Neuropilin 2 Receptor is Necessary for Tumorigenesis and Angiogenesis in Oral Squamous Cell Carcinoma

Tuesday, 28th April - 08:30: Poster Session - Poster (Student/Resident) - Abstract ID: 26

Dr . Asma Almazyad (Boston Children's Hospital/Harvard school of Dental Medicine), Dr . Yao Gao (Boston Children's Hospital/Harvard Medical School), Dr . Shokoufeh Shahrabi-Farahani (University of Tennessee), Dr . Daniela Costea (University of Bergen), Dr . Lufei Sui (Boston Children's Hospital/Harvard Medical School), Dr . Allison Gartung (Beth Israel Deaconess Medical Center/Harvard Medical School), Dr . Randy Watnick (Boston Children's Hospital/Harvard Medical School), Dr . Dipak Panigrahy (Beth Israel Deaconess Medical Center/Harvard Medical School), Dr . Rosalyn Adam (Boston Children's Hospital/Harvard Medical School), Dr . Diane Bielenberg (Boston Children's Hospital/Harvard Medical School)

Introduction: Oral squamous cell carcinoma (OSCC) is the most common cancer in the oral cavity with a 5-year survival rate of only 38% in metastatic cases. OSCC dissemination is correlated with enhanced tumor lymphangiogenesis. Neuropilin 2 (NRP2) is an endothelial cell membrane receptor that binds the lymphangiogenic factors, VEGF-C and VEGF-D, in complex with VEGFR3 to stimulate the sprouting of lymphatic vessels during developmental lymphangiogenesis. Recently, our laboratory identified NRP2 as a novel target in OSCC and its associated vasculature in human patient biopsies, human OSCC xenografts, and mouse carcinogenesis models of OSCC. We also found correlation between NRP2 expression and lymphatic vessel density in human OSCC xenografts in immunodeficient mice. Our hypothesis is that NRP2 plays a key role in OSCC tumorigenesis and tumor angiogenesis and lymphangiogesis. **Methods/Results:** To study the role of Nrp2 in the tumor microenvironment, luciferase-labeled, syngeneic Nrp2-expressing mouse OSCC cells were implanted in the tongue of C57Bl/6 wildtype and *Nrp2*-deficient littermate. Although there was no significant difference in tumor incidence (WT=5/5; KO=4/5) or average tumor bioluminescence between the groups after one week of tumor growth *in vivo*, histological examination revealed a 46% and 74% reduction in tumor angiogenesis and lymphangiogenesis, respectively, in *Nrp2*-deficient mice compared to wild- type controls. Next, to characterize the role of Nrp2 in keratinocytes during tumorigenesis, K14-Cre^{ERT};Nrp2-floxed (Nrp2iKO) mice were treated with 4-Hydroxytamoxifen to induce Cre activity to delete the *Nrp2* gene. Nrp2iKO and control (K14-Cre or Nrp2-floxed) mice were given 4-NQO carcinogen in the drinking water for 16 weeks to generate premalignant lesions and OSCC. To date, 86% of control mice have developed tumors while only 38% of Nrp2iKO mice have developed tumors. Histological examination will be compared between the groups. **Conclusion:** Our data draw attention to the essential role of Nrp2 in both carcinoma cells and tumor endothelium in OSCC.

High-grade myoepithelial carcinoma of the palate and maxillary sinus complex: a case report

Tuesday, 28th April - 08:30: Poster Session - Poster (Student/Resident) - Abstract ID: 48

Dr . Patricia Barros (Zucker School of Medicine at Hofstra/Northwell), Dr . Kathleen Schultz (Zucker School of Medicine at Hofstra/Northwell), Dr . Robert Kelsch (Zucker School of Medicine at Hofstra/Northwell), Dr . John Fantasia (Zucker School of Medicine at Hofstra/Northwell)

Introduction: Myoepithelial tumors typically arise from myoepithelial cells of salivary glands, however myoep- ithelial tumors arising in the skin and soft tissues have been increasingly recognized. Myoepithelial carcinomas (MC) have been described in each of these anatomic locations. Myoepithelial carcinoma of the salivary gland is a rare neoplasm composed exclusively of myoepithelial cells. The diagnosis of myoepithelial carcinoma is based on establishing the immunophenotype of the cellular proliferation, degree of cytologic atypia, presence of mitoses and necrosis, and exclusion of mimics. The morphologic heterogeneity further complicates the diagnosis of MC.

Case Findings: A 54-year-old woman presented with a progressive enlargement of the left palate, with imaging demonstrating involvement of adjacent maxillary sinus with extension to the floor of the orbit. Histologically, the lesion was characterized by malignant appearing epithelioid and clear cells compactly arranged in confluent sheets with no evidence of ductal differentiation. The sheets of tumor cells had a somewhat lobular architecture demarcated by thin vascular septa. Nuclear pleomorphism, numerous mitoses, and focal necrosis were present.

Results: Positive immunohistochemical staining of tumor cells with CK7, SOX10, S100, P63, P40, and SMA favored a myoepithelial phenotype. *SMARCB1* (*INI1*) was expressed, excluding *SMARCB1*-deficient sinonasal carcinoma. Negative staining of tumor cells for TTF1, CD20, GFAP, calponin, HMB45, PAX8, CD31, CD34 appear to exclude melanoma, renal cell carcinoma, renal cell like sinonasal carcinoma, thyroid carcinoma, lung carcinoma and PEComa. Outside consultation reported positive P16 but the tumor was negative for high risk HPV, thus excluding HPV related multiphenotypic sinonasal carcinoma. Ki-67 revealed a high proliferative index of 70%.

Conclusions: This study demonstrates the clinical and histopathologic findings of a high-grade myoepithelial carcinoma involving the palate and maxillary sinus complex. Exclusive myoepithelial differentiation (morphologic and immunophenotypic) accompanied by established criteria of malignancy allow for definitive diagnosis of this rare salivary gland tumor.

