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#1

ORAL GRANULOCYTIC SARCOMA AS FIRST MANIFESTATION OF ACUTE MYELOMONOCYTIC LEUKEMIA. A CASE REPORT AND REVIEW OF THE LITERATURE.

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Objectives: Granulocytic sarcoma (GS or extramedullary myeloid tumor) is a rare solid tumor composed of immature cells of granulocytic lineage. GS develops in the course of acute myeloid leukemia and may affect various extramedullary sites. Only few cases of GS affecting the oral cavity have been reported. We present a rare oral GS case with an uncommon clinical presentation and summarize the clinicopathologic features of previously published cases. Clinical Presentation: A 76 year-old male presented with a buccal swelling of 1 month duration. No systemic diseases, other than diabetes and hypertension, were known. Clinical evaluation revealed a 2cm ulcerated mass with smooth contour and raised indurated borders, located on the right anterior buccal mucosa adjacent to sharped-edged teeth; extraoral swelling was also evident. Clinical differential diagnosis mainly included squamous cell carcinoma and chronic traumatic ulcer; other malignant tumors were also considered. Intervention and Outcome: A partial biopsy revealed a diffuse infiltrate by a monomorphous population of immature cells exhibiting nucleic atypia and high mitotic activity; immunohistochemical analysis showed myeloid and monocytic differentiation. Peripheral blood analysis showed elevated WBC (45000/¼l) combined with anemia and mild thrombocytopenia. A bone marrow biopsy identified 50% infiltration from blast cells positive for CD13, CD15dim, CD33, CD14, MPO, CD34 and HLA-DR. A final diagnosis of GS associated with acute myelomonocytic leukemia (AML M4) was rendered. Conclusion: GS is rarely affecting the oral cavity, especially as a first sign of acute myeloid leukemia. Histopathologic and proper immunohistochemical analysis of an oral biopsy specimen may provide the first clue to the diagnosis.

#2

COMPARATIVE CYTOLOGICAL AND HISTOLOGICAL CHARACTERISTICS OF ORAL MUCOSA IN PATIENTS WITH GRAFT-VERSUS-HOST DISEASE CYTOMORPHOMETRIC AND HISTOLOGICAL STUDY.

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Objective: To compare the cytological and histological features of oral cGVHD and compare the cytomorphometric features with a control group. Results: 8 cGVHD patients (4M /4F) with median age of 41yr (range: 23-59yr) were in this ongoing study. Of them, 2(25%) showed acute GVHD (media of onset: 10.5 days) and 6 (75%) showed cGVHD (media of onset: 8.8 months). Oral exfoliative cytology was done followed by oral biopsy at the same site. Oral lesions were classified as mild-37.5%, moderate-37.5% and severe-25% of patients. Lichenoid lesion was the most common clinical features (85%). Cytological features showed 85.71% of normal desquamative cells with mild atypia and inflammatory cells. Microscopic findings in oral biopsy showed normal cells with mild dysplasia, mild lymphocyte infiltrate (42.85%), moderate lymphocyte infiltrate (42.85%) and severe lymphocyte infiltrate with dyskeratotic cells(14.28%). Microscopic analysis showed changes in epithelium and lamina propria according to the NIH Consensus Group in all patients. Parabasal cell in cytological analysis was seen in 3 patients. Inflammatory infiltrate and cytoplasmic/nuclear cells were frequent. GVHD Horn and NIH Consensus Group classif were associated with cytological Papanicolaou grade II in 85.7%. Cytomorphometric study was performed showing 204.96µm and 1118.38µm of nuclear and citoplasmatic diameter, respectively (diameter: control group: nuclear - 37.22µm and cytoplasmatic - 251.441µm). The desquamative cells in GVHD were higher compared with control. In both exfoliative cytology and oral biopsy, the results showed concordance in the results. Conclusion: Exfoliative cytology could be useful and to be considered in the follow-up of patients undergone to allogeneic HSCT in the monitoring of cGVHD lesions.

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#3

AUTOIMMUNE VESICULO-BULLOUS DISEASE IN CHILDREN: REPORT OF TWO CASES

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Specific immunobullous disorders result from the inappropriate production of autoantibodies by the patient. These acquired conditions usually arise in adulthood with a mean age from the 4th to 7th decades. We present two cases of immunobullous disease that arose children: an otherwise healthy 4 year old female and a 14 year old female with history of ulcerative colitis. Case findings: A 4 year old female presented with six month history of desquamative gingivitis. A biopsy was performed, with samples submitted for both routine histopathologic analysis and direct immunofluorescence. A diagnosis of mucous membrane pemphigoid was made and the patient was referred to dermatology and ophthalmology for evaluation and treatment. No ocular involvement was detected by opthalmologic examination. Topical corticosteroid therapy was instituted and the patient showed no active disease at four month follow up. A 14 year old female presented with several month history of oral bleeding and persistent mouth sores. A biopsy was performed for routine and direct immunofluorescent analysis, resulting in a diagnosis of pemphigus vulgaris. The patient was initially prescribed prednisone to control her disease, then switched to Imuran. At four month follow up, the patient reported reduced oral lesions and pain with no additional sites of involvement. While uncommon, specific immunobullous conditions can affect children and support the need for routine biopsy and direct immunofluorescent examination to confirm the diagnosis and direct proper treatment.

#4

EBV-ASSOCIATED MUCOCUTANEOUS ULCERATION IN AN IMMUNOSUPPRESSED PATIENT.

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The Epstein Barr virus (EBV) in patients with different types of immunosuppression has been associated with B-cell lymphoproliferative disorders. EBV causes B-cell transformation and proliferation by upgrading expression of some genes such as NF-kB. In order to reach a correct diagnosis, a combination of clinical, morphologic, and immunophenotypic parameters is helpful. A 40-year-old male, presented with a complex medical history to include; post renal and pancreas transplant and has been taking tacrolimus, prednisone and mycophenolate for over three years. Histologically, the biopsy showed non vital bone with small fragments of necrotic debris between teeth 29-30. The mucosa in the same area was partially surfaced by parakeratinzing squamous epithelium but was significantly ulcerated. Large atypical cells were present in granulation tissue beneath the ulcer. These large cells showed a binucleate appearance reminiscent of Reed-Sternberg cells. Because of the histologic picture, immunohistochemical stains for CD30 and Epstein Barr virus (EBER) were ordered. The CD30 stain highlighted numerous cells within the nodular focus of granulation tissue. The EBER stain showed diffuse positivity in the Reed-Sternberg cells and numerous other lymphocytes. Based on strict histologic and IHC features, we were able to reclassify his condition as EBV-associated mucocutanous ulceration.

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#5

TREATMENT OF HERPES VIRUS-ASSOCIATED LESIONS USING A SYNERGISTIC BOTANICAL BLEND

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Objectives: Herpes virus-associated recurrent oral epithelial excoriations can be painful and debilitating. Current treatment methods offer mixed degrees of success. The botanicals, Sarracenia purpurea and Melissa officinalis, have historically been used for treatment of viral infections. Using cell culture systems, we sought to further characterize these botanicals in potential anti-herpes activity and associated mechanisms of action. Based on these results, an evidence-based, synergistic botanical blend could be formulated for therapeutic application. Methods: Cell culture studies was done using Vero cells infected with HSV-1 or VZV. Viral replication was monitored following treatment with the botanical extracts. The mechanism of action of each botanical was determined using established viral attachment and replication assays. Therapeutic studies were done using patients with diagnosed Herpes Labialis or Zoster using the combined botanicals in a gel base with daily topical applications. Results: Cell culture studies demonstrated that both Sarracenia purpurea and Melissa officinalis extracts have potent anti-herpes activity and target the replication of the viruses at specific but distinctly different steps in the replication cycle. Clinical application using the synergistic botanicals demonstrated successful treatment of herpes labialis/zoster in afflicted patients with improved healing time and pain reduction when compared to typical infection outcomes. Conclusions: This research highlights potential therapeutics for herpes lesions using a mechanistically-characterized topical botanical blend with clinical successes in treating HSV-1 and Zoster outbreaks. This botanical blend offers the potential for safe, efficacious treatment of recurrent herpes.

#6

CALCIFIED RETROPHARYNGEAL LYMPH NODE: AN INCIDENTAL FINDING ON PANORAMIC RADIOGRAPHY, & LITERATURE REVIEW OF RETROPHARYNGEAL CALCIFICATIONS

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We report the incidental finding of a calcified retropharyngeal lymph node in a 74-year-old male who presented for routine dental treatment. Panoramic radiography revealed a large radiopacity overlapping the left mandibular ascending ramus. The patients medical history was significant for thyroid and lung cancer, cardiac disease, and type 2 diabetes mellitus. A cone-beam computed tomography (CBCT) study was requisitioned to further investigate the lesion. CBCT revealed a well-delineated, calcified structure with a heterogeneous, loculated internal density anterior to the left aspect of the first cervical vertebra. The appearance was consistent with a calcified lymph node. Degenerative changes of the cervical vertebrae and additional calcifications in the region were also noted on CBCT, and medical evaluation of the findings recommended. Medical consultation returned a known 8-year history of a calcified lymph node in the left retropharyngeal region. Multiple additional calcified lymph nodes were noted inferior to this area. Degenerative changes were also visualized at several levels of the cervical spine. All lesions noted on medical CT were stable over the first half of the 8-year period. No history of tuberculosis was provided. Asymptomatic masses discovered in the retropharyngeal region on oral and maxillofacial radiography must be diagnosed and differentiated from similar radiopacities which may occur in the region, such as phleboliths and vertebral osseous neoplasms. Oral and maxillofacial radiology findings may highlight a previously undetected tuberculous lymphadenitis or other pathology requiring medical follow-up. This case highlights the importance of collaboration between medical and dental professionals in the comprehensive management of patients.

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#7

ELECTRONIC CIGARETTE EXPLOSION: CASE REPORT OF AN EMERGING CAUSE OF OROFACIAL TRAUMA

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Electronic cigarettes (e-cigarettes) are a type of electronic nicotine delivery system. Since their introduction into the U.S. market in 2007, e-cigarettes have surged in popularity. Health and safety concerns primarily have focused on the composition of generated aerosols and whether these devices represent a gateway versus lower risk alternative to conventional cigarettes. Furthermore, recent incidents have demonstrated the potential for device explosion. Objective: To document a case of orofacial injury from e-cigarette explosion. Clinical presentation: A 20-year old male stated that an e-cigarette exploded in his mouth shortly after he changed the battery. He initially sought treatment at a hospital emergency department for orofacial burns and lacerations. Subsequently, he presented to our dental clinic for further evaluation. Examination showed injury to the lips and gingiva; partial avulsion to complete loss of the mandibular central incisors; and fractures of multiple anterior teeth. Intervention and Outcome: #25 was deemed hopeless and extracted. The patient was advised to return for assessment of further treatment needs but was lost to follow-up. Conclusions: Only one other case of oral trauma from e-cigarette explosion has been reported in the scientific literature to date, although a few similar incidents also have been reported by the news media. Design/manufacturing issues and improper handling can cause an increase in internal battery temperature (or “thermal runway”). An investigation by the U.S. Fire Administration concluded that user education may aid in preventing some e-cigarette explosions, although safety design improvements also could help. Further studies of such incidents as well as other potential health hazards of e-cigarettes are needed.

#8

TOBACCO AND ALCOHOL USE AND KNOWLEDGE OF POTENTIAL HEALTH ISSUES IN AN UNDERSERVED COMMUNITY IN WEST VIRGINIA

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In a 2010 survey of 325 homeless persons performed by Moore et al., only 71.2% and 21.1% of participants realized tobacco use can lead to lung or head/neck cancer, respectively, despite nearly 75% reporting at least a ninth-grade education. Our aim was to gather similar data on tobacco use and knowledge of its associated health effects in an underserved community at a free clinic in Morgantown, WV. We also included knowledge regarding alcohol use in the same group. After obtaining IRB approval and a sub-grant award made possible by a grant to the West Virginia University (WVU) Foundation and the WVU Interprofessional Education Office from the Claude Worthington Benedum Foundation, data collection began. Preliminary data was collected from 58 participants where 98% reported knowledge that tobacco use can lead to lung cancer and 93% reported awareness that tobacco use can lead to oral cancer. Only 36% were aware alcohol may play a role in oral cancer development. Interestingly, there was no significant difference in education level and knowledge that alcohol may play a role in oral cancer ($p = 0.234$). In our sample, education level was also not significantly associated with tobacco use prevalence ($p = 0.17$). These data represent preliminary findings with a small sample size. Further research is essential in this area in order to properly assess knowledge gaps in underserved communities regarding tobacco and/or alcohol as a possible etiologic factor in oral squamous cell carcinoma. Studies such as this may also help design specific educational tools to address these discrepancies.

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#9

SYSTEMIC MEDICATION USE IN A COHORT OF BURNING MOUTH SYNDROME PATIENTS

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Introduction: Burning mouth syndrome (BMS) is defined as a chronic burning sensation in normal appearing oral mucosa. While some medications may themselves cause burning in the mouth, the association between burning mouth and most medications remains unclear. Material and Methods: This study expanded on our previous study of a retrospective cohort of 64 BMS patients from the oral medicine clinic of UF College of Dentistry from 2009-2014 (Hakeem et al, poster at AAOMP Annual Meeting 2015). That study was an in-depth analysis of the efficacy of various medications in alleviating burning mouth symptoms. All patient records were reviewed for medication usage and categorized by medication subtype and analyzed. Results: Of the 64 patients, 96.7% (n=62) reported taking at least one medication. The most common medication categories were in decreasing order: anti-hypertensives 57.81%, anti-inflammatory 50%, medications for psychiatric conditions 48.43%, and cholesterol lowering medications 40.62%. Other categories were less commonly represented. When analyzed with outcome data from our prior study, no significant association was noted between those using or not using the four most frequently reported medication categories in relation to patient reported improvement after treatment for BMS (chi-square, anti-inflammatories: p=0.876, anti-hypertensives: p=0.944, psychiatric meds: p=0.807, or cholesterol lowering meds: p=0.697). Conclusions: Usage of systemic medications in BMS patients was very common. However, these medications did not impact treatment outcomes in BMS patients. Clinically, it may be helpful to differentiate medication related oral burning from true BMS.

#10

PATIENT AND REFERRAL CHARACTERISTICS OF A CLINICAL ORAL PATHOLOGY PRACTICE

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The goal of the study was to describe the characteristics of a clinical oral pathology practice in the University of Pittsburgh School of Dental Medicine, with emphasis on patient profile and referral patterns. Parameters recorded include: age, sex, driving distance, duration of complaint, referring practitioners specialty, number of practitioners seen, and final diagnosis. Ninety-nine percent (314 out of 318) of new patient records from 2012-2014 were available for review. The mean age was 55.2 years old (range 3-92), with 72.6% female. Patients travelled a mean distance of 28.0 miles (range 0-277 miles) and saw on average 2.4 practitioners (range 0-8) before consultation. Three percent of patients experienced current symptoms for more than 10 years and for the rest of the patients, the mean time from initial symptoms to evaluation by an oral pathologist was 13.0 months (overall range: 1-240 months, mode: 12 months). Seventy-seven percent of patients were referred by dentists, with 55.1% of those coming from general dentists, and 30.9% from oral surgeons. Among the 16.6% of referrals from physicians, 55.8% were from ENT specialists and 17.3% from primary care providers. The most common diagnoses (multiple diagnoses were considered) were lichen planus (22.3%), candidiasis (20.4%), xerostomia (18.2%) and burning mouth syndrome (9.6%). Clinical oral pathology patients often travel long distances, see several practitioners, and experience symptoms for more than one year before consultation with a clinical oral pathologist. Increasing awareness to dentists and physicians of the services that a clinical oral pathologist provides, and a more even geographic distribution of clinical oral pathologists may help to decrease patient cost, travel time, and morbidity.

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#11

ANETODERMA-LIKE CHANGES IN LESIONS OF THE ORAL CAVITY; TWO EXAMPLES OCCURRING IN AN UNREPORTED LOCATION

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Objective: Anetoderma is an acquired condition of the skin defined by a localized decrease in elastic fibers of the connective tissue. Clinically, the lesions present as flaccid, sac-like oval patches on the skin. Histologically, lesions of anetoderma show decreased or absence of elastic fibers associated with thickened collagen bundles. It is theorized that anetoderma-like changes occur in areas of trauma and may be associated with an inflammatory response. The appearance of these skin alterations can be cosmetically displeasing. In such instances, the anetodermal lesions are treated by surgical excision. This study is the first report to describe anetoderma-like changes presenting in the oral cavity. Clinical presentation: The first case presented as a 1.6 cm smooth-surfaced plaque on the labial mucosa of a 69 year old female. The second case involves a 64 year old male exhibiting a 0.6 cm white macule located on the ventral surface of the tongue. Intervention and Outcome: Both patients were managed with local surgical excision. Histologically, both specimens exhibited anetoderma-like changes consisting of haphazardly arranged and thickened collagen fibrils intertwined with rare elastic fibers. This phenomenon was highlighted by a Verhoeff's elastic stain illustrating an almost complete absence of elastic fibers throughout the lesional tissues. A scattered chronic inflammatory infiltrate was noted. In addition, the thickened collagen deposits showed positivity for Masson's trichrome and PAS histochemical stains and Collagen type IV immunohistochemical stain. Conclusions: Anetoderma is a well-known, somewhat common condition of the skin. To our knowledge, this study is the first to report cases of anetoderma-like changes occurring in the oral cavity.

#12

ORAL LINEAR EPIDERMAL NEVUS: A CASE REPORT AND REVIEW OF THE LITERATURE

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Linear epidermal nevus (LEN) is an hamartomatous lesion of the skin caused by a proliferation of embryonic ectodermal cells distributed in a linear pattern following Blaschkos lines. Oral involvement of LEN is rare with only few cases reported to date in the English literature. Oral LEN usually appears as verrruco-papillary lesion present at birth or during childhood. Most cases of oral LENs are associated with cutaneous lesions. Oral LENs without skin involvement are extremely unusual. Approximately 6 cases of LEN with exclusive oral involvement have been reported since the first documented cases by Brown and Gorlin in 1960. We report a case of LEN confined to the oral mucosa. A 5-year-old boy was referred by a general dentist to the oral pathology clinic for evaluation of a pink papillary lesion located in the midline of the hard and soft palate extending to the uvula. The lesion presented a characteristic linear pattern of distribution. No skin lesions were discovered during the clinical examination. An incisional biopsy was taken. Microscopic examination revealed an epithelial lesion with papillary projections surfaced by a hyperparakeratinized stratified squamous epithelium with acanthosis and elongated rete ridges. A mild chronic inflammatory infiltrate was present in the underlying lamina propria. No further treatment was performed. After a one-month follow-up period, no significant changes were observed in the lesion.

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#13

ALVEOLAR SOFT PART SARCOMA OF THE TONGUE IN A 17 YEAR OLD FEMALE: A CASE REPORT

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Alveolar soft part sarcoma is an uncommon malignant neoplasm. This tumor most commonly occurs in adolescents and young adults. There is a definite female predominance particularly among younger patients. The tumor tends to occur commonly in the lower extremities in adult patients but in younger patients the most common location is the head and neck area especially orbit and tongue. We report a case of alveolar soft part sarcoma that presented as a nodule on the tongue in a 17 year old female. The clinical presentation and microscopic features are discussed. The characteristic histochemical and immunohistochemical features that are helpful in the diagnosis of this rare tumor are elaborated. The latest cytogenetic study that is considered to be both sensitive and specific for alveolar soft part sarcoma was performed for this case to confirm the diagnosis. In addition, the microscopic differential diagnosis, theories regarding histogenesis and prognosis for this tumor are explored.

#14

INTRAOSSEOUS PERINEURIOMA ASSOCIATED WITH FACIAL CELLULITIS AND ABSCESS FORMATION

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Extraneural peurineuriomas are benign proliferations of perineurial cells that most frequently involve the subcutis and deep soft tissues of the extremities and trunk. Mandibular localization is extremely rare with only seven cases reported to date. We describe a 13-year-old female who presented with a progressively enlarging mass of the right mandible associated with facial swelling and erythema. Intraoral examination revealed partial obliteration of the mandibular vestibule and focal perforation of the lingual cortex. On radiographic examination, a well-defined radiolucency was identified apical to tooth #31, which did not exhibit evidence of caries and had no disclosed history of trauma. The patient underwent extraction of #31 with apical curettage and vestibular drainage. Histopathologic examination of the apical tissue revealed a moderately cellular proliferation of bland, spindle-shaped cells embedded within a collagenous matrix. The cells were arranged in a predominately fascicular pattern and entrapped neurovascular elements were noted at the periphery. The spindle cells showed strong positivity with Glut-1, focal and weak reactivity with EMA, and negative staining with CD34 and S100, compatible with the profile of perineurial cells. Based on the histological and immunohistochemical features, a diagnosis of perineurioma was rendered. The patients post-operative course was uneventful and she is without evidence of disease at two months. Although exceedingly rare, intraosseous perineurioma is a diagnostic consideration for an expansile radiolucency of the mandible. Histomorphologic examination and immunohistochemical analysis are necessary to distinguish this entity from the more common benign nerve sheath tumors and spindle cell proliferations.

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#15

BENIGN VASCULAR LESIONS OF THE LIPS: CLINICAL AND MORPHOLOGICAL ASPECTS OF 140 CASES

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Objectives: Vascular lesions constitute a widely heterogeneous group of diseases, especially represented by malformations and tumors. In oral mucosa, besides malformations and tumors, reactive lesions, such as pyogenic granuloma have a great incidence. In the present study we aimed to describe clinic-pathological aspects of a series of vascular lesions of the lips which are frequently misdiagnosed by clinicians and thus, sometimes unnecessary biopsies are performed. Methods: One hundred and forty cases were retrieved from our records and cases diagnosed as caliber-persistent artery (CPA), hemangiomas (HEM), vascular malformations (VM), venous lake (VL), thrombus(TH), papillary endothelial hyperplasia (PEH), and pyogenic granuloma (PG) were found. Slides were reviewed and immunostaining with anti- human glucose transporter protein of the erythrocyte type (GLUT-1), antigen expressed by hematopoietic precursor cells (CD34), podoplanin (D2-40) and alpha smooth muscle actin (SMA) were performed. Also, data including gender, age and duration of the lesion were obtained from patients` records. Results: In reviewing the slides 33 diagnosis were changed. The most frequent diagnosis was PG (63 cases), followed by VL (23 cases), TH (19 cases), HEM (17 cases), PEH (12) CPA (4 cases) and VM (2 cases). As shown in this study and in agreement with other authors, GLUT-1, was positive only for infantile hemangioma whilst the other markers were positive in all vascular walls, except for podoplanin that was negative. Conclusion: It is important to properly diagnose vascular lesions as clinical management may vary.

#16

INTRAORAL LIPOFIBROMATOSIS: A CASE REPORT OF A RARE TUMOR IN AN UNCOMMON LOCATION

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Objective: Lipofibromatosis is a rare, benign pediatric soft tissue tumor. The first 45 cases of lipofibromatosis were described in 2000 by Fetsch et. al. It presents from birth to childhood as an asymptomatic, slowly growing mass. The tumor exhibits a striking predilection for the subcutaneous and deep soft tissues of the distal extremities. However, there have been rare reports of cases involving the trunk, and head and neck. Clinical Presentation: A 2-year-old female presented with a three-month history of an expansile soft tissue mass of the left mandibular buccal vestibule. The mass did not appear to cause any pain, but it distorted the external chin and lip anatomy. Intraorally, the mass was yellowish in color, and measured 1.2 cm. Intervention and Outcome: Our patient was managed with local surgical excision of all visible pathological tissue, preserving surrounding vital structures. Histopathologic examination revealed abundant mature adipose tissue separated into lobules by variably collagenized fibrous septae. Both the adipose and fibrous components infiltrated and entraped regional structures including skeletal muscle and nerve. These findings lead to the diagnosis of lipofibromatosis. Conclusion: Only a single case of the original 45 examples of lipofibromatosis was located in the oral cavity. To our knowledge, this is the first report to detail a case of intraoral lipofibromatosis.

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#17

HERMANSKY-PUDLAK SYNDROME: A RARE CASE REPORT

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Objective: to present a case of a rare syndrome with head/neck manifestations that also requires medical management for dental treatment Clinical Presentation/Case: A 52-year-old male patient with diabetes and hypertension was referred to the NYU Oral Medicine Clinic for a movable, non-tender, relatively well-defined left neck mass. The patient reported that he has been diagnosed with Hermansky-Pudlak Syndrome, which is a rare autosomal recessive condition characterized by pigmented skin lesions/lentigines with possible malignant potential, visual impairment, albinism and bleeding issues due to a platelet storage pool defect. This patient presented with all of these key findings. Patients may also often present with fat-protein deposits (ceroid lipofuscin) in the skin, lymph nodes, lungs and kidneys. Hermansky-Pudlak Syndrome has a worldwide prevalence of 1 in 500,000 but a significantly higher prevalence of 1 in 1800 in Puerto Ricans as in this patient. Intervention/Outcome: The patient was referred to oral surgery for further imaging and biopsy of the neck mass. The clinical diagnosis is a fat-protein deposit consistent with the syndrome; however, the differential diagnosis includes a branchial cleft cyst and lipoma. Biopsy is pending and will be performed shortly. Atraumatic surgical technique and hemostatic measures will be important biopsy considerations due to the platelet abnormalities in this syndrome. Conclusion: Although rare, Hermansky-Pudlak Syndrome is an important condition that should be recognized by dental providers. These providers should be aware of the significant bleeding issues, possible fat-protein deposits in the head and neck areas and increased risk of skin cancers such as basal and squamous cell carcinomas of the lips and face.

#18

PAPILLARY CYSTADENOCARCINOMA OF THE SUBLINGUAL GLAND. CASE REPORT AND LITERATURE REVIEW

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Objective: Papillary cystadenocarcinoma (PCAC) is a rare malignant salivary gland tumor most commonly affecting the major glands, mainly the parotid. Localization in the sublingual salivary gland is most unusual. We present an exceedingly rare case of PCAC of the sublingual gland in an older female. Based on a comprehensive literature review, the demographic and clinicopathologic features of PCAC of the sublingual gland are summarized and its microscopic differential diagnosis is discussed. Clinical Presentation: We present a case of PCAC originating from the right sublingual gland in a 78 years old female. The patient presented with an asymptomatic but progressively grown swelling in the floor of the mouth of three months duration. A computed tomography scan depicted a homogeneous lesion with well defined borders in the right sublingual space; no cervical lymphadenopathy was observed. Biopsy examination revealed numerous haphazardly arranged cystic spaces with papillary projections; the cystic lining was composed of columnar and mucous cells. These features were indicative of a cystadenocarcinoma. Intervention and Outcome: Surgical excision of the tumor was undertaken and histological examination confirmed the diagnosis of PCAC. After eighteen months of follow up, no signs of recurrence have been noticed. Conclusion: A rare case of PCAC of the sublingual gland is presented, which, to the best of our knowledge, constitutes only the sixth documented case in this location and the only one to affect a female. Knowledge of the clinicopathologic features of this rare entity and its differential diagnosis from other similar looking salivary gland neoplastic entities is of paramount importance for accurate diagnosis and adequate management.

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#19

INTRAOSSEOUS ANCIENT SCHWANNOMA, CASE PRESENTATION

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25 to 45% of Schwannomas occur in the head and neck area. Intraosseous Schwannomas are asymptomatic and if present in the mandible, grow slowly as unilocular radiolucencies with sclerotic borders and cortical expansion. A 28 year-old woman was admitted to the Miguel Hidalgo Hospital in Aguascalientes, Mexico. Her chief complaints were trismus and painless swelling of the face noted two years prior to consultation. Imaging studies revealed a large expansive unilocular radiolucency extending from the posterior area of the mandibular third molar to the condyle. The radiographic features were suggestive of ameloblastoma or odontogenic myxoma. An incisional biopsy was obtained and interpreted as benign fibrous histiocytoma. The slides and paraffin embedded tissues were sent to us in consultation. The H&E slides showed a circumscribed proliferation of spindle mesenchymal cells, some atypical, with clusters of macrophages and aggregates of hemosiderin. The immunostains showed a low mitotic index (Bcl2 and K1-67 less than 2% in hot spots). However, the tumor cells gave a strong positive signal with S100. A diagnosis of intraosseous ancient neurilemmona was rendered. The tumor was surgically excised. Imaging studies at follow-up one and a half years later showed resolution of the lesion. This case emphasizes the importance of ancillary tests (i.e., immunohistochemistry) to secure a correct diagnosis.

#20

SINONASAL NODULAR FASCIITIS: CASE PRESENTATION AND LITERATURE REVIEW

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Introduction: Nodular fasciitis (NF) is a lesion of myofibroblasts and fibroblasts, characterized by proliferating, mitotically active spindle cells arranged in short, irregular bundles. The entity simulates sarcoma due to the hypercellularity, mitoses and infiltrative growth pattern. NF is often self limiting. NF exhibits the MYH9-USP6 gene fusion, first identified in 2011. The molecular findings suggest NF is a transient neoplasm. NF is most commonly found in the subcutaneous tissues of the upper extremities and in the head and neck region overlying bone. Intraoral presentation of nodular fasciitis is rare and sinonasal manifestation rarer still. Clinical Presentation: A five year old male presented with epistaxis. Clinical examination and computed tomography scan revealed a soft tissue mass in the right nasal passage, extending posterior into the nasopharynx with bony erosion of the right maxillary and ethmoid sinuses. Biopsy demonstrated an ulcerated mass composed of spindle shaped myofibroblasts and fibroblasts arranged in interlacing fascicles with a myxoid stroma, mitoses, inflammatory cells and extravasated red blood cells. A provisional diagnosis of NF was rendered. Immunohistochemical stains were positive for smooth muscle actin and negative for desmin, myogenin, S100, GFAP, calponin, CD34, EMA and cytokeratin AE1:3. Fluorescence in-situ hybridization (FISH) studies demonstrated 17p13 rearrangement involving the USP6 breakpoint, thus confirming the diagnosis of NF. Conclusion: NF is clinically self limiting lesion characterized by a recurrent somatic gene fusion event.

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#21

LYMPHANGIOMA OF THE MAXILLARY SINUS

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Background: Lymphangioma is regarded as a benign, hamartomatous tumor of lymphatic vessels. Histologically, lymphangiomas are comprised of dilated endothelial lined channels of varying caliber that contain proteinaceous fluid and lymphocytes. Lymphangioma has a marked predilection for the head and neck region, rarely being described in the maxillary sinus. Clinical Presentation: A 20 year old woman presented for evaluation of unerupted third molars. A panoramic radiograph demonstrated a well-demarcated, expansile, radiodense lesion that encompassed the inferior portion of the right maxillary sinus, and the position of the third molars. Excision of the contents of the maxillary sinus, using a Caldwell-Luc approach, was performed at the time of third molar extraction. Intervention and Outcome: A diagnosis of lymphangioma of the maxillary sinus was made based on the final processed H&E slide. The histopathology demonstrated respiratory mucosa with minimal underlying stroma, which was populated by numerous lymphatic channels some of which were markedly dilated. These spaces also contained lymph fluid, few lymphocytes, and no red blood cells. Immunohistochemical stains were negative for CD31, CD34, D2-40 (podoplanin), and GLUT-1. Conclusion: The characteristic histopathologic features of lymphangioma were defined despite negative immunohistochemical profile for lymphatic endothelium. This case is presented to highlight the radiographic features of this lesion that mimic more common sinus pathologies. There have been only two prior cases of lymphangioma in the maxillary sinus. These cases had identical radiographic and pathologic features to the current case.

#22

UNUSUALLY DESTRUCTIVE INVERTED SINONASAL PAPILLOMA WITH EXTENSION TO THE MIDDLE CRANIAL FOSSA:A CASE REPORT

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Objective: The purpose of the report is to present a case of an unusually aggressive inverted papilloma IP with malignant transformation and invasion of the middle cranial fossa causing extensive destruction of the temporal bone. Clinical Presentation: A 22-year-old male with a history of recurrent sinonasal IP of the left paranasal sinuses was found to have evidence of extension through the lateral wall of the ethmoidal sinus. CT scan and MRI revealed extensive involvement of the temporal bone and the walls of the cavernous sinus. The lesion was multi-cystic and fluid filled. Histologic examination of the bulk of the specimen revealed typical microscopic features of IP with minimal nuclear atypia and subacute stromal inflammation and fibrosis. However, foci of low-grade malignant transformation were appreciated. Immunohistochemical stains for p16, p53 and Ki67 were positive with over 70% Ki67 positivity. Intervention and Outcome: The patient underwent multiple procedure to eradicate the lesion. The last surgical procedure was extended to the cavernous sinus and the patient was set out for adjunctive radiotherapy. Conclusion: We present an unusually aggressive inverted papilloma with focal malignant transformation and significant destruction of adjacent skeletal structures. This case emphasizes the need for close clinical follow up in all cases of IP.

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#23

LOW GRADE FIBROMYXOID SARCOMA OF THE MAXILLA, A DIFFERENTIAL DIAGNOSIS FROM FIBROMYXOMA.

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Objective: To present a case of a low grade fibromyxoid sarcoma (LGFMS) mimicking a fibromyxoma in an incisional biopsy. Clinical Presentation: A 14 years old female patient attended in our Oral Medicine Clinic, at intra oral examination exhibited an increased volume in the right maxilla, the surface was smooth and similar to the adjacent mucosa. Computed tomography revealed a well-defined osteolytic lesion occupying all the right maxilla without perforation of the cortical bone. Incisional biopsy was performed and histologically processed. Histopathological diagnosis: Fibromyxoma Intervention and Outcome: The patient was referred to the General Hospital of Mexico (HGM) Eduardo Liceagain the maxillofacial surgery department, and subjected to a right side hemimaxillectomy, a final diagnosis was performed aided with immunohistochemistry of a Low grade fibromyxoid sarcoma was emitted. After four months period the patient showed no evidence of recurrence. Conclusions: Lesion revealed hypercellular spindle cell neoplasm with a fascicular growth pattern so that It is important to note as a differential diagnosis in fibromixoid lesions the low-grade fibromyxoid sarcoma because in incisional biopsies can it look like a fibromyxoma.

#24

LOCALIZED (JUVENILE) SPONGIOTIC GINGIVAL HYPERPLASIA: A SERIES OF SEVENTEEN CASES

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OBJECTIVE: We present a case series of localized juvenile spongiotic gingival hyperplasias (LJSGH), a lesion of unknown etiology that typically affects the anterior maxillary gingiva in children and young adults. It presents as a bright red, raised, well-demarcated lesion with a slight papillary or granular surface. Lesional epithelium is characteristically positive for CK19, a marker of junctional epithelium. METHODS: Cases of LJSGH from 2008 to present were retrieved from the University of Pittsburgh Oral Pathology Biopsy Service archives and reviewed. Clinical and demographic data from these cases were collected. RESULTS: Seventeen cases were identified. No significant sex predilection was noted (M:F=1.13:1). The age range was from 8 to 53 years (mean: 19.1). All cases were confined to the anterior portions of the jaws as single lesions. Sixteen (94.1%) cases occurred in the maxilla with only one mandibular case (5.9%). The most common clinical impression was pyogenic granuloma (58.8%). In two patientsaged 53 and aged 50CK19 staining was utilized to confirm the histopathological findings, and it was strongly positive throughout the full-thickness of the lesional epithelium in both cases. Three cases (17.6%) presented as recurrences(range: 17 months to 10.5 years). The case that recurred after 10.5 years had identical histomorphology to the initial case that was signed out descriptively in 2005, prior to the characterization of LJSGH. CONCLUSION: As in other series, LJSGH in our experience is most commonly seen in the anterior maxilla of children and young adults. We report two cases of LJSGH in middle-aged adults and demonstrate the diagnostic utility of CK19 in unique cases. Thus, this diagnosis should be considered in middle-aged adults despite its current name.

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#25

MYOFIBROMA OF THE ORAL CAVITY: AN ANALYSIS OF A LARGE SERIES OF 24 NEW CASES AND REVIEW OF THE LITERATURE

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Introduction: Oral Myofibromas are rare soft tissue tumors exhibiting considerable histopathologic overlap with other benign and malignant entities. Clinical and histopathologic characteristics of a large series of 24 new cases are documented and discussed. Materials and Methods: An IRB-approved retrospective search for myofibromas of the oral cavity was performed within the archives of the UF Oral Pathology Biopsy Service (1994-2014) and the UF Surgical Pathology Biopsy Service (1996-2014). The original slides were reviewed. The age, gender, race, location, clinical impression, duration, and results of immunohistochemical studies were recorded. Results: Of the 24 cases identified, 54.2% (13/24) of the cases were male and 45.8% (11/24) were female. The age ranged from 10 months to 68 years, with an average of 30.4 years (median 19). Nine of the 24 cases (37.5%) were from the mandibular alveolar mucosa, 9 (37.5%) lower labial or buccal mucosa, 2 (8.3%) mucosa of the hard palate, 2 (8.3%) in the mandible (intraosseous), and one (4.2%) each on the tongue, and in the submandibular mucosa. Of the 15/27 cases with known race, 80% were Caucasian while 20% were African American. The various histopathologic characteristics of myofibroma, including zoning phenomenon, fascicular arrangement of cells, crescent-shaped vascular spaces, and hemangiopericytoma-like areas were noted and evaluated. Conclusion: Myofibromas demonstrate a variety of clinical and histopathologic patterns that may resemble several other entities. While immunohistochemistry may help, the diagnosis of myofibroma largely is made based on histopathologic patterns alone.

#26

SUBGEMMAL NEUROGENOUS PLAQUE: TWO CASES AND A REVIEW OF THE LITERATURE

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Objective: Our objective was to describe two cases of subgemmal neurogenous plaque that were diagnosed at our institution. Clinical Presentation: Both cases appeared in the right lateral tongue. Case 1 had a three-month history of pain, described by the clinician as a firm ulcer.Case 2 presented as a 1 x 1 mm painless white patch for about 1.5 years. Intervention and Outcome: An incisional biopsy was obtained for case 1 and an excisional biopsy was performed for case 2. Histopathology for both cases revealed taste buds with a proliferation of subepithelial nervous tissue as confirmed by immunohistochemistry. Case 1 was also associated with a traumatic ulcerative granuloma with stromal eosinophilia (TUGSE). The patient in case 1 has had an improvement of symptoms and is awaiting excisional biopsy; the patient in case 2 has not returned for follow-up. Conclusion: Subgemmal neurogenous plaque is likely a hyperplastic proliferation of nervous tissue in response to trauma, and may be associated with other traumatic entities that occur in the oral cavity.

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#27

A NOVEL HISTOPATHOLOGIC FINDING IN A RADIOPAQUE MAXILLARY LESION OF A PATIENT WITH C3 GLOMERULONEPHRITIS: A CASE REPORT

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Objective: Glomerulonephritis is a term encompassing a variety of causes of inflammation of the glomeruli of the kidneys. C3 glomerulonephritis (C3GN) is a recently described entity which results from abnormalities in the alternative pathway of complement and causes the deposition of C3 along the glomerular basement membrane. Oral manifestations of this condition have yet to be reported. This case report is the first to identify an oral manifestation of the disease, describe its histologic findings and highlight the effects of renal disease in gnathic bones. Clinical Presentation- We report a case of a 12 year old male with C3GN who presented with a radiopaque lesion of the maxilla which demonstrated an unusual histopathologic appearance. The expansile lesion was located between teeth 12 & 13. The microscopic picture of the lesion was unique and displayed hypercellular bone with numerous osteocytes noted in juxtaposition to less cellular more normal appearing bone. Intervention: Initially, the patient had a biopsy and returned approximately one year later for another biopsy due to persistent swelling. The second biopsy was histologically identical. The patient is presently being followed without surgical intervention. Conclusion: While renal disease is strongly associated with osseous changes, this distinct osseous pattern has not been described in the gnathic bones. The presence of a tumor like mass and its distinctive histology makes this the first reported case of oral manifestations of C3GN. This case report may be the first step in the recognition of a novel osseous entity which develops in parallel with the systemic renal disease C3GN. Hopefully this case report will lead to the recognition of additional oral and systemic manifestations of this disease.

#28

ANALYSIS OF TRAUMATIC ULCERATIVE GRANULOMA WITH STROMAL EOSINOPHILIA: CD30 AND CLONALITY.

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ANALYSIS OF TRAUMATIC ULCERATIVE GRANULOMA WITH STROMAL EOSINOPHILIA: CD30 AND CLONALITY. Aizic A, Shlomi B, Solar I, Raiser V, Kaplan I. Tel-Aviv Sourasky Medical Center and Tel-Aviv U, Israel Background: traumatic ulcerative granuloma with stromal eosinophilia (TUGSE) is an ulcer of oral cavity of unknown etiology. Occasionally, atypical CD-30 positive cells have been reported, suggesting a subset may represent oral counterpart of cutaneous CD30+ T-cell lymphoproliferative disorders. Most cases were self limiting,however, wide-excision and a life-long followup has been proposed. Objectives: To compare prevalence and clinical significance of CD30+ atypical cells and T-cell clonality in TUGSE versus non-specific oral ulcers (NSU). Methods: Cases of TGUSE or NSU, 2010-2015. Histomorphometric analysis, CD30 and PCR for rearrangement of TCR gene were performed. Results: 16 cases of TUGSE and 8 NSU were analyzed. For TUGSE mean age was 60,M:F ratio 1.5:1. The most common oral location was tongue (43%). Trauma documented in 25%. For NSU, mean age was 47, M:F ratio 1:2.3. The most common location was tongue (57%). In TUGSE mean eosinophil number exceeded 100 /10 HPF versus 15 in controls. Inflammatory infiltrate involving deep mucosa and muscle fibers was found in both groups. Single cells or small clusters of CD30+ atypical cells were found in 5(31%) of the TUGSE and 1(12%) of controls. None of the cases was monoclonal. Healing was reported in all cases and none developed lymphoma or lymphoproliferative disorder after biopsy (1-6 years FU). The present analysis fails to support the suggestion that the CD30 + atypical cells in TGUSE represent a risk for T-Cell lymphoproliferative disease. This would also lead to the recommendation of conservative treatment only.

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#29

ERDHEIM-CHESTER DISEASE PRESENTING IN THE ORAL CAVITY: REPORT OF TWO CASES AND REVIEW OF LITERATURE

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In 1930, Chester and Erdheim reported a rare case of non-Langerhans histiocytic disorder of adults with diverse multisystem manifestations, which range from non-symptomatic lesions of long bone of the appendicular skeleton to multisystem involvement involving the heart, lungs, kidneys and brain. To date, only 10 cases of Erdheim Chester Disease (ECD) with oral manifestations have been reported in the literature. In this report, we present two cases of ECD presenting in the oral cavity and highlight the clinical, radiographic and pathologic features of this disease. We also provide a review of the literature of oral manifestations of ECD. The first patient is a 53 year old female with history of ECD of the skin, bones and subcutaneous soft tissue, who presented to the Dental Service of Memorial Sloan Kettering Cancer Center with multiple carious and periodontally involved teeth that required extraction. Upon extraction of the right maxillary third molar, a round soft tissue lesion with a cystic lumen was noted attached to the mesial wall of the extraction site. Upon submission of the tissue, a diagnosis of histiocytic proliferation with xanthomatous features and Touton giant cells consistent with ECD was rendered. In the second case, a 38 year old male with history of mixed histiocytosis presented to the Dental Service with a 3x3 mm white, nodule on the anterior ventral tip of the tongue. An excisional biopsy was performed revealing atypical histiocytic infiltrate, consistent with ECD. Oral manifestation of ECD is a rare occurrence and few cases have been reported in literature. This disease has a similar histological and radiographic presentation to other histiocytic diseases. Proper histological diagnosis is important for the treatment and prognosis of this disease.

#30

A RARE VARIANT OF SQUAMOUS ODONTOGENIC TUMOR WITH CORTICAL PERFORATION AND HIGH PROLIFERATION INDEX

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Introduction: Squamous odontogenic tumor is a benign and rare tumor of the jaws, with only about 50 cases reported since 1975. Majority are slow growing, rarely symptomatic. Although expansion may be present, cortical perforation and involvement of soft tissue are rare. Case report: A 60 year old female, with firm vestibular and gingival swelling in molar mandibular region, and episodes of throbbing pain. Involved teeth were vital. CT revealed a hypodense lesion, which demonstrated extensive buccal perforation and soft tissue extension but no involvement of inferior alveolar canal, features suggesting an aggressive lesion, possibly malignant. Biopsy showed many islands of squamous epithelium without keratinization but no dysplasia. Basal cells were flat, devoid of peripheral polarization. Matrix was dense and collagenous. Ki67 index was 20%, p53 negative. The microscopic DD included acanthomatous ameloblastoma and primary intra-osseous carcinoma, but these were ruled-out, with a final diagnosis of squamous odontogenic tumor. The adjacent teeth were extracted and conservative surgery performed. Healing was uneventful with no neural deficits and no sign of recurrence at 1 year. Discussion: Two features indicative of unexpected aggressive behavior were observed in the present case: extensive cortical perforation as well as a high proliferation index, which is unusual for benign odontogenic tumors. Weather the present case represents an aggressive variant, or falls within the spectrum of SOT is impossible to determine due to sparse information in the literature.

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#31

MULTICENTRIC PERIPHERAL OSSIFYING FIBROMAS REPORT OF A CASE.
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Objective: The peripheral ossifying fibroma (POF) is a reactive lesion of the gingiva that represents a reaction to a local irritant. It is typically a solitary growth with a predilection for the maxillary anterior gingiva, a slight female gender predominance and a significant recurrence rate of 16%. Our purpose is to report the multcentric occurrence of POFs in a young female. Clinical Presentation: The medical history was significant for cerebral palsy with limited use of the right upper extremity and a seizure disorder treated with lamotrigine. She presented at the age of 7½y with a mass involving the maxillary right incisor area; it recurred 2 months later. At the age of 8½y, she developed a mass involving the maxillary right premolar-canine area. At 10½y, she developed a mass involving the upper right first molar and the mandibular right premolar . By the age of 13y lesions recurred at three sites. Intervention and Outcome: Histologically, all lesions exhibited typical morphology of POF: a cellular fibrous connective tissue stroma with hard tissue formation varying from woven and lamellar bone to cementum-like droplets and dystrophic calcified material. Her mother reported that, by the age of 18, she had undergone over 40 surgical procedures for new primary or recurrent POFs, all involving the right side of her jaws. Conclusion: The occurrence of multicentric POFs is rare; a search of the literature revealed only four case reports. Lesions involved patients over a wide age range from 4y to 49y with a male predilection of 3:1. The possibility of a genetic cause has been speculated, although no genetic testing has been reported. The limitation of the lesions to the right side of the jaws in this case is unexplained.

#32

CORRELATION OF SOX2 EXPRESSION WITH BIOLOGIC BEHAVIOR IN ODONTOGENIC NEOPLASMS WITH AMELOBLASTIC FEATURES
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Objective: SRY related HMG box gene 2 (SOX2) is a transcription factor expressed in embryonic and adult stem cells. SOX2+ dental epithelial stem cells have been shown to give rise to all dental epithelial cell lineages. SOX2 also play a role in tumorigenesis in several tumors. Increased SOX2 expressing cells has been reported in ameloblastic carcinomas than ameloblasmas, which might indicate SOX2 contributes to the pathogenesis of ameloblastic neoplasms. Here we investigated and correlated the expression pattern of SOX2 with biologic behavior in odontogenic neoplasms with ameloblastic features. Methods: Fifteen ameloblastomas (ABs), four ameloblastic fibro-odontomas (AFOs) and six cases of ameloblastic fibroma (AFs) were included. Formalin-fixed paraffin embedded tissue sections were processed for SOX2 immunohistochemical study. Clinical information of tumor size and recurrence were collected and correlated with SOX2 expression. Results: SOX2 expressing cells were found in all cases with distinct patterns. In ABs, majority of positive cells were ameloblast-like cells. In AFOs, positive cells were mainly the cells in odontogenic epithelial strands with round shape, but most of the ameloblast-like cells were negative. Both round cells and ameloblast-like cells were positive in AFs. Low SOX2 expression and low SOX2 expression in ameloblast-like cells were correlated with less aggressive behavior in odontogenic neoplasms with ameloblastic features. Conclusion: SOX2 expressed in odontogenic neoplasms with ameloblastic features with characteristic patterns. Less SOX2 expression, especially in ameloblast-like cells was correlated with less aggressive behavior. It might suggest that SOX2 may be used for predicting the biologic behavior of ameloblastic neoplasms.

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#33

ODONTOGENIC CYSTS WITH BOTRYOID FEATURES: A RETROSPECTIVE CLINICOPATHOLOGICAL REVIEW OF 10 CASES

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Botryoid (multi-compartmentalized) presentation in odontogenic cysts is most commonly associated with cysts in the location of lateral periodontal cyst; however, other multicystic odontogenic lesions present classification challenges. In this study, we present botryoid variants of odontogenic cysts which do not completely fulfill the criteria of established specific odontogenic cyst subtypes. An IRB approved retrospective search of the UF Oral Pathology Biopsy Service archives between 1994 and 2015 for cases with diagnostic codes of "cyst of undetermined origin" was performed. The biopsy reports were queried for cases specifically identified as botryoid variants. Exclusion criteria included cases definitively classified as a specific subtype of odontogenic cyst, or insufficient tissue on the slide for evaluation. Analysis of the 10 cases showed a wide age range from 41 to 82 years, with a mean age of 59.4 years. A male predominance was noted. The posterior mandible was the predominant site. One lesion was associated with an impacted tooth. The maximum clinical size reported was 2.5×3.5 cm. Histologically, all lesions were multicystic and 9 cases displayed a thin non-keratinized uniform lining composed of squamous and cuboidal/columnar epithelium. Other features noted were focal epithelial nodular swirls (60%), microcysts (40%), minimal inflammation (90%), and presence of mucus cells (40%). Because of IRB restrictions of the study, clinical behavior of these cysts could not be determined. At this time it is unclear if these cysts are a distinct clinico-pathologic entity or a developmental stage (forme-fruste) of other variants of odontogenic cysts such as glandular odontogenic cyst. Careful follow up and more longitudinal studies are needed to answer this question.

#34

PRIMORDIAL ODONTOGENIC TUMOR- IMMUNOHISTOCHEMICAL STUDIES OF A RARE ENTITY

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Primordial odontogenic tumor (POT) is a rare, newly described entity that recapitulates early odontogenesis. POT is a neoplasm exhibiting differentiation towards dental ectomesenchyme of a developing tooth germ. It consists of a proliferation of dental papilla-like mesenchymal tissue in a vaguely lobular pattern that is covered by a layer of odontogenic epithelium demonstrating ameloblastic differentiation. Thus far, all reported cases have presented in the posterior mandible as a well-defined radiolucency associated with an unerupted tooth in the first two decades of life. Here we report a case of POT arising in a 15-year-old female. The lesion presented as a well-demarcated radiolucency associated with developing tooth #32, measuring 3.5 × 2.0 cm. Microscopically, the bulk of the tumor consisted of a cellular mass of plump spindle- and stellate-shaped cells in delicately collagenous and myxoid stroma reminiscent of dental papilla. At the periphery, columnar cells with reverse nuclear polarization resembling inner enamel epithelium formed papillary structures and invaginations. Structures that resemble developing teeth were present. Immunohistochemical studies showed strong cytoplasmic positivity for K14 and K19 in the epithelial cells, while BRAF and calretinin were negative. Overall, Ki67 showed < 1% nuclear positivity within the mesenchymal cells. Interestingly, at the areas of mesenchymal condensation, positivity for Ki67 increased to 20%-30%, and odontogenic transcription factors, MSX1, PAX9 and LEF1 were activated in those areas, indicating the initial induction of odontogenic signaling.

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#35

PRIMORDIAL ODONTOGENIC TUMOR: A CASE REPORT

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Objetive: Inform a new case of primordial odontogenic tumor and it´s immunohistochemical profile. Primordial odontogenic tumor is a recently described entity. Its architecture reminisces the early stages of dental histogenesis and it is considered as a odontogenic origin benign neoplasia. Clinical Presentation: We report the case of an 18-year-old male, during the dental check-up revealed an asymptomatic radiolucent area associated with the crown of the lower right third molar. Intervention: Molar extraction was performed. The lesion is composed of ectomesenchymal tissue in a mixod-like solid pattern resembling the dental papilla. The mesenchymal tissue is coated by pre-ameloblastic simple columnar epithelium, with inverted polarization. Immunihistochemical analyses were performed and revealed that the sample was positive for vimentin, cytokeratin A1/3, 14 and 19, also the lesion reveled a low labeling index for ki-67 (3%). Conclusion: The present case report inform a new case of primordial odontogenic tumor and it is the first to report a new immunohistochemical profile what helps to understands the histogenesis.

#36

AMELOBLASTIC DENTINOFIBROSARCOMA

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Objective: To present a case of an odontogenic tumor for which incisional biopsy revealed malignant tumor features (sarcoma) notwithstanding that surgical specimen exhibited characteristics of a benign tumor. Clinical presentation: A 16 year old female patient attended our Oral Medicine Clinic, reporting history of dental extraction (46) and prior histopathological diagnosis of pyogenic granuloma from another institution. Patient exhibited volume increase rated as recurrent by previous examiner. The mass was located at the vestibular mucosa and was of oval shape involving teeth 45-48. It exhibited similar color to adjacent mucosa as well as ulcerated areas, firm consistency and pedunculated base. X-rays revealed a well-defined osteolytic lesion at the right mandibular body. Incisional biopsy was performed and processed histologically. Histopathological diagnosis: Ameleoblastic fibrodentinosarcoma. Intervention: The patient was referred and accepted at the National Institute of Cancerology (INCAN) where she was subjected to a right hemimandibulectomy. A final diagnosis of ameloblastic fibroma was emitted. Outcome: The patient was reconstructed with a graft iliac crest which at 3 months presents an inflammatory reaction. Conclusions: Lesion was identified as odontogenic neoplasm. It exhibited malignant ectomesenchyme and the ability to form hard dental tissue, as well as a transition from benign to anaplastic features resulting in a malignant odontogenic neoplasm originated from its benign counterparts.

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#37

INTRAOSSEOUS MUCOEPIDERMOID CARCINOMA ARISING IN A GLANDULAR ODONTOGENIC CYST: A CASE REPORT

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Objective: Intraosseous mucoepidermoid carcinoma (IMC) is an uncommon malignant salivary gland neoplasm of the gnathic bones.Although rare, it is the most common intraosseous salivary gland neoplasm.IMC is more common in the mandible. While its etiology remains unknown, one theory is that it arises from the pluripotent nature of odontogenic epithelium. Glandular odontogenic cyst (GOC) is a developmental cyst of the gnathic bones. It is a rare lesion that most often affects the mandible. While both lesions exhibit mucous cells and ductal structures, the histopathologic features of IMC and GOC are distinct. This is further highlighted by their distinct immunohistochemical staining profiles. IMCs have been shown to express CK18 and not CK19 while GOCs express CK19 and not CK18. The aim of this report is to present a rare case of IMC arising in a GOC in the anterior mandible in a 79 year-old male. Clinical presentation: We report a case of a 79 year-old male with a multilocular radiolucent lesion of the anterior mandible. The lesion was expansive and crossed the midline. Histologically, the tumor exhibited infiltrating cystic and solid islands of well differentiated epidermoid cells mixed with occasional mucous cells and was indistinguishable from an extragnathic low grade MEC.The prominent GOC areas were lined by squamous epithelium surfaced in areas by columnar cells and demonstrated plaque like thickenings, occasional mucous cells and small glandular spaces. In areas, transition from typical GOC to IMC was evident. Intervention: Patient was referred to head and neck surgery for tumor resection.Conclusion: This case demonstrates that although IHC profiles suggest that the GOC and IMC are two distinct entities, transition of GOC into IMC while rare, can still occur.

#38

HYBRID CENTRAL ODONTOGENIC FIBROMA AND CENTRAL GIANT CELL GRANULOMA LESION

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Objective: Central odontogenic fibroma (COF) with central giant cell granuloma (CGCG) features is an uncommon lesion, the origin and true definition of which remains somewhat controversial. To date, it is unclear whether this lesion represents a true collision between the two entities or if the COF or CGCG induces the proliferation of the other. Only a small amount of cases have been published in the literature to this date. Clinical Presentation: We present a case of a hybrid lesion of COF and CGCG. The lesion presented as a radiolucent lesion of the left mandible that caused bony expansion and paresthesia. Intervention and Outcome: Microscopic examination revealed a florid population of fibrohistiocytic cells and multinucleated giant cells in a densely collagenized fibrous connective matrix. Interspersed among this proliferation, lobular collections of intensely basophilic cells with benign cytologic appearance were observed. Immunohistochemistry staining with MCK, Calretinin, CK5/6, and CD68 separated these islands of odontogenic cells from the surrounding multinucleated giant cells and histiocytes. Conclusions: Careful review of previously reported cases appears to yield a relationship with previous long term history of dental extraction in the area. Management reports in the literature suggests the possibility of a slightly more aggressive lesion than pure central giant cells granuloma, with the possibility of recurrence. Therefore, close clinical follow-up is advised. The possibility of hyperparathyroidism should also be ruled out.

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#39

THE EXPRESSION OF P16INK4A IN ODONTOGENIC CYSTS AND TUMORS

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P16 is a tumor suppressor protein that retards cell cycle progression from G1 to S phase. Prior studies have evaluated p16 expression in odontogenic keratocyst (OKC) and ameloblastoma (AB), but data regarding other odontogenic cysts and tumors has been sparse. With IRB approval, approximately 5 cases each of the following were identified from archives of the UF Oral Pathology Biopsy Service (2005-2015): benign incidental odontogenic rest (IOR), dentigerous cyst (DC), lateral periodontal cyst (LPC), calcifying odontogenic cyst (COC), glandular odontogenic cyst (GOC), OKC, orthokeratinized odontogenic cyst (OOC), adenomatoid odontogenic tumor (AOT), calcifying epithelial odontogenic tumor (CEOT) and AB. All cases were submitted for p16INK4a immunohistochemically testing. The results were scored and evaluated as follows: nuclear and cytoplasmic staining of <5% cells (score 0), 5%-25% (score 1), 25%-50% (score 2), >50% (score 3). The entities with highest rates of moderate to strong staining (score 2-3) were in decreasing order: GOC (100%), LPC (100%), AB (91%), IOR (75%), COC (60%), OKC (40%), OOC (20%), AOT (20%), DC (20%), and CEOT (0%). No significant difference in p16 staining was noted between odontogenic cysts versus tumors (chi-square, p=0.540). When comparing lesions with higher recurrence rates (over 25% as reported in the literature) versus lesions with low recurrence rates (under 25%), higher recurrence correlated to significantly higher p16 positivity (chi-square, p=0.002). This study exhibits an association between increased p16 positivity and odontogenic lesions with higher recurrence rates. Further investigation with a larger sample size along with other clinical factors and p16 expression may help explain the clinical behavior of some odontogenic lesions.

#40

GINGIVAL PRESENTATION OF ODONTOGENIC KERATOCYST (KERATOCYSTIC ODONTOGENIC TUMOR): A CASE SERIES

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INTRODUCTION: Odontogenic keratocyst (OKC) (also known as keratocystic odontogenic tumor) is a developmental odontogenic lesion that is usually intraosseous, though rarely it can occur peripherally in the soft tissue. Gingival presentation of either central or peripheral OKC is rarely reported in the literature and may be misdiagnosed by clinicians. This study presents a series of OKC with unusual gingival clinical presentations. MATERIALS AND METHODS: After IRB approval, the UF College of Dentistry clinical record system was queried retrospectively from 2005-2015 for all patients with a biopsy proven diagnosis of OKC and a documented gingival presentation. Demographics, clinical parameters, histological diagnosis, clinical photos, and radiographs were reviewed for each patient. RESULTS: A total of 13 patients were included. The subjects age ranged between 22-83 years and the mean age was 59 years. Females represented 54% of the cases and 46% were males. The majority of cases (54%) showed a gingival swelling which was distinctly yellow in color. The maxilla represented the most common location (69%), particularly the anterior maxilla, where 6 cases presented. Of the cases where radiographs were available, 80% of the lesions exhibited either a unilocular or multilocular radiolucency. CONCLUSION: OKC, both peripheral and central lesions can produce unusual gingival manifestations. The clinicians should consider OKC in the differential diagnoses especially when confronted with a yellow swelling on the attached maxillary gingiva adjacent to apical or radicular areas.

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#41

UNDIFFERENTIATED ROUND CELL SARCOMA WITH BCOR-CCNB3 TRANSLOCATION IN THE JAW OF A CHILD

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Objective: To present a pediatric case of a rare BCOR-CCNB3 sarcoma of the mandible that phenotypically mimics Ewing sarcoma and to review the clinical, pathologic, molecular and therapeutic features of this tumor. Clinical Presentation: An 18 month old girl presented to general dentist with discomfort involving the left mandible and surrounding soft tissues. The child was prescribed antibiotics and referred to the pediatrician. The followup visit showed increased size of the jaw mass. Referral for evaluation at a children's hospital was made and radiologic evaluation was undertaken. CT scan demonstrated a 4.5 cm homogeneously enhancing mass centered within the left submandibular space with bony destruction of the left mandibular body and extension to the ramus. The radiologist's impression was solid aneurysmal bone cyst, central giant cell granuloma, ameloblastoma and sarcoma. Intervention and Outcome: Biopsy of the mass showed an undifferentiated malignant neoplasm comprised of round to epithelioid cells and spindle cells in myxoid to finely vascular background. Immunohistochemistry did not provide evidence of the cell of origin. Electron microscopy demonstrated features of a mesenchymal tumor without differentiation. Cytogenetic analysis was normal female (46,XX). RT-PCR for Ewing sarcoma, alveolar rhabdomyosarcoma, desmoplastic round cell tumor and synovial sarcoma was negative. RT-PCR for BCOR-CCNB3 was performed and identified the tumor-defining translocation. CCNB3 immunostaining demonstrated nuclear positivity with the tumor cells. Conclusion: When encountering an undifferentiated round cell sarcoma with Ewing sarcoma-like features lacking a tumor-defining EWSR1 translocation or EWSR1 rearrangement by FISH, BCOR3-CCNB3 sarcoma should be a consideration.

#42

CHERUBISM COMBINED WITH OCULOAURICULOVERTEBRAL SPECTRUM: A CASE REPORT

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Objective: To report the first case of a patient with cherubism in association with mild manifestations of oculoauriculovertebral spectrum (OAVS). Clinical Presentation: A 3 year old male with a history of OAVS presented with bilateral maxillary and mandibular swelling. The patient's craniofacial abnormalities included left epibulbar dermoid, mild left sided hemifacial microsomia and overfolding of the superior helix of the left ear. His medical history was significant for resolved ventricular septal defect, Eustachian tube dysfunction, mild hearing loss, otitis media, speech delay and asthma. Initial intraoral examination was significant for multiple missing teeth and expansile masses of the anterior mandible, bilateral posterior mandible and bilateral posterior maxilla. Intervention and Outcome: A maxillofacial CT revealed multiple, bilateral maxillary and mandibular expansile, multilocular radiolucencies. The patient was taken to the operating room for incisional biopsies of the five lesions, which revealed giant cell-rich spindle cell proliferations with focal eosinophilic cuffing around the blood vessels. The clinical, radiographic and histologic findings were highly suggestive of cherubism. Genetic testing was performed, which confirmed mutation of the SH3BP2 gene. The patient was referred to the Genetics department for further counseling and annual follow up with Genetics and Oral and Maxillofacial Surgery. Conclusion: Patients with OAVS have clinical findings that overlap with other syndromes involving structures derived from the first and second pharyngeal arches; however, there have been no previous reports of cherubism presenting in OAVS. Cherubism may be seen in association with other disorders affecting the craniofacial complex, including OAVS.

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#43

PIGMENTED VILLONODULAR SYNOVITIS OF TEMPOROMANDIBULAR JOINT: A CASE REPORT WITH DISCUSSION OF DIFFERENTIAL DIAGNOSIS

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Pigmented villonodular synovitis (PVS) is a locally aggressive proliferative lesion that mostly affects the joints of long bones. It rarely affects the temporomandibular joint (TMJ), and only 73 cases were reported in the literature up to 2015. We report a case of PVS in the right TMJ, initially misdiagnosed as temporomandibular disorder (TMD). A 51-year-old woman was referred to the surgeon with the chief complaint of TMJ pain for 5 years and a past history of an unsuccessful TMD treatment. Extraoral examination revealed discrete preauricular swelling and restricted mandibular range of motion. Panoramic radiograph and computerized tomography showed destruction of the mandibular fossa. Histologically, the tumor was composed by mononuclear cells with prominent eosinophilic cytoplasm and grooved nuclei, osteoclast-like multinucleated cells, brown pigmentation and areas of chondroid metaplasia. The differential diagnosis before immunohistochemical analysis included PVS, chondroblastoma, chondrosarcoma and synovial chondromatosis. Mononuclear cells showed positive immunoreactivity for CD68, negativity for S100 protein, and low Ki-67 labeling index. Morphological and immunohistochemical characteristics leaded to the final diagnosis of PVS. The condyle was also involved, and removed during surgery. The patient received immediate reconstruction and has been followed up over the past 10 months. PVS can present similar symptoms to a TMD, but clinicians must distinguish both lesions by complete examination, imaging and, when necessary, histopathologic evaluation.

#44

EXPRESSION OF MUTS± COMPLEX PROTEINS PREDICTS POOR PROGNOSIS IN ORAL SQUAMOUS CELL CARCINOMA

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Objective: To access the value of hMutS± complex proteins, hMSH2 and hMSH6, in oral squamous cell carcinoma (OSCC) and correlate these findings with clinico-pathological aspects and overall survival rates. Methods: The study comprised 115 cases of OSCC diagnosed between 1996 and 2010. The specimens collected were constructed into tissue microarray blocks. Immunohistochemical staining for hMSH2 and hMSH6 was performed. The slides were subsequently scanned into high-resolution images and nuclear staining of hMSH2 and hMSH6 were analysed using the Nuclear V9 Algorithm. Results: All cases of the present cohort were positive to hMSH2 and hMSH6 and a direct correlation was found between proteins expression ($p<0.05$). The mean of positive cells for hMSH2 and hMSH6 was 64.44±15.21 and 31.46±22.38, respectively. These values were used as cut-offs to determine proteins high expression. Cases with high expression of both proteins simultaneously were classified as presenting high MutS± complex expression. In the multivariate analysis, high expression of the MutS± complex was an independent prognostic factor for poor overall survival (HR: 2.75, $p=0.02$). Conclusion: MutS± complex may constitute a molecular marker for poor prognosis of OSCC.

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#45

MAPK P38 EXPRESSION AND MODULATION OF STAT3 SIGNALING IN ORAL CANCER

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Objectives: p38 protein belongs to Mitogen-activated protein kinase (MAPK) family that link extracellular stimuli with intracellular responses affecting fundamental cell processes. Persistent activation of Stat3 has been associated with cell proliferation, differentiation and apoptosis in oral squamous cell carcinoma (OSCC). This study examined the in vitro effects of p38 modulation on Stat3 signaling and cellular activities in OSCC cells, as well as the possible correlation of p38 expression with tumor grade in OSCC tumors. Methods: Immunostaining of phospho-p38 was performed in 60 OSCC cases including well, moderately and poorly differentiated tumors. Semiquantitative analysis was performed by calculating intensity, percentage and combined scores. Protein expression levels of Stat3 (total, tyrosine and serine phosphorylated), p38 and cyclin D1 were assessed by Western blot in two OSCC cell lines. Pharmacologic inhibition of p38 was achieved by SB2023580. Cell proliferation and viability rates were also evaluated. Results: Intense phospho-p38 immunoexpression was detected in almost all tumors without correlation with differentiation. p38 inhibition did not appear to affect tyrosine or serine phosphorylated Stat3 or cyclin D1 levels in both cell lines. On the other hand, p38 inhibition resulted in mild dose-dependent decreases in cell growth and viability in both cell lines. Conclusion: p38 is highly expressed in OSCC but does not seem to modulate the oncogenic Stat3 pathway or to correlate with tumor grade. However, p38-induced changes in cell proliferation and viability may suggest that p38 functions as a potent OSCC regulator. Understanding the complexity of p38 signaling may guide the development of novel antineoplastic pharmacologic therapies.

#46

MICRORNAS AS PREDICTIVE MARKERS OF ORAL LEUKOPLAKIA THAT PROGRESS TO CANCER

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Objective: Leukoplakia is the most common precursor lesion of oral squamous cell carcinoma (OSCC). Currently, the risk of progression to OSCC is based on the histologic assessment. However, this method fails to identify the subset of microscopically innocuous leukoplakias which transform to OSCC. The aim of this study was to determine if micro RNAs (miR) can be utilized to identify non-dysplastic and low grade oral lesions at risk for progression to OSCC. Methods: A retrospective study of genome-wide miR expression was performed using deep sequencing in formalin fixed paraffin embedded incisional biopsy tissue samples from patients with oral leukoplakic lesions diagnosed with no or low-grade dysplasia and known clinical outcome (10 samples of lesions that progressed to OSCC and 10 samples which did not progress to OSCC). The promising miRs were then evaluated in 80 tissue samples using quantitative real-time PCR (qRT-PCR). Results: Deep sequencing analysis identified four promising miRs- 208b-3p, 204-5p, 129-2-3p and 3065-5p- to be significantly differentially expressed between the two groups. qRT-PCR expression levels were analyzed and using the multiple logistic regression model. We constructed receiver-operating characteristic (ROC) curves. Combining these four miRs as a panel with age and histologic diagnosis had a predictive value with the ROC to be 0.792, sensitivity of 76.9% and specificity of 73.7% ($P < 0.004$) in the identification of non-dysplastic/low grade oral lesions at risk for progression to oral cancer. Conclusion: This model consisting of a four-miR panel combined with patient age and histological diagnosis might be useful in identifying which non-dysplastic and low-grade leukoplakias are at risk for progression to OSCC.

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#47

METALLOPROTEINASES SECRETION AND ADHESION MOLECULES EXPRESSION OF AN IN SITU MODEL OF TUMORIGENESIS UNDER THE INFLUENCE OF EGF

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Objective: The aim of this study was to analyse the in vitro influence of different doses of EGF (5 and 10ng/ml) on MMP 2 secretion and E-cadherin/²-catenin expression in areas which mimic an in situ situation where neoplastic cells from squamous cell carcinoma are surrounded by benign myoepithelial cells from pleomorphic adenoma. Methods: EGF was supplemented at different doses and its effects were evaluated at different periods of the in situ model of cell culture. ELISA was performed to determine MMP 2 levels. The gene expression of E-cadherin and ²-catenin was analysed with q-PCR. Results: The results showed that there was a decrease of E-cadherin and ²-catenin expression when cells were supplemented with 5ng/ml of EGF, especially after 4 days for E-cadherin ($p<0,05$) and 7 and 13 days for ²-catenin ($p<0,05$). ELISA showed that MMP 2 secretion increased when EGF was supplemented with 5 and 10ng/ml, especially in further periods of cell culture (72 and 96 hours) ($p<0,05$). Conclusion: The present findings demonstrated that EGF influences MMP 2 secretion and E-cadherin/²-catenin expression, which may favor the dissolution of the basement membrane and helps maintaining malignant cell clusters, highlighting the importance of these molecules in tumorigenesis process.

#48

NSAID SULINDAC-INDUCED MICRO-RNA ALTERATIONS IN ORAL CANCER CELLS

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Objectives: Abnormal expression of miRNAs in cancer cells is well established; nevertheless, their role in specific cancer types, including oral squamous cell carcinoma (OSCC), needs further elucidation. Several studies have demonstrated NSAID sulindac's antineoplastic properties in OSCC; however, the exact molecular mechanisms are not completely understood. This study evaluated the effects of sulindac on OSCC miRNA profile, attempting to identify specific dysregulated miRNAs and to correlate them with known OSCC-related target genes. Methods: An established OSCC cell line (SCC25) was treated with sulindac or control vector. miRNA profile was evaluated by microarray analysis. All differentially expressed miRNAs with p-value <0.01 were recorded and their known or predicted target genes were determined using 3 different databases. Detected miRNAs and their target genes were analyzed according to their known involvement in oncogenic or oncosuppressive processes with special emphasis on OSCC and sulindac-affected pathways. Results: Comparison of sulindac-treated with control SCC25 cells revealed 116 differentially expressed miRNAs ($p<0.01$). Limiting analysis only to those miRNAs with more than 2-fold differences, a final list of 24 upregulated and 11 downregulated miRNAs in sulindac-treated cells was formed. Interestingly, several differentially expressed miRNAs have been implicated in OSCC and in the regulation of oncogenes, including STAT3 and survivin, well documented mediators of sulindac anticancer properties. Conclusion: Several oncogenic or tumor suppressive miRNAs are significantly affected by sulindac in oral cancer cells suggesting that miRNA regulation mediates sulindac chemopreventive and anticancer effects in OSCC.

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#49

CYTOMORPHOMETRIC PROFILE OF ORAL MUCOSA IN HEALTHY INDIVIDUALS AN ONGOING STUDY.

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Exfoliative cytology is a useful technique to evaluate desquamative cells of oral mucosa. It is well-established for oral cancer screening and some diseases. Although, the normal oral mucosa desquamative cells in healthy individuals were not studied. Objective: to establish a profile of cytomorphometric features of oral mucosa in healthy individuals. Methods: healthy individuals were enrolled in this ongoing study and cells of oral mucosa were collected using exfoliative cytology. Papanicolaou staining was done followed by cytoplasmic and nucleous area measuring (¼m2). Results: In this first step, 50 healthy individuals were enrolled (38 female/12 male) with median age 25y (range: 18-47y). In all, mean cytoplasmic and nucleous área were 2,001.61¼m2 (SD: 44,73) and 47,55¼m2(SD: 6,89), respectively. Male cytoplasmic and nucleous area were 2,116.43¼m2 and 44,15 ¼m2, respectively. Female cytoplasmic and nucleous area were 1,914.96¼m2 and 49,88¼m2, respectively. Conclusion: several studies have focused of cytological features in some specific diseases. This study were designed to study a group of healthy individuals to compare with pathological conditions of oral mucosa. In this ongoing study, mean of cytoplasmic and nuclear área were 2,001.61¼m² and 47,55¼m² concluding that oral keratinocytes show a large cytoplasmic área compared with nuclear área. It would be considered in future comparative studies.

#50

DISCORDANCE IN P16 EXPRESSION AND HIGH RISK HUMAN PAPILLOMAVIRUS DETECTION IN ORAL CAVITY SQUAMOUS CELL CARCINOMA

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Objective: Human papillomavirus (HPV) has been implicated in the carcinogenesis of a subset of head and neck cancers. Several methodologies to identify the presence of HPV in head and neck squamous cell carcinomas (SCC) are being used, including p16 staining as a surrogate marker of HPV infection and DNA in-situ hybridization. Researchers have reported discordant results, most often p16+/ HPV- tumors. The majority of discordant results occur in tumors outside of the oropharynx. These results prompted us to re-evaluate our SCC cases in an effort to identify discordant staining patterns and to gain a better understanding of the utility of p16 staining in the identification of HPV infection in oral SCCs. Method: All cases of oral SCC diagnosed by NYP/Q between 2014-15 were reviewed. Of 246 cases, 23 were identified as being over 75% p16+. Twenty-three p16- cases were chosen based on age, sex, and site matched with the p16+ cases. High risk HPV 16/18 DNA in situ hybridization for the complete viral genome was performed on formalin fixed paraffin embedded blocks of these 46 cases. Each slide was evaluated for intranuclear staining of the tumor cells. Results: A total of 6 cases tested positive for HPV16/18. These cases include 4 p16+ tumors and 2 p16- tumors. Nineteen of 23 p16+ cases were negative for HPV16/18. Conclusion: This study demonstrates the presence of several discordant tumors. While p16 may be a reliable marker in other areas of the body, this study, as well as many others, demonstrates that it is not a reliable surrogate marker for HPV in oral cavity SCC.

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#51

KI-67 EXPRESSION IN DETECTING KOILOCYTIC CHANGES IN HPV-INDUCED LESIONS OF THE ORAL CAVITY

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HPV is known to cause certain characteristic viral cytopathic changes in epithelial cells and presence of these altered epithelial cells koilocytes, in histologic sections. Ki-67, a cell-cycle-associated protein and marker of cell proliferation has been shown to be expressed more profoundly in tissues with HPV-induced viral cytopathic changes. OBJECTIVES: The aim of this pilot study was to evaluate the expression of Ki-67 immunohistochemically in oral squamous papillomas with and without histopathologically detectable HPV-induced changes. METHODS: Ten cases each of H&E-stained squamous papillomas with and without HPV-induced cytopathic changes were selected and Ki-67 expression in the superficial epithelium was evaluated for strong positive nuclear staining. Three cases of oral verruca vulgaris were used as positive controls and three cases of oral fibroepithelial polyp were taken as negative controls. RESULTS: Three of the ten (3/10, 30%) squamous papillomas showing koilocytic changes histopathologically were found to show Ki-67 positivity in the respective locations. This was in contrast to squamous papillomas showing no HPV-induced changes, where none (0/10, 0%) of the cases showed any Ki-67 positivity within the superficial epithelium. Two out three (2/3, 67%) positive controls (verruca vulgaris) and none of the three (0/3, 0%) negative controls (fibroepithelial polyps) showed any positivity for Ki-67 in the upper epithelium. CONCLUSION: Ki-67 staining patterns can be helpful in localizing koilocytic changes in immature proliferating oral HPV-induced lesions that might suggest a higher DNA copy number. A closer follow up of these patients for recurrences may be warranted. Further longitudinal studies are required to predict the clinical course of these lesions.

#52

DIFFERENTIAL CORNULIN EXPRESSION IN ORAL PREMALIGNANT LESIONS

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The assessment of oral mucosal premalignant lesions currently rests on the histopathologic grading of maturational disorganization or dysplasia. Numerous reports have confirmed the subjective nature of assessing surface epithelial dysplasia and the risk of malignant transformation does not necessarily correspond to histopathologic grade. This study was conducted to evaluate biomarkers that might correlate with increasing grades of dysplasia and OSCC. Method: A retrospective case-controlled study was performed using archived biopsy specimens diagnosed as normal oral mucosa (NOM), low-grade (LD) and high-grade (HD) epithelial dysplasia and OSCC with a total of 25 cases per group. Immunohistochemistry was used to examine the expression of cornulin within the tissues and photomicrographs were evaluated with APERIO Imagescope software using the positive pixel counting algorithm. A histo-score (HScore) was calculated based on staining intensity and the percentage of positive cells. Hscore and % staining reliability were assessed using the intraclass correlation coefficient (ICC). Mean differences in Hscores and %staining scores were each analyzed using an analysis of variance and Tukey post hoc procedure. Results: Cornulin was strongly expressed in NOM but was progressively diminished in increasing grades of dysplasia and OSCC. ICCs for Hscores and %stainings were each >0.99. Except for OSCC/HD comparison, all other pairwise comparisons of microscopic diagnoses were significant ($P<0.0001$) for both Hscores and %stainings. Conclusions: Cornulin expression in oral surface epithelium is progressively decreased with increasing grades of dysplasia and OSCC. As a potential biomarker of progression in oral premalignant lesions, longitudinal studies may be warranted.