also had an outbreak of herpetic stomatitis, and then developed a small ulcer on the right posterior hard palate, which continued to enlarge, producing a necrotic ulcer with a gray pseudomembranous surface. A secondary mucosal ulcer also began to develop on the buccal aspect of the maxillary ridge a week and a half later. The patient did have several juxtaposed dental implants. Biopsy of the palatal ulcer revealed invasive Aspergillosis. CT scan of the face showed opacification of the right maxillary and ethmoid sinuses, but without definitive evidence of bone destruction. Radiographic examination of the chest showed no involvement throughout his treatment but blood cultures were also positive. He received systemic antifungal treatment for the remainder of his hospital stay. He was recently discharged to hospice care. The clinicopathological features of this case and review of literature are presented.

#31 2:48PM

CASE BASED EVIDENCE FOR EXPANDING THE CRITERIA FOR THE DIAGNOSIS OF BISPHOSPHONATE INDUCED OSTEOCHEMONECROSIS (BON). D. Cohen, I. Bhattacharyya, N. Islam, J. Ojha, J. Green, E. Lewis, J. Engel, S. Rose U. of Florida, Gainesville. & Omaha, NE. The most recent AAOMS criteria for BON includes current or previous treatment with a bisphosphonate (BP), exposed bone in the maxillofacial region persisting for >8 weeks and no history of radiation to the jaws. Additionally, the AAOMS recommendation and that of several authors to avoid elective surgery involving bone in BON have limited the sampling of hard and soft tissues in these patients. We present 4 cases fulfilling the clinical criteria for BON but which were actually different entities. Two cases of squamous cell carcinoma, a case of multiple myeloma and one patient who was not on BP presented with features of BON, but were correctly diagnosed only when they were biopsied and/or radiographic features aided in the interpretation. Finally we present 2 additional patients who had recent dental extractions and had previously received H & N radiation followed by oral BP therapy. One developed BON after a relatively short 1.5 years of oral BP therapy and the second osteoradionecrosis (ORN). Therefore, radiation therapy may be a co-morbidity for BON and not an exclusion factor. Radiographic features were especially helpful in differentiating BON from ORN but clinical and histologic findings were also useful. In conclusion, we propose to add the almost unique radiographic features and histologic examination (when indicated) to the criteria for the diagnosis of BON. Biopsies may be essential to establishing the correct diagnosis in those patients at risk for malignancy. We recommend an additional category of BON called pre-osteonecrosis. In these patients there are significant radiographic and/or clinical signs (pain) of osteonecrosis before bone exposure occurs.

ESSAY PROGRAM 2
TUESDAY, MAY 8, 2007

#32 3:00PM

AN ORAL MANIFESTATION OF IMMUNE RECONSTITUTION INFLAMMATORY SYNDROME. F. Alawi, I. Almog, J. Hines, S. DeRossi. U. of Pennsylvania, Philadelphia. Highly active antiretroviral therapy (HAART) may be associated with a complication known as immune reconstitution inflammatory syndrome (IRIS). IRIS is defined as a paradoxical deterioration of a patient's clinical status that is directly attributable to improved immune response after commencement of HAART. The more rapid the immune recovery, the greater the likelihood that IRIS will develop. We report an HIV-infected patient who developed oral Kaposi's sarcoma (KS)-like lesions within weeks after starting HAART. At the time the patient's HIV infection was initially diagnosed, his viral load was $>500,000$ and the CD4 count was $98/\mu\text{L}$. Apart from chronic fatigue, anemia, lymphoid interstitial pneumonitis, and CMV-associated colitis, he had no other clinical manifestations of HIV/AIDS. HAART was started within days of the diagnosis. Thirteen weeks later, the patient was re-admitted to the hospital presenting with fever, bilateral lymphadenopathy, and an enlarging left neck mass. Intraoral examination revealed two discrete, small, reddish-purple lesions on the hard palate, suggestive of KS. The oral lesions increased and almost doubled in size within days of his admission, but then began to spontaneously regress. No adjunctive chemotherapy was introduced. At this time, the patient's viral load was undetectable (<75 copies/mL), and the CD4 count was $248/\mu\text{L}$. An excisional biopsy of one of the oral lesions was consistent with that of an atypical vascular proliferation. While classic histologic features of KS were not observed, scattered endothelial cells showed staining for HHV-8 latent nuclear antigen. Two weeks after the biopsy, the oral lesions almost completely resolved. Fine needle aspiration of the neck mass revealed reactive lymphadenitis without evidence of infection. To our knowledge, this case represents the first documented intraoral presentation of IRIS.

#33 3:12PM

BILATERAL CENTRAL GIANT CELL LESIONS OF THE MANDIBLE AS A DIAGNOSTIC PITFALL OF NOONAN-LIKE/MULTIPLE GIANT CELL LESION SYNDROME IN AN 8 YEAR OLD BOY R.Carlos, E.Contreras, B.Escaler and A.Netto. Centro de Medicina Oral de Guatemala and Hospital Herrera-Llerandi, Guatemala City, Guatemala. Several conditions with different etiology, treatment and prognosis can present with lesions that histologically are indistinguishable from central giant cell lesions (CGCL) of the jaws. The clinical-pathologic correlation is essential for proper classification. Our patient was the first of non-consanguineous parents, born at term after uncomplicated pregnancy. Cryptorchidism was noted at birth. A distinctive facial appearance was noted, showing downslating palpebral fissures, ptosis, hypertelorism, low set and posteriorly angulated ears and high arched palate. Pectus excavatum and short neck were also present. Complete hematological tests including coagulation were within normal limits. The patient showed facial asymmetry secondary to bilateral CGCL's. Hyperparathyroidism was ruled out. EKG was normal. He was ultimately diagnosed as Noonan-like/multiple giant cell lesion syndrome (NL/MGCLS), which is now considered part of the spectrum of Noonan syndrome (NS). The gene mutations responsible of NS (PTPN11) were identified on chromosome 12 (12q24.1). However, mutations in KRAS and SOS genes have been identified in a small proportion of patients. In spite of several stigmata of the syndrome present at birth, our patient was only properly diagnosed until 8 years of age based on the mandibular lesions. Because NL/MGCLS is a rare condition, treatment of the CGCL have not been fully defined yet.

**ESSAY PROGRAM 2
TUESDAY, MAY 8, 2007**

#34 3:24PM

MULTIPLE ODONTOMA-ESOPHAGEAL STENOSIS SYNDROME. J. Chen, W. Tchaou, and T. Liu. U. of Southern California, Los Angeles, and Taipei Medical U. Hospital, Taiwan. Multiple odontomas-esophageal stenosis syndrome is an extremely rare syndrome characterized by multiple odontomas along with some but not all of the following anomalies, hyperplasia of myenteric plexus, liver cirrhosis, iris colobomas, as well as esophageal, aortic, and pulmonary stenoses. The last case reported in the English literature was in 1975. We report a case of an 11-year-old Taiwanese female presenting with multiple gigantic odontomas in four quadrants. Her past medical history included multiple hospitalizations in infancy for T-loop colostomy, laparotomy, and right hemicolectomy and ileostomy due to dilated ascending and transverse colon, as well as narrow rigid descending and sigmoid colon. At age 2 in the National Taiwan University Hospital, a diagnosis of neuronal intestinal dysplasia with hyperplasia of the myenteric plexus was made. It was later revised as congenital interstitial cell of Cajal hyperplasia with neuronal intestinal dysplasia based on immunohistochemical analyses [Am J Surg Path 24 (11): 1568-1572, 2000]. This patient, in infancy, experienced vomiting immediately after feeding and still has difficulty in swallowing. Her dental history included diffuse gingival enlargement, jaw expansions, and delayed eruption. Teeth were malformed and quickly became decayed. Panorex and CAT scan show several large amorphous radio-opaque masses mixed with toothlike structures scattered throughout the tooth-bearing regions of the maxilla and mandible. Surgical removal of these lesions revealed about 100 toothlike structures. The histopathological findings were consistent with complex and compound odontoma. There is no family history of intestinal and dental anomalies, which suggests a spontaneous mutational event. Combination of dental findings and the past medical history, lead to a multiple odontomas-esophageal stenosis syndrome diagnosis.

#35 3:36PM

ATYPICAL ORAL LESION IN A PATIENT ON INFLIXIMAB: A CASE REPORT. N Narayana, P Giannini, J Casey. University of Nebraska Medical Center, College of Dentistry, Lincoln, Nebraska. Tumor necrosis factor (TNF) is an important cytokine playing a key factor in host defense against intercellular pathogens. This proinflammatory cytokine plays a major role in the pathogenesis of rheumatoid arthritis and Crohn disease. TNF antagonists like infliximab are therefore used for treating these two conditions. A literature review revealed that infectious granulomatous disease has been reported as an adverse side effect in patients taking TNF antagonists. Tuberculosis was the most common followed by histoplasmosis. There was no report of histoplasmosis occurring in the oral cavity. **OBJECTIVE:** The objective is to present a case of mandibular gingival histoplasmosis, which clinically simulated squamous cell carcinoma, in a patient taking Remicade for rheumatoid arthritis. **CASE REPORT:** A 75 yr old female presented with an unusual appearing lesion in the mandibular gingiva of short duration. Clinically the lesion raised the question of squamous cell carcinoma and a biopsy was taken. The biopsy demonstrated an atypical lymphohistiocytic proliferation without characteristic granuloma formation requiring special procedures to rule out lymphoma, since such lesions have been reported following TNF blocker therapy. Gomori's methenamine silver staining revealed both yeast and hyphal forms of *Histoplasma*, thereby establishing a diagnosis of histoplasmosis with an atypical lymphohistiocytic response. She was treated with a course of Sporonox and is improving. **CONCLUSION:** Clinicians and pathologists must consider infectious granulomatous disease in the differential diagnosis of an oral atypical lymphohistiocytic proliferation, particularly if the patient is taking a TNF antagonist such as infliximab.

**ESSAY PROGRAM 2
TUESDAY, MAY 8, 2007**

#36 3:48PM

EFFECTS OF DENDRITIC CELLS ON THE EXPANSION OF CARCINOMA NESTS IN THE PRESENCE OF LIPOPOLYSACCHARIDE (LPS) IN VITRO. D. Whitney, M. Mackey, F. Ianzini, J. Cavanaugh, Z.B. Kurago. University of Iowa, Iowa City, IA. Head and neck squamous cell carcinoma cells (HNSCC) are intimately associated with dendritic cells (DC), and recently were shown to be associated with bacteria. Our previous studies using the Large Scale Digital Cell Analysis System (LSDCAS) showed that prolonged DC-HNSCC nest interactions result in carcinoma cell nest expansion towards the site of interaction. Hypothesis: Bacterial products do not diminish the effect of DC-HNSCC cell interactions on the direction of nest expansion. Objective: To assess the effect of LPS on DC-HNSCC interactions and HNSCC nest expansion. Methods: Two chambers with 1×10^5 HNSCC cells Cal27 with LPS and with or without 4×10^5 monocyte-derived DC were simultaneously filmed over 4 days using LSDCAS. Mpeg files were analyzed using Adobe PremierePro and Photoshop. HNSCC nest-DC interactions and randomly selected HNSCC nests without DC, matched for start and end time of evaluation, were analyzed. In the HNSCC-DC chamber, the angle between DC interaction vector and nest expansion vector (VA) was plotted against time, and tested using our model [$y = \beta_1 \exp(-\beta_2 t^*)$] ($p < .0001$), developed in the absence of LPS. Results: New data fit the existing model, as in the presence of LPS, HNSCC-DC interactions over 4 hrs were similarly associated with acute VA, consistent with carcinoma nest expansion towards the site of interaction, while with little to none DC interaction expansion was random. Conclusion: LPS does not appear to diminish the impact of HNSCC-DC interactions on the direction of nest expansion towards the interaction. Supported by UI Dental Research Award, NIH CA/GM94801 and Whitaker Foundation Special Opportunity Award.

#37 4:00PM

RAP1 INTERACTS WITH β -CATENIN TO PROMOTE INVASION IN SQUAMOUS CELL CARCINOMA. M. Goto, R Mitra, Q Zeng, CY Wang and NJ D'Silva. U. of Michigan, Ann Arbor. Rap1, is a ras-like protein that has been associated with carcinogenesis. In squamous cell carcinoma (SCC), active rap1_{GTP} is located primarily in the nucleus. Importantly, rap1 has a canonical nuclear localization sequence that facilitates nuclear transport of armadillo proteins. One such protein may be β -catenin (β -cat), which is a central molecule in the Wnt signaling pathway. β -cat translocates from a free cytosolic form to the nucleus, where as a co-factor with T-cell factor/ lymphoid enhancer factor, it triggers the transcription of genes that regulate invasion and proliferation. The objective of the current study was to investigate whether a) rap1 interacts with β -cat in SCC; b) induces transcription of β -cat target genes; and c) interacts with β -cat to promote invasion. Methods and Results. Using the ralGDS pull down assay, which retrieves only active, GTP-bound rap1, we observed that β -cat interacts with rap1 in SCC and HEK 293 cells. Immunohistochemical findings on human SCC cells and tissue, support the nuclear localization of β -cat. Luciferase reporter gene assays showed that rap1 upregulated β -cat induced transcription in the presence of TCF4. Furthermore, immunofluorescence findings showed that rap1 facilitated nuclear translocation of β -cat. In matrigel assays with stably transfected SCC cells, rap1 enhanced β -cat-mediated invasion. Conclusion and Significance. Since rap1 induces nuclear translocation of β -cat and promotes β -cat- induced invasion, elucidating the mechanism of interaction and transport could identify an important therapeutic target in head and neck cancer. (This work was supported by NIDCR DE16920-01 and NCI SPORE grant P50 CA97248.)

**ESSAY PROGRAM 2
TUESDAY, MAY 8, 2007**

#38 4:12PM

GINGIVAL SQUAMOUS CELL CARCINOMA IN ADOLESCENCE. V. Woo, D. Zegarelli, L. Close, S. Ruggiero, and J. Wu. Columbia University, New York, NY, and Long Island Jewish Medical Center, New Hyde Park, NY. Squamous cell carcinoma (SCC) is a rare finding in the adolescent population, with most cases occurring in patients with underlying immunologic or heritable diseases. Moreover, the incidence of oral SCC in this age group is extremely low. While isolated cases of adolescent oral SCC have been documented, the majority have been primary tongue or lip lesions; gingival involvement has rarely been described. We report three cases of gingival SCC occurring in adolescent patients with no identifiable predisposing factors and insignificant past medical histories. The preliminary clinical impressions ranged from factitial injury to granulation tissue. Upon biopsy confirmation, all three patients were treated with wide local resections; two patients underwent neck dissections. The histomorphology of these cases were remarkably similar, consisting of well-differentiated SCCs exhibiting marked dyskeratosis, keratin-filled crypts, and an overall endophytic growth pattern; in two cases, the architectural features were reminiscent of keratoacanthoma. At follow-up, two patients are without evidence of disease. One patient demonstrated a questionable recurrence in the maxillary sinus six months post-resection and is currently free of disease. Adolescent gingival SCC appears to be a rare, potentially aggressive tumor that can present a diagnostic challenge for clinicians and pathologists alike. Complete surgical excision with thorough examination of all tissue is critical in distinguishing this entity from reactive proliferations more common in this younger population.

#39 4:24PM

PREVALENCE OF ORAL LESIONS AMONG UGANDAN CHILDREN INFECTED WITH HIV AND MALARIA. C. Flaitz, K. Shetty, J. Sexton, P. Musherure, C. Streckfus. U of Texas Dental Branch at Houston, Lakewood, CO, St. Paul, MN. Objective: This exploratory study evaluated the prevalence of oral lesions among a group of African children diagnosed with HIV and malaria. Methods: Consecutive children from 2 towns in Uganda were given a head and neck examination by one calibrated examiner. Medical history, HIV status, antiretroviral therapy (ART) were obtained by a local nurse or interpreter and verified by medical chart, when available. Oral and perioral lesions were recorded and data based using Excel. Statistical analyses were performed using SPSS. Results: The group consisted of 294 Ugandan children with mean age of 8.7 yrs (range: 1-18 yrs); 174 girls (mean age = 9.1 yrs) and 120 boys (mean age = 8.2 yrs). Non-HIV group had mean of 1.1 lesions/child (n = 54; mean age = 9.1 yrs), while the non-HIV with malaria had 3 lesions (n = 82; mean age = 8 yrs). In comparison, HIV with no ART had 2.7 lesions, while those co-infected with malaria had 3 lesions (n = 39; mean age = 7.4 and 6.3 yrs). HIV with ART and +/- malaria had 2.7 lesions/child (n = 119; mean age = 9.6 and 9.7 yrs). A significant difference was found with the non-HIV group without malaria and the non-HIV group with malaria ($p \leq .05$) and the total HIV group ($p \leq .05$). The most common HIV-associated lesions were cervical lymphadenopathy, parotid enlargement and candidiasis. At least one lesion was identified in 80% of the total group of children and multiple lesions (>2) were observed in 60%. The highest number of multiple lesions was found in the HIV with ART group. Conclusion: Oral lesions were common in children with HIV despite antiretroviral therapy. Of interest, malaria increased the risk for oral diseases in HIV-uninfected children. Little is known about the co-morbidity effects of malaria on pediatric HIV disease progression and this clinical study attempted to evaluate its role in oral health.

**ESSAY PROGRAM 2
TUESDAY, MAY 8, 2007**

#40 4:36PM

REVIEW OF EXTRAGNATHIC PATHOLOGY NOTED DURING ROUTINE VOLUMETRIC COMPUTED TOMOGRAPHY. PC Edwards, C Scanlon, N Norton, T Saini. Creighton U., Omaha Nebraska. Cone beam computed tomography (CBCT) is increasingly employed by dentists. Depending on the field of view, important extragnathic anatomical structures are also visualized. Objectives: To review extragnathic pathologic findings incidentally noted during CBCT scans of the jaws. Methods: 200 consecutive CBCT scans of the maxillofacial region (i-CAT, Imaging Sciences International, 120 kVp, 23 mAs, 17x13cm cylindrical FOV, voxel size 0.3mm³) were analyzed. Findings that were also visible on available FMS or panoramic views were excluded. Extragnathic structures examined included the paranasal sinuses (frontal, maxillary, ethmoid, sphenoid), middle cranial fossa, temporal bone (mastoid air cells, inner ear), carotid canal, cavernous pathway, cervical spine, glenoid fossa and nasopharyngeal airway. Results: Clinically important extragnathic findings were noted in a significant number of scans. The most common findings included inflammatory changes of the paranasal sinuses, arthritic changes of the cervical spine, external carotid artery calcifications, and intracranial calcifications of the internal carotid artery. These findings are reviewed. Conclusions: Clinicians using this modality should have an understanding of the normal extragnathic structures imaged during CBCT scans of the maxillofacial complex and be able to assess these structures for potential pathology.

#41 4:48PM

C-MYC IN AMELOBLASTIC FIBROMA (AF) & AMELOBLASTIC FIBROSARCOMA (AFS). M. El-Barrawy, and J. Eleessawi. Alexandria U, and Garyounis U. AF is a mixed intraosseous tumor of odontogenic origin. AFS is rare malignant tumor of the jaw. C-myc is widely studied proto-oncogenes that are thought to be regulators of cell growth. To best of our knowledge, no data, till now, is reached concerning the c-myc role in AF or it's malignant transformation. So, this study aimed at investigating the role and the expression of c-myc in the AF and the extremely rare AFS. Materials and methods: Biopsies from three patients with AF and one patient with AFS were subjected for histological and immunohistochemical studies. Streptavidin- biotin-peroxidase complex method was preformed to bind the primary antibodies (mouse monoclonal anti-c-myc). Control slides from odontogenic epithelium of tooth germ were processed in parallel. Results: Negative c-myc expression was observed in the developing tooth germ. Two AF cases revealed negative to mild reaction for c-myc antibody mainly in the epithelial component, the third AF case revealed mild to moderate expression. AFS revealed intense expression. This expression included total cell reactivity (both cytoplasmic & nuclei). Conclusion: Here, one could suggest that the expression of c-myc is an early event in AF and a characteristic feature in its malignant sarcomatous transformation.

**ESSAY PROGRAM 2
TUESDAY, MAY 8, 2007**

#42 5:00PM

DENTAL CHORISTOMA OF THE TONGUE: REPORT OF THE FIRST EVER CASE OF ECTOPIC DEVELOPING TOOTH IN THE TONGUE. R. Gopalakrishnan, GM Schauer and IG Koutlas. University of Minnesota School of Dentistry, Minneapolis, and Children's Hospitals and Clinics, Minneapolis, Minnesota. Choristoma refers to a mass of tissue that is histologically normal for a part of the body other than the site at which it is located. The tongue is the most common intraoral site for choristomas. Although, lingual osseous and cartilaginous choristomas are the most common, accounting for 85% of the cases occurring in the tongue, a wide variety of tissues such as gastric mucosa or intestinal mucosa, respiratory epithelium and glial tissue have been reported in the tongue. We present an interesting case of dental choristoma that occurred in the tongue of a 4-year-old female. Clinically, the lesion presented as intermittent swelling of the right tongue and radiographic workup indicated a calcified lesion consistent with a "phlebolith." Using CO₂ laser, the lesion was removed completely from the surrounding soft tissue, with a post surgical impression of "calcified stone." Histologic examination revealed a cystic lesion lined by reduced enamel epithelium. A tooth featuring dentin and pulp was noted within the cystic cavity. Separately, a smaller follicle with apparent dental tissue was present. The entire lesion was surrounded by loose collagenous fibrous connective tissue and a thin osseous shell. The diagnosis of dental choristoma (ectopic developing tooth) was rendered. As far as we know, this is the first reported case.

#43 READ BY TITLE

THE CLINICAL, HISTOLOGICAL AND DIRECT IMMUNOFUORESCENCE FINDINGS OF 5CASES OF LINEAR IgA DISEASE. N. Musa, S. Lakshmanan, V.Kumar, and M.Neiders. U. at Buffalo, State U. of New York, and IMMCO Diagnostics Inc. Objectives: To analyze the clinical, histological and direct immunofluorescence presentation in Linear IgA. Methods: Clinical, histological and DIF findings of 550 consecutive cases taken from the files of IMMCO Diagnostics Inc were reviewed. Cases which were signed out as linear IgA disease were analyzed. Results: The mean age was 71, three (3) females and two males. Three (3) cases were diagnosed clinically as desquamative gingivitis, two were unknown. Three (3) cases were taken from the gingiva, two were from the buccal mucosa. The histological findings were pemphigoid in 2 cases, lichen planus in one case, and normal mucosa in one case. DIF confirmed the final diagnosis with the findings of linear IgA immunoglobulin at the basement membrane zone. Based on the clinical, histological and DIF findings the final diagnosis was given. Conclusion: Linear IgA disease share similar clinical and histological features with numerous vesiculobullous lesions. Immunofluorescence findings are very valuable in establishing and confirming the diagnosis.

**ESSAY PROGRAM 2
TUESDAY, MAY 8, 2007**

#44 READ BY TITLE

STAT-3 EXPRESSION IN SALIVARY GLAND TUMORS. V. Araújo, C. Furuse, P. Cury, A. Altemani, and N. Araújo. São Leopoldo Mandic Dental Research Center. Campinas, SP. The aim of the present study was to evaluate the signal transducer and activator of transcription (STAT-3) expression in salivary gland tumors. Fifty biopsies of salivary gland tumors (9 pleomorphic adenomas, 12 adenoid cystic carcinomas, 7 epithelial-myoepithelial carcinomas, 10 polymorphous low-grade adenocarcinomas, and 12 mucoepidermoid carcinomas) and 10 normal salivary glands were immunohistochemically labeled for STAT-3 and Phospho-STAT3 (STAT-3P). The results showed that, in normal salivary gland, STAT-3 was expressed in cytoplasm and STAT-3P in nuclei of all tissue cells, except in large mucous acinar cells in which both antibodies were negative. In pleomorphic adenoma, the expression was the same as in the normal gland. In malignant tumors, there were variations in the expression of these antibodies. The most important one was the presence of STAT-3 in the nuclei of the malignant tumor cells, most evident in the cribriform type of adenoid cystic carcinoma. Both loss and variation of STAT-3P expression was also observed. The presence of STAT-3 in the nuclei of malignant salivary gland tumors, mainly in adenoid cystic carcinoma, may represent an important event in oncogenesis probably contributing to tumor cell proliferation and blocking apoptosis. However further investigation will be necessary to support this hypothesis. CNPq - 471053/2004-0.

#45 READ BY TITLE

DESMOPLASIA IN DIFFERENT DEGREE OF INVASION OF CARCINOMA EX PLEOMORPHIC ADENOMA. V. Araújo, C. Furuse, P. Cury, A. Altemani, V. Alves, and N. Araújo. São Leopoldo Mandic Dental Research Center. Campinas, SP. We analyzed the presence of stroma desmoplasia, by immunohistochemistry reaction for α -smooth muscle actin (α -SMA), in seventeen cases of carcinoma ex pleomorphic adenoma (CXPA) classified according to the presence of epithelial and myoepithelial cells and the degree of invasion –intracapsular, minimally and frankly invasive carcinoma. Vessel wall and myoepithelial cells of normal salivary gland included in the specimens were used as positive internal control. In reminiscent pleomorphic adenoma no desmoplasia was detected in the stroma. In invasive areas of the intracapsular type of CXPA with only epithelial component, which are still inside the pleomorphic adenoma capsule, desmoplasia started to be revealed by the presence of myofibroblasts close to the capsule. In minimally invasive type, myofibroblasts were seen in the septum between blocks of malignant cells and in focal peripheral areas of the tumor interpreted as the real front of invasion. In frankly invasive type of CXPA showing large blocks of cells, intense desmoplasia was seen, also separating the tumor cells from the neighboring normal tissue. In tumors represented by cords and/or small nests of cells, the desmoplasia was very slight. In invasive type of CXPA with myoepithelial component, α -SMA expression was seen in the septum among the blocks of cells. The expression was less intense and not present in all the stroma extent. In CXPA with epithelial and myoepithelial cells, myofibroblasts expressing α -SMA were rarely seen in the septum separating sheets of cells. Based in our results, we may deduce that the presence of desmoplasia parallels the capacity of invasion of CXPA composed by epithelial cells, starting in the front of invasion of the minimally invasive type of CXPA and increasing as the tumor becomes frankly invasive. Furthermore we may also conclude that in CXPA with myoepithelial component desmoplasia is very rare. FAPESP – 04/07960-0

**ESSAY PROGRAM 2
TUESDAY, MAY 8, 2007**

#46 READ BY TITLE

MERKEL CELL CARCINOMA OF THE BUCCAL MUCOSA: AN UNCOMMON LOCATION FOR A RARE AGGRESSIVE NEOPLASM. M.N.Islam, S.Al-Quran, W.H.Wood, H.Chhatwal, J. Ojha, D. Cohen, I. Bhattacharyya. U. of Florida, Gainesville. Merkel cell carcinoma (MCC) is an uncommon dermal tumor occurring mostly in sun-exposed skin in older white patients. MCC usually exhibits a relatively aggressive behavior and can be rapidly fatal. Intraoral MCC have rarely been reported. We present a case of primary MCC of the buccal mucosa in a 75-year-old male. The patient presented with a buccal mass of 2-months duration. No history of any other malignancies was obtained and the medical history was non-contributory. Microscopically, a densely packed nodular and infiltrative proliferation composed of small hyperchromatic cells with focal trabecular areas was noted. The nuclei exhibited a crinkled and "salt and pepper" chromatin pattern. A brisk mitotic rate and focal apoptosis was noted. Invasion of soft tissue and skeletal muscle was seen. The lesional cells reacted positively with pan-cytokeratin, CD56 and exhibited prominent paranuclear dot-like reactivity with CK20, synaptophysin and chromogranin. Ki-67 labeled >90% of tumor cells. Lesional cells were negative for TTF-1, CK7, S-100, CD45, CD3, CD20, CD138, kappa-ISH, lambda-ISH, TdT and myeloperoxidase. A thorough medical work-up including radiographic studies failed to reveal any lesions in the chest or abdominal cavity and no lymphadenopathy was noted. The patient is alive and well 7 months after wide surgical resection with assured margins. This case highlights an extremely rare case of primary oral MCC. It also illustrates that MCC should be considered in the differential diagnosis of small round blue cell malignancies of oral mucosa and the usefulness of immunohistochemical stains in delineation of oral tumors mimicking hematolymphoid malignancies. The histologic differential diagnosis, prognosis and treatment considerations are also discussed.

#47 READ BY TITLE

IMMUNOPROFILE OF JAWBONE OSTEOSARCOMAS AND CHONDROSARCOMAS TO NON-COLLAGEN PROTEINS. K. Hiraki, S. Sousa. U. of São Paulo, São Paulo, Brazil. Histologic differentiation between osteosarcomas, especially chondroblastic osteosarcoma, and chondrosarcomas may be a challenge. Most cartilage tumors of jawbones are chondroblastic osteosarcomas, which can in theory be diagnosed by the presence of osteoid that is never produced by tumoral cells of chondrosarcomas. However, osteoid may not be found in small biopsies, or, other materials such as fibrinoid or collagen may be very similar to osteoid in routinely stained sections. Thus, the aim of the present study was to delineate the immunoprofile of jawbones osteosarcomas and chondrosarcomas to a panel of non-collagen proteins expressed by bone extracellular matrix: osteonectin (ONC), osteopontin (OPN), bone sialoprotein (BSP) and osteocalcin (OCC), and, also, the transcription factors Cbfa1 and Sox9. For the study 42 cases of osteosarcomas and 6 cases of chondrosarcomas of the jaws were selected from archival material. Results showed that in osteosarcomas ONC, OCC, OPN and BSP were positive in undifferentiated cells, osteoblasts, osteoid, osteocytes, and chondroid matrix of chondroid areas. In mineralized matrix OPN and OCC were also positive. The transcription factor Cbfa1 was also positive in most cell types whereas Sox9 was weakly positive only in chondrocytes of chondroid areas. In chondrosarcomas the chondrocytes were positive to ONC, OPN and Cbfa1, and weakly positive to BSP, OCC and Sox9. We concluded that the immunoprofile of both tumors to the panel of proteins may help in differentiating them. OCC was the best marker for osteosarcomas, and osteoid matrix can be differentiated from similar tissues through its positivity to the non-collagen proteins.

**ESSAY PROGRAM 2
TUESDAY, MAY 8, 2007**

#48 READ BY TITLE

AN UNUSUAL VARIANT OF SINONASAL SCHWANNOMA. REPORT OF A CASE AND REVIEW OF THE LITERATURE. S.A. J. Kazmi, P. Waite, & N. Said-Al-Naief. Sinonasal schwannomas are infrequent and account for only 4% of head & neck schwannomas. Similar to lesions encountered in other anatomical sites, the majority of cases reported in that region display classical features of schwannomas with some unusual morphological variants identified. We describe a case of a nasal Schwannoma in a 17yo black male with a rapidly growing mass in his nose. He was initially seen and biopsied by his local MD but a pathology report was not available since the procedure was performed in a remote area in Africa. The clinical impression was that of a fibroma or granulomatous lesion until more aggressive growth rate became obvious. The patient was asymptomatic but very embarrassed by his facial disfigurement and refused to leave the house. The mass was surgically excised under general anesthesia and his nose was reconstructed with local rotational flaps. Hemostasis was easily achieved. The tumor demonstrated a white rubber consistency with extension deep in to the nasal cavity. Penetration into the bone was not obvious. Histologically, the tumor appeared well circumscribed with pushing borders into the subcutis. It was composed of round to spindle cells predominantly arranged in compact cellular and focal less cellular, myxoid areas. Rare poorly formed Verocay bodies and few hyalinized vessels were identified. The nuclei were oval to spindle with bland evenly dispersed chromatin, and mitotic figures were not obvious. Numerous psammoma bodies were identified. The tumor cells stained positively with anti S100 protein, vimentin and collagen type IV but were non reactive for melanin, EMA, and SMA. The clinipathological features and the differential diagnosis of entities that show psammomatous calcifications in that region are presented.

#49 READ BY TITLE

ANEURYSMAL BONE CYST OF THE MANDIBLE ASSOCIATED WITH A BENIGN FIBRO-OSSEOUS LESION. J. Whitt, S. Prstojevich, C. Dunlap, B. Barker. U. Missouri Kansas City. The aneurysmal bone cyst is an uncommon benign lesion, the etiology and pathogenesis of which are poorly understood. We report a case of a young adult female who exhibited a destructive aneurysmal bone cyst of the mandible associated with a benign fibro-osseous lesion. A 19 year-old female presented with an asymptomatic swelling of her right mandible that had been slowly enlarging for over one year. Clinically, there was expansion of the inferior border as well as the facial and lingual cortical plates of the mandible. Radiographically, a unilocular lucency extended beneath and scalloped between the roots of vital teeth #29 through #31, producing a downward bowing of the inferior border of the mandible. The lesion was non-pulsatile; aspiration of the lesion yielded a return of dark blood. The lesion, which was easily removed from the bony bed, consisted of friable tissue and resembled a liver clot. The inferior bony cortex of the mandible had been eroded, leaving only periosteum. Facially and lingually a thin shell of expanded cortical bone remained. Histopathologic examination revealed thick, ribbon-like columns of benign cellular fibrous connective tissue enclosing a number of ectatic spaces, many of which were filled with blood. Within the stroma were multinucleated giant cells, extravasated erythrocytes, hemosiderin, as well as scattered droplet-like calcifications. Associated with the lesion, present as a minor component, was a benign fibro-osseous lesion containing numerous psammomatoid calcifications. At surgery, the mandibular nerve was repositioned and the fragile mandibular bone was reinforced with a metal plate to prevent pathologic fracture. Endodontic therapy was performed on the involved teeth. Follow-up at four months showed the normal progress of healing.