Intraoral Presentation of Secondary Syphilis: Case Report and Literature Review

Tuesday, 28th April - 08:30: Poster Session - Poster (Student/Resident) - Abstract ID: 29

Dr . Carleigh Canterbury (Columbia University College of Dental Medicine), Dr . Austin Shackelford (Columbia University College of Dental Medicine), Dr . Scott Peters (Columbia University College of Dental Medicine), Dr . Elizabeth Philipone (Columbia University College of Dental Medicine), Dr . Angela Yoon (Columbia University College of Dental Medicine)

Introduction

Syphilis is a well-documented disease caused by infection with the spirochete *Treponema pallidum*. Syphilitic infection progresses through three distinct phases: primary, secondary, and tertiary. Each stage is defined by a unique set of clinical features.

Materials and Methods

A 50-year-old male patient was referred to the Columbia University Oral Pathology clinic for evaluation of painful oral lesions of several months duration. Prior to his presentation, the patient was seen by his primary care physician who ordered routine bloodwork and screening for sexually transmitted infections; all results were unremarkable. On intraoral examination, the patient had lesions involving the lower labial mucosa, right ventral tongue, and the right buccal mucosa. All lesions were similar in appearance: predominantly tan-white with an erythematous border and central ulceration. The lesions ranged from 0.6 to 1 cm in size and were slightly firm to palpation. A representative biopsy was performed of the right buccal mucosal lesion.

Results

On routine histologic examination the specimen consisted of soft tissue covered by benign-appearing stratified squamous epithelium with a dense superficial and perivascular plasma cell infiltrate within the connective tissue. Based on the inflammatory pattern and the patient's clinical presentation, there was an elevated suspicion for spirochete infection. *T. pallidum* stain was performed and highlighted spirochete microbes.

Conclusions:

Based on the microscopic and clinical findings the patient was diagnosed with secondary syphilis. Though the features of syphilis have been well-studied, intraoral manifestations of the disease are rare. Typically, serologic testing is used for diagnosis, however these tests lack 100% sensitivity and specificity resulting in false negatives in a subset of patients. The accuracy of this testing is also known to decrease with repeat infection, as was later discovered to be the case in this patient. Therefore, biopsy and adequate suspicion for infection are necessary for diagnosis in some cases.

Unique histologic findings in oral squamous cell carcinoma treated with chemotherapy and radiation

Tuesday, 28th April - 08:30: Poster Session - Poster (Student/Resident) - Abstract ID: 71

Dr . Kathleen E Higgins (New York Presbyterian Queens), Dr . Jenna Marcinczyk (New York Presbyterian Queens), Dr . Paul Freedman, DDS (New York Presbyterian Queens), Dr . Renee Reich, DDS (New York Presbyterian Queens)

While the mainstay of treatment for squamous cell carcinoma of the oral cavity remains surgical interven- tion, neoadjuvant chemotherapy for local control or advanced disease is becoming more common. Response to chemotherapy cannot be predicted with any degree of certainty. Understanding the histologic changes secondary to chemotherapy is of the utmost importance in order to appropriately assess resolution, persistence, or recurrence of the tumor. Few studies have described the histologic changes following chemotherapy with only a small number involving squamous cell carcinoma of the oral cavity. Here we discuss a unique histologic presentation of squa- mous cell carcinoma of the tongue treated by chemotherapy. The patient, a 66 year old male, declined surgical treatment and instead underwent chemotherapy and radiation. Histologic changes as previously described were noted including acellular keratin with nonviable tumor cells eliciting a foreign body giant cell reaction. Diffuse cal- cification of keratin was present and seems to be a unique finding. None of the typical stromal changes attributed to radiation therapy were present. Immunohistochemical staining with AE1/AE3 was performed to identify viable tumor, but yielded negative results. The production of keratin in our sample even without viable tumor cells made it impossible to rule out an underlying malignant component. This represents an unusual presentation not often encountered in a biopsy service. Understanding the histologic effects of chemotherapy is of paramount importance in guiding continued treatment of patients with oral squamous cell carcinoma.

Double immunohistochemistry of Gli-1 and cytokeratin-17 in ameloblastomas

Tuesday, 28th April - 08:30: Poster Session - Poster (Student/Resident) - Abstract ID: 39

Dr . Pei Hsuan Lu (National Taiwan University Hospital), Dr . Jang-jaer Lee (National Taiwan University Hospital), Dr . Julia Yu Fong Chang (National Taiwan University Hospital)

Objective: Our previous research showed relatively high RNA expression level of Gli1 present in ameloblastomas and frequently coexistent with *BRAF* mutation. Moreover, the mRNA expression level of Gli-1 seems to have positive correlation with acanthomatous change in the tumor nests morphologically. In order to investigate the relation- ship between Gli-1 and cytokeratin, double immunohistochemistry (IHC) of Gli-1 and cytokeratin -17 (CK17) was performed in ameloblastoma cases.

Method: Thirty formalin fixed paraffin embedded (FFPE) ameloblastoma tissue sections with known BRAFV600E status and Gli-1 mRNA expression level were included in the study. One syndrome associated odontogenic kerato-cyst was used as positive control and four radicular cysts and one calcifying odontogenic cyst as negative control. Double IHC of Gli-1 and CK17 was performed in these samples.

Result: All of the 30 FFPE ameloblastoma cases revealed Gli-1 nuclear stain and CK17 cytoplasmic stain with various intensity and various amount of positive cells. Our results showed that Gli-1 expressed mainly in the peripheral ameloblast-like cells and the expression of CK17 was mainly in the central acanthomatous portion of the tumor nests. The expression of Gli-1 and CK17 was mainly not co-localized in the same tumor cells with few exceptional co-localized cells. In addition, the expression of CK17 was always present with Gli-1 positive cells at the periphery, and the Gli-1 negative tumor nests were not express CK17 in central.

Conclusion: Our results showed although Gli-1 mRNA expression was positively correlated with acanthomatous change in the tumor nests morphologically, Gli-1 and CK17 were not co-localized in majority of the cells, which indicated that Gli-1 may indirectly regulate the CK17 expression in ameloblastomas. The possible interpretation is that CK17 expression is a later event, which occurs after activation of SHH pathway.

Intraosseous angiolipoma of the mandible: case report of a rare entity.

Tuesday, 28th April - 08:30: Poster Session - Poster (Student/Resident) - Abstract ID: 57

Dr . Felipe Nor (University of Iowa College of Dentistry, Department of Oral Pathology, Radiology & Medicine, Iowa City, IA.), Dr . Juan Pablo Castro Cuellar (1University of Iowa College of Dentistry, Department of Oral Pathology, Radiology & Medicine, Iowa City, IA.), Dr . Sherry Timmons (1University of Iowa College of Dentistry, Department of Oral Pathology, Radiology & Medicine, Iowa City, IA.), Dr . Wattawan Wongpattaraworakul (1University of Iowa College of Dentistry, Department of Oral Pathology, Radiology & Medicine, Iowa City, IA.), Dr . Scott Steward-Tharp (1University of Iowa College of Dentistry, Department of Oral Pathology, Radiology & Medicine, Iowa City, IA.), Dr . Brinks Austin (AZ Maxillofacial Surgeons, Mesa, AZ.), Dr . John Hellstein (1University of Iowa College of Dentistry, Department of Oral Pathology, Radiology & Medicine, Iowa City, IA.), Dr . Emily Lanzel (University of Iowa College of Dentistry, Department of Oral Pathology, Radiology & Medicine, Iowa City, IA)

Background: Intraosseous angiolipoma is a benign adipocytic lesion that may occur at any bony site, with predilection for the long bones, ribs, vertebrae, and the head and neck region. As the name suggests, the lesion is characterized by the presence of mature adipocytes associated with increased vascularity. Intraosseous angiolipoma of the mandible is an exceedingly rare condition first described by Polte in 1976. Until the present date, only four cases were documented in the English literature. **Case description:** We report a case of a 58 year-old woman presenting with an asymptomatic lesion of the mandible. CBCT examination shows a hypodense area extending from the apical region of the mandibular first molar to the mid portion of the mandibular ramus, right side. Lesion is localized, multilocular, with scalloped borders and partially corticated. There is thinning of the facial and lingual cortices, with focal areas of expansion and bone discontinuity. The cortices of the inferior alveolar canal are not visual- ized in some portions. No root resorption is identified. The clinical impression was ameloblastoma. Enucleation and curettage was performed. Microscopic examination reveals the presence of mature adipocytes surrounded by fibrous connective tissue septa featuring numerous vascular channels. Scattered chronic inflammatory cells including mast cells are seen. No cellular atypia or increased mitotic activity are identified. **Conclusion:** We present the fifth case of an intraosseous angiolipoma involving the mandible. The lesion has been classified as either a hyper- plastic process or a benign neoplasm. The differential diagnosis often includes vascular lesions, benign odontogenic entities, central giant cell granuloma, or low-grade intraosseous malignancies. Due to the scarcity of case reports, the nature of the lesion as well as its preferred treatment method are still to be determined.

Calcifying Epithelial Odontogenic Tumor: A Case Series Spanning 25 years

Tuesday, 28th April - 08:30: Poster Session - Poster (Student/Resident) - Abstract ID: 41

Dr . Lauren Ruddocks (University of Florida), Dr . Sarah Fitzpatrick (University of Florida), Prof . Indraneel Bhattacharyya (University of Florida), Dr . Don Cohen (University of Florida), Dr . Mohammed Islam (University of Florida)

The calcifying epithelial odontogenic tumor (CEOT), also known as the Pindborg tumor, is a rare benign neoplasm which makes up less than 1% of all odontogenic tumors. The purpose of this study is to describe a series of cases of CEOT spanning 25 years. METHODS: With IRB approval, all cases diagnosed as CEOT between 1994 and 2019 were retrieved from the archives of the UF Oral Pathology Biopsy Service. RESULTS: A total of 22 cases were included in the study. Patient age ranged from 8 years to 70 years with an average of 40 years. Females were affected slightly more often (55%, n=12) than males (45%, n=10). The mandible was a more common location (55%, n=12) than the maxilla (45%, n=10) by a small margin. A clinical impression was provided by the clinician in 17 cases, of which the most common (53%, n=9) was that of a cystic lesion (including dentigerous/follicular cyst, periapical/inflammatory cyst, lateral periodontal cyst and odontogenic keratocyst). Radiographs were available for 7 cases and the most common radiographic presentation was a unilocular mixed radiolucent/radiopaque lesion (43%, n=3). Lesion duration was provided in 9 cases and the range was from 3 months to 10 years. The histologic diagnosis of CEOT was made for all cases. One case was believed to represent a recurrent tumor. Also included were the variants “incipient CEOT” (8%, n=2) and “peripheral CEOT” (8%, n=2). One case exhibited features of adenomatoid odontogenic tumor in addition to CEOT. Congo red staining for amyloid was performed in 14 cases, all of which were positive. CONCLUSION: CEOT is an uncommon tumor with a variable presentation and affects patients across a wide age range. Although most cases are intraosseous, the peripheral counterpart is occasionally encountered.

Oncocytic Lesion or an Atypical Epithelioid Vascular Tumor of Unknown Biologic Potential: A Rare Diagnostic Dilemma

Tuesday, 28th April - 08:30: Poster Session - Poster (Student/Resident) - Abstract ID: 92

Dr . Sonia Sanadhya (Department of Oncology & Diagnostic Sciences, University of Maryland, School of Dentistry), Dr . Anthony Chi (Kaiser Permanente Pathology), Dr . Robert Dayse (Private Dental Practise), Dr . Zaid Khoury (Research coordinator, Department of Oncology & Diagnostic Sciences, School of dentistry, University of Maryland, Baltimore), Dr . Manar Elnaggar (Department of Oncology and Diagnostic Sciences, School of Dentistry, University of Maryland and Oral Pathology Department, Alexandria University, Egypt), Dr . Ioana Ghita (University of Maryland, Department of Oncology and Diagnostic Sciences, School of Dentistry, University of Maryland, Baltimore), Prof . John Papadimitriou (University of Maryland, School of Medicine), Dr . Robert Foss (Dermatopathology and Oral Pathology, Johns Hopkins, Baltimore), Prof . Rania Younis (University of Maryland, Department of Oncology & Diagnostic Sciences,School of Dentistry), Prof . John Basile (Department of Oncology & Diagnostic Sciences, School of Dentistry, University of Maryland, Baltimore)

Introduction: Oncocytomas are rare benign tumors found in many different organs, including but not limited to the kidneys, thyroid, parathyroid and salivary glands. Oncocytomas arising in the minor salivary glands are rare. These tumors represent 1 to 2% of all salivary gland neoplasms.

Materials and Methods: We report a case of a 16 year old female patient who was referred to an oral surgeon due to an incidental finding of a soft palatal mass while evaluating for pain in the maxillary area. The soft palatal mass was asymptomatic. The patients past medical history was non-pertinent.

Results: PET scan failed to identify the clinically observed palatal mass. Microscopically, there was a proliferation of large polygonal epithelioid cells forming loosely cohesive, vaguely organoid structures associated with promi- nent dilated and convoluted vascular spaces and demonstrated an infiltrative growth pattern in some areas. These cells showed abundant granular cytoplasm and an eccentrically placed nuclei, including nuclear pseudoinclusions. Mitotic activity or necrosis was not seen. Histologically, the morphology also somewhat mimicked a rhabdoid tumor but rhabdoid tumors are not usually so prominently vascular and are aggressive but in our case Ki-67 proliferation index was scant, besides INI 1 or SMARCB1 expression was not lost on IHC ruling out the possibility of SMARCB1 negative tumors. ERG stain was negative in the tumor cells but delineated the vascular lobules encompassing the polygonal cells. PTAH was diffusely positive in the polygonal epithelioid appearing cells suggestive of a mitochon- drial (oncocytic) component characterizing the cellular proliferation. The tumor cells exhibited a strong positivity for Vimentin and were moderately reactive for Pancytokeratin which necessitated the need to rule out metastatic carcinoma.

Conclusion: Our case showed a propensity towards rhabdoid cytomorphology but without loss of SMARCB1/INI1 protein expression emphasizing the clinical efficacy of INI1 IHC in discerning these tumors in the differential.

Oral metastasis of pleural sarcomatoid mesothelioma, a rare aggressive variant of mesothelioma and a diagnostic challenge.

Tuesday, 28th April - 08:30: Poster Session - Poster (Student/Resident) - Abstract ID: 70

Dr . Sara Sternbach (Zucker School of Medicine at Hofstra/Northwell), Dr . Laurel Henderson (Zucker School of Medicine at Hofstra/Northwell), Dr . Bhoomi Mehrotra (The Cancer Center at St Francis Hospital), Dr . John Fantasia (Zucker School of Medicine at Hofstra/Northwell)

Introduction: Malignant mesothelioma is a rare neoplasm that most commonly develops after exposure to asbestos and arises from the serosal cells of the pleura or rarely peritoneum. Various histological subtypes have been recognized: epithelioid, sarcomatoid, biphasic-epithelioid, and biphasic-sarcomatoid, with the sarcomatoid variant being a less common, but more aggressive variant. Numerous genetic alterations have been identified in the development and progression of malignant mesothelioma, most notably mutations in tumor suppressor genes, *neurofibromatosis type 2 (NF2), BRCA1-associated protein-1 (BAP1),*and *cyclin-dependent kinase inhibitor 2A/alternative reading frame (CDKN2A/ARF)*. Mesothelioma metastasis to the oral cavity is infrequent, with only nineteen cases reported in the literature. Soft tissue involvement of the oral cavity has been reported in the tongue, followed by the mandibu- lar gingiva, and alveolar mucosa. Prognosis for malignant mesothelioma is poor as it is typically unresponsive to conventional chemotherapeutic agents. New targeted therapies are currently in ongoing clinical trials.

Case Findings: An 81-year-old male, undergoing treatment for malignant pleural mesothelioma and with a history of asbestos exposure, presented for evaluation of a raised, necrotic mass on the left posterior mandibular buccal and lingual gingiva. Panoramic radiograph revealed extensive bone loss. The histopathology was that of a sarco- matoid neoplasm. Immunohistochemistry demonstrated positive staining for WT1, cyclin D1, and P53, supporting the diagnosis of metastatic malignant mesothelioma, sarcomatoid variant. Other stains that help to define mesothelioma such as CK5/6, calretinin, and D2-40 were negative. Despite equivocal immunostaining results, the diagnosis was further supported by comprehensive genomic analysis with identification of mutated *NF2*and *BAP1*tumor suppressor genes.

Conclusion: The diagnosis of malignant pleural mesothelioma relies on morphology supplemented with immunohistochemistry. The diagnosis is challenging, especially so for the sarcomatoid variant, with immunohistochemical staining profiles often being inconsistent. The current case demonstrates the utility of comprehensive genomic analysis in firmly establishing the diagnosis.

THREE CASES OF AMELOBLASTIC CARCINOMA WITH REVIEW OF CLINICAL, RADIOGRAPHIC AND HISTOPATHOLOGIC FEATURES

Tuesday, 28th April - 08:30: Poster Session - Poster (Student/Resident) - Abstract ID: 47

Dr . Shankar Venkat (University of Florida), Dr . Sarah Fitzpatrick (University of Florida), Dr . Don Cohen (University of Florida), Dr . Mohammed Islam (University of Florida), Prof . Indraneel Bhattacharyya (University of Florida)

Introduction: Ameloblastic carcinoma (AC) is a rare malignant primary epithelial odontogenic tumor demonstrating histologic features of ameloblastoma with signs of overt malignancy. In this case series, we describe the clinical, radiographic and histologic features of 3 cases of AC. **Methods:** Three cases of AC were identified from the University of Florida Oral Pathology Biopsy archives. Clinical data and original slides were retrospectively analyzed. Immunohistochemical (IHC) stains for cytokeratin 19 (CK19) was performed on all cases to demonstrate odontogenic epithelial origin. **Results:** All cases of AC in this series occurred in elderly males, with two presenting in the mandible and one in maxilla. Radiographically, all presented as ill-defined radiolucencies and demonstrated cortical expansion, consistent with features of malignancy. The first case involved a 60-year-old male with an erosive soft tissue mass along the anterior mandible between teeth #27 and #28 and corresponding radiolucent lesion on films. The second case occurred in a 75-year-old male presenting with gingival swelling and an expansile radiolucent lesion in the right maxilla, extending from tooth #3 to #7. The third case was seen in a 75-year-old male displaying a large osteolytic lesion of the mandibular ramus surrounded by a bulky soft tissue mass extending deep into the right lateral and medial pterygoid muscles. Histologically, all cases revealed large sheets of interconnecting islands and strands of malignant cells displaying peripheral palisading, reverse nuclear polarity and apical vacuolization. In addition, the malignant islands exhibited central necrosis and neoplastic cells showed significant hyperchromatism with nuclear pleomorphism. IHC staining with CK19 were strongly positive in two cases and focally positive in one case. **Conclusion:** This case series documents 3 cases of a rare odontogenic malignancy and highlights the importance of including this entity in a differential diagnosis of aggressive lesions of the jaws, especially in older patients.

Bilateral Squamous Odontogenic Tumor: Presentation of 2 Cases and a Review of the Literature

Tuesday, 28th April - 08:30: Poster Session - Poster (Student/Resident) - Abstract ID: 73

Dr . Chelsea Wilson (New York Presbyterian Queens), Dr . Stanley Kerpel (New York Presbyterian Queens), Dr . Renee Reich, DDS (New York Presbyterian Queens), Dr . Paul Freedman, DDS (New York Presbyterian Queens)

Squamous odontogenic tumor (SOT)is a rare odontogenic lesion first described in 1975. It has been classified by the WHO as an epithelial odontogenic tumor. While that classification has been widely accepted, some considered the lesion to be hamartomatous in nature. Others have disputed the diagnosis of many of the cases in the literature and claim they have been confused with other tumors with similar histologic features such as desmoplastic ameloblastomas, acanthomatous ameloblastoma1 and "SOT-like" islands in the walls of odontogenic cysts. SOTs are usually found in the fourth decade and are typically solitary, intraosseous lesions. However, peripheral lesions and multifocal cases of SOT have been described. Multifocal cases differ from the more common solitary presentation in that they usually occur in younger patients and are found more commonly in African American males. As of 2017, 8 cases of multifocal SOT have been reported, only 1 of which was reported as exclusively bilateral maxillary lesions and 6 of which had bilateral lesions as well as additional foci of tumor. Here we present two additional cases of bilateral SOTs of the mandible in young adult males. CD56 staining, which has been reported to highlight the basal cell layer in ameloblastomas, was performed on one case to further differentiate the SOT from an acanthomatous ameloblastoma. Due to the nonspecific radiographic features of SOT and their ability to mimic bilateral dentigerous cysts or other neoplastic processes, clinicians should have an increased awareness of the entity and submit tissue associated with impacted teeth.

Primary intraosseous squamous cell carcinoma arising in odontogenic cysts: A report of five cases and a review of the literature

Tuesday, 28th April - 08:30: Poster Session - Poster (Student/Resident) - Abstract ID: 24

Dr . Rachelle Wolk (New York Presbyterian Queens), Dr . Paul Freedman, DDS (New York Presbyterian Queens), Dr . Renee Reich, DDS (New York Presbyterian Queens)

Primary intraosseous carcinoma (PIOC) is rare entity with an estimated incidence of 0.01-0.02% of all oral cancer. To date, 133 PIOC cases have been reported with most occurring in the setting of periapical/residual cysts. Distinc- tion from carcinomas arising from the oral or antral mucosa may be difficult, especially when the cortical plates have been destroyed. Therefore, signs of oral ulceration preclude the diagnosis of PIOC. Identification of a benign cystic structure exhibiting transition to a squamous cell carcinoma may be of help in establishing the diagnosis and etiology of the tumor. The aim of our study was to evaluate the cases of only primary intraosseous squamous cell carcinomas arising in odontogenic cysts diagnosed in the Oral Pathology Laboratory at New York Presbyterian Queens between 1995-2019 with the goal of adding valuable information to the literature for this uncommon en- tity. Five cases of PIOC were identified. For each case the histology, demographics, radiographic descriptions and radiographs when possible were reviewed. In all cases, transition from a cystic structure to infiltrating carcinoma was identified. In no case did the overlying surface mucosa exhibit dysplastic changes or transition to carcinoma. Four cases occurred in the maxilla and one in the mandible. The average age of patients in this study was 67.6 years with a range of 37 to 81. Three patients were males and two were female. Three cases presented as ill-defined radiolucencies and one was described as a cystic expansion. Two PIOCs arose in the setting of a periapical cyst, one in the setting of a residual cyst and one in the setting of a dentigerous cyst. Two cases had associated bone loss. While uncommon, the possibility of carcinoma arising in what appears clinically to be a cyst, supports the need to submit all tissue for microscopic examination.

A rare primary localized extranodal histiocytic sarcoma of oral mucosa: a case report

Tuesday, 28th April - 08:30: Poster Session - Poster (Student/Resident) - Abstract ID: 78

Dr . Wattawan Wongpattaraworakul (1University of Iowa College of Dentistry, Department of Oral Pathology, Radiology & Medicine, Iowa City, IA.), Dr . Felipe Nor (1University of Iowa College of Dentistry, Department of Oral Pathology, Radiology & Medicine, Iowa City, IA.), Dr . Scott Steward-Tharp (1University of Iowa College of Dentistry, Department of Oral Pathology, Radiology & Medicine, Iowa City, IA.), Dr . Sherry Timmons (1University of Iowa College of Dentistry, Department of Oral Pathology, Radiology & Medicine, Iowa City, IA.), Dr . Emily Lanzel (University of Iowa College of Dentistry, Department of Oral Pathology, Radiology & Medicine, Iowa City, IA), Dr . Sarah Rinehart (Periodontal Associates of Eastern Iowa, Iowa City, IA), Dr . Grerk Sutamtewagul (University of Iowa Carver College of Medicine, Department of Internal Medicine, Iowa City, IA), Dr . John Hellstein (1University of Iowa College of Dentistry, Department of Oral Pathology, Radiology & Medicine, Iowa City, IA.), Dr . Nidhi Handoo (1University of Iowa College of Dentistry, Department of Oral Pathology, Radiology & Medicine, Iowa City, IA.)

Background: Histiocytic sarcoma is a rare hematopoietic malignancy which typically involves extranodal sites, mainly of the gastrointestinal tract. Of the small number of reported cases in the head and neck region, only one case was localized to the oral cavity. The disease may present as a solitary lesion or disseminated process secondary to other hematopoietic malignancies. Histopathologically, the tumors can be mistaken for other lymphoprolifera- tive disorders. Immunohistochemistry shows tumor cells expressing one or more of the histiocytic markers CD163, CD68, or lysozyme. Surgery with or without chemotherapy or radiotherapy are the mainstays of treatment. Even though histiocytic sarcoma has clinically aggressive behavior with poor response to therapy, studies show that a subset of the patients with localized disease and small tumor size have more favorable outcome with surgery alone. We present a case with localized extranodal histiocytic sarcoma of oral mucosa. **Case Description:** A 31-year-old, fe- male with one-month duration of a 10 x 8 x 2 mm smooth-surfaced, well circumscribed, firm soft tissue enlargement at buccal vestibule of #11/12. Biopsy shows a diffuse population of pleomorphic cells with atypical mitoses and fine granular cytoplasm within fibrocollagenous connective tissue. Immunohistochemical studies demonstrated tumor cells positive to CD163, CD68, CD45, CD43, CD4, muramidase, SOX10, S100, NSE and vimentin with a diagnosis of his- tiocytic sarcoma. Surgical excision with uninvolved margins was performed. The diagnosis of histiocytic sarcoma was confirmed with hematopathology consultation. There was no evidence of tumor recurrence after 3 months fol- low up. **Conclusion:** To the best of our knowledge, this is the second case of primary localized extranodal histiocytic sarcoma of oral cavity. Surgery alone was the treatment modality for our case. However, due to the rarity/limited number of reported cases, treatment outcomes of a localized disease is limited. The treatment protocol may become more evident as newer studies emerge.

Clinical Accuracy of Differential Diagnoses for Submitted Biopsy Cases

Tuesday, 28th April - 08:30: Poster Session - Poster (Student/Resident) - Abstract ID: 14

Mr . Carter Bruett (University of Utah), Dr . Bryan Trump (University of Utah)

Introduction: Data gathered from the biopsy database located at the University of Utah was used to analyze the accuracy of submitting clinicians' respective differential diagnoses. The main objective was to identify deficiencies in provider education to help
guide presenters' selection of topics for future lectures to the dental professional community.
Materials and Methods: The database was analyzed by cross-sectional comparison of 7,463 submitted samples. Each submitted "Clinical History" section (which prompts clinicians to submit a differential) was evaluated in comparison to the final histopathological result. Certain categories of submissions were excluded, such as lower lip minor salivary gland biopsies to evaluate for Sjogren's Syndrome. Results were compiled with keyword searches.
Result:39% of submitted sample results were included within the differential diagnosis and 14% were similar in type to the final diagnosis. 7% were inaccurately predicted, 10% provided no information at all and 30% provided only descriptive information with no entities named. The most common misidentified lesion was the fibroma. Qualitative analysis revealed that when inaccuracies occurred it was often due to failure to identify key predicting information, such as identifying a fibroma after lower lip trauma had created a fluctuant mass.
Conclusions: With over half of submitted differentials having a high level of accuracy, clinicians are demonstrating success at providing differential diagnoses. The low percentage of inaccuracies reflects unexpected final diagnoses, severity biases, or failure to identify key predictors. The 30% of clinicians who only provided descriptive infor- mation, and the 10% who provided no additional information, represent a significant portion of clinicians where additional training could be targeted. The formation of a differential diagnosis is helpful in correlation with clin- ical appearance and for informing patients of possible biopsy diagnoses. Future lectures could focus more on the formation of reasonable differential diagnoses.

Oral Contact Stomatitis to Electronic Cigarette Components: A Case Report

Tuesday, 28th April - 08:30: Poster Session - Poster (Student/Resident) - Abstract ID: 31

Dr . Khadijah Bagazi (University of Florida), Dr . Mohammed Islam (University of Florida), Dr . Don Cohen (University of Florida), Dr . Sarah Fitzpatrick (University of Florida), Dr . Leslie Nevarez (Tampa,Bradenton area of Florida), Prof . Indraneel Bhattacharyya (University of Florida)

Oral contact stomatitis (OCS) may be caused by oral hygiene products, common foods, and topical agents. OCS is often a diagnostic challenge to health care providers. The purpose of this report is to present a rare case of reversible OCS related to components of electronic cigarettes (EC) not previously reported in the literature. A 55-year-old female presented with a chief complaint of painful burning sensation of her tongue and gums. She had a history of cigarette smoking and had switched to EC for the last 2.5 years with a recent switch to a different brand of vaping solution. Clinical examination revealed generalized multiple non-removable white plaques with an erythematous background. OCS was suspected and the patient immediately stopped using EC. Unfortunately, she reverted to traditional cigarette use. At the 1-week follow-up all lesions had resolved and the patient was asymptomatic. OCS can present with a wide range of clinical presentations including sloughing of mucosa, ulcerations, edema, and erythroplakia. Treatment typically involves stoppage of causative agent and topical steroids. Reports in the literature on the possible toxicity of the chemicals in E-liquids are inconsistent. Several reports have indicated that nicotine plays a major role in the adverse reactions and the solvents alone may not be the cause. However, other studies have shown the reverse to be true. It is crucial for clinicians to correctly diagnose OCS in order to avoid unneces- sary diagnostic procedures and therapies. Due to the rapid increase in use of E-cigarettes, an increased incidence of unusual oral lesions such as this may be seen. Clinicians should be aware of the potential of this adverse oral effect of E-cigarette use.

SUCCESSFUL LONG-TERM MANAGEMENT OF PROLIFERATIVE VERRUCOUS LEUKOPLAKIA: A CASE REPORT

Tuesday, 28th April - 08:30: Poster Session - Poster (Student/Resident) - Abstract ID: 56

Mr . Jonathan Beckerman (UIC College of Dentistry, Chicago, IL), Dr . Harvey Wigdor (Dept. of Oral Medicine and Diagnostic Sciences, UIC College of Dentistry, Chicago, IL), Dr . Nicholas Callahan (Dept. of Oral and Maxillofacial Surgery, UIC College of Dentistry, Chicago, IL), Dr . Joel Epstein (City of Hope Comprehensive Cancer Center Duarte CA and Cedars-Sinai Medical Center, Los Angeles Ca)

Introduction: Proliferative verrucous leukoplakia (PVL) is a rare condition that is difficult to diagnose, difficult to treat, and often progresses to malignancy. We present a case of PVL followed over twelve years that was managed both surgically and medically, impacting this patient's dental treatment options and overall quality of life. **Objectives:** Retinoic acid can help manage PVL when part of a comprehensive treatment plan, including selec- tive surgical excisions in the form of biopsies, because it may inhibit epithelial proliferation and keratinization. New research has shown that conservative management and routine close follow-up by a "multidisciplinary team" may have similar outcomes with less morbidity compared to routine surgical excisions, but uncertainty about recur- rence restricts treatment options. **Findings:** This case illustrates successful management of a very difficult condition to treat. Despite a tendency to recur and evolve, this patient's PVL remained relatively stable by diligent topical retinoid application, selective biopsy, and strict follow-up. Although the patient lost teeth due to a yet unknown mechanism, the PVL did not transform to VC or OSCC. Living with PVL has had a profound effect on this patient's oral functional capacity and quality of life. The patient was not advised to replace missing teeth with implants, and dental treatment was prolonged due to uncertainty about the condition. **Significance for Practice:** The purpose of this case report is to present a case of PVL, managed conservatively, and suggest that clinicians should not rush to surgery. Still, this case illustrates that quality of life is affected as treatment options for missing teeth are limited.

Giant cyst of the incisive papilla – Largest ever reported

Tuesday, 28th April - 08:30: Poster Session - Poster - Abstract ID: 30

Dr . Jerry Bouquet (West Virginia University School of Dentistry), Dr . William Black (West Virginia University School of Dentistry), Dr . Byron Black (West Virginia University School of Dentistry)

Introduction: Fewer than 5 cysts of the incisive (nasopalatine) papilla have been reported, none has alter underlying bone and none was larger than <0.6 cm. **Objective:** To report the largest incisive papilla cyst, with partial bony involvement. **Clinical/radiographic findings:** A 47 year old woman presented with a 1.8 cm., tender, sessile midline mass posterior to her central incisors; it was moderately firm, not bony hard. Periapical radiographs revealed a rounded, well-demarcated radiolucency of the maxillary midline, with a sclerotic rimming of much of its border. Cone beam CT imaging confirmed the well-demarcated radiolucency and further demonstrated a thick soft tissue lining around an apparently fluid-filled, much darker radiolucent center. The lesion lacked a palatal cortex and had pushed upwards, expanding inferior portions of the overlying nasopalatine duct, providing a shape similar to an inverted chalice. CBCT clearly showed a direct connection with the duct, which extended to the nasal sinuses and showed thickened sinus membranes at each superior opening, suggesting sinusitis. **Microscopic findings:**At surgery the mass was cystic, filled with a clear fluid. Microscopically, the cystic space was lined by an epithelium that combined the appearance of squamous, cuboidal and respiratory epithelium. This covered a dense fibrous stroma with focal areas of chronic inflammatory cells and congestion. The stroma also contained a large artery, several large veins, a large nerve, and a mucous gland. There was no bone separating the cyst from the palatal mucosa. **Follow-up.** During a follow-up visit at 10 days post-surgery, the area was healing well and there was no paresthesia of the anterior palate. **Conclusion**: We report the largest cyst of the incisive papillae, 1.8 cm. in diameter. It had expanded into the overlying nasopalatine duct.

Focal Osteoporotic Marrow Defects – Variant of Chronic Ischemic Bone Disease? Clinicopathology Review of 596 Cases

Tuesday, 28th April - 08:30: Poster Session - Poster (Regular) - Abstract ID: 25

Dr . Jerry Bouquot (West Virginia University School of Dentistry), Dr . Hiba Qari (West Virginia University School of Dentistry), Dr . Michael Rohrer (University of Minnesota School of Dentistry)

Background: Focal Osteoporotic Marrow Defects (FOMD) presents as a localized, asymptomatic, poorly-demarcated radiolucency, considered by some as a variant of normal marrow architecture. The cause of this lesion is unknown but recent examples of ischemia-related regional osteoporosis in long bones suggest an anoxic or ischemic origin. **Objective:** To determine the proportion of FOMD lesions showing histopathologic evidence of ischemic marrow disease. **Methods:** 596 intramedullary tissue samples of microscopically diagnosed FOMD were reviewed for features of regional ischemic osteoporosis. Microscopic criteria characteristic for early ischemic changes in long bones were used to compare with findings in jawbone biopsy samples of FOMD. Clinical features and patient demographics were also analyzed. **Results:** 74% of 581 patients were female and the average age at diagnosis was 49 years. Lesions were evenly distributed between the jaws and 79% were in the retromolar/third molar area. 92% were in edentulous bone, and 77% were in old extraction sites; 3% of cases were bilateral and 30% were tender or painful. The average lesion size was 1.2 cm (range: 0.5-2.8 cm.) and none showed cortical expansion. 76% of FOMD lesions were comprised primarily of fatty marrow, and 88% of the total showed microscopic features of ischemic marrow damage consistent with those found in regional osteoporosis of the long bones; 9% demonstrated intravascular thrombi. Differences were found between hematopoietic and fatty FOMD lesions. **Conclusions:** The FOMD lesion appears to be the jawbone variant of regional osteoporosis of long bones, i.e. is an ischemic phenomenon perpetuated by compromised marrow blood flow. There are 2 subtypes of FOMD: the fatty marrow type and the less common hematopoietic marrow type; fatty lesions are much more likely to be in the maxilla, to be in males, and to be associated with pain.

Secondary Syphilis Occurring on the Tongue: Report of a Case

Tuesday, 28th April - 08:30: Poster Session - Poster (Student/Resident) - Abstract ID: 61

Ms . Shan Shan Cen (Touro College of Dental Medicine at New York Medical College), Dr . Steven Cho (Private Practice, Touro College of Dental Medicine at New York Medical College), Dr . John Fantasia (Zucker School of Medicine at Hofstra/Northwell), Dr . Aaron Yancoskie (Private Practice, Touro College of Dental Medicine at New York Medical College)

Objective: According to the Centers for Disease Control the rate of syphilis has steadily increased nearly every year since 2001. Tertiary syphilis is associated with serious complications that can be avoided by early diagnosis and treatment. Although primary and secondary syphilis typically involve the genitals, the oral cavity may be the initial site of disease. Given the recent increase in incidence, it is critical to recognize this disease to aid in prevention of life-threatening complications. Here, we report a case of oral syphilis and present the clinical, histopathological and immunohistochemical features.

Clinical Presentation: A 21-year-old female presented to an oral and maxillofacial pathologist for evaluation of a lesion on the tongue of one-month duration. Her medical diagnoses included bipolar disorder and genital herpes. Her social history included smoking and cocaine abuse. Upon examination, a mildly erythematous elevated plaque of the posterior dorsal tongue measuring 2.0 x 1.5 cm was identified.

Intervention and Outcome: An incisional biopsy was performed under intravenous sedation by an oral and maxillofacial surgeon. Microscopic review showed oral mucosa demonstrating papillary hyperparakeratosis, neutrophilic microabscesses and a moderate-to-intense chronic inflammatory infiltrate possessing an abundance of plasma cells in the underlying connective tissues. These features were suspicious for a diagnosis of secondary syphilis. Tissue was sent to the Mayo Clinic for *Treponema pallidum* study by immunohistochemistry. Review of the stained slides showed numerous spirochetal organisms throughout the epithelium, confirming the diagnosis. The patient's primary care provider was contacted to initiate therapy. The NYC Department of Health and Mental Hygiene was notified of this diagnosis fulfilling mandatory reporting requirements.

Conclusion: The rate of syphilis diagnosis is on the rise. Presentation in the oral cavity, while rare, is important for oral healthcare providers to be familiar with as early diagnosis and treatment are likely to prevent serious complications.

Primary Intraosseous Rhabdomyosarcoma: Rare Subtype Involving Mandible with Unique Translocation

Tuesday, 28th April - 08:30: Poster Session - Poster (Regular) - Abstract ID: 43

Dr . Catherine Flaitz (University of Colorado School of Dental Medicine), Dr . John Hicks (Texas Children's Hospital and Baylor College of Medicine)

Introduction: A rare subtype of spindled and epithelioid rhabdomyosarcoma (RMS) with unique gene rearrangements (FUS-TFCP2 or EWSR1-TFCP2) was first described in 2018 (J Pathol 245:29–40). These aggressive tumors occur in a wide age range with a female predilection and develop almost exclusively within a variety of bone sites, in particular, the craniofacial bones. Majority of affected individuals died of disease within 15 months. FUS-TFCP2 is the predominant translocation associated with this RMS subtype. This case report describes a rare mandibular sarcoma in a child with a complex, oncologic, medical history.

Clinical Presentation and Pathology Findings: 15-year-old female experienced acute lymphoblastic leukemia at 11 months of age, with oncologic resolution. At age 7, anthracycline-induced cardiomyopathy was diagnosed, necessitating heart transplantation at age 9. Subsequently, EBV-associated diffuse large cell lymphoma involving the retropharynx was diagnosed at age 10, with successful oncologic management. At age 15, a left mandibular enlargement was noted. Fine needle core biopsy identified a spindled and epithelioid sarcoma, diffusely positive for nuclear MyoD1 with rare cytoplasmic desmin and rare nuclear myogenin. ALK and S100 immunostaining were positive in a certain tumor cell population. The diagnosis of spindled and epithelioid RMS was made. Conventional cytogenetics demonstrated a complex hyperdiploid tumor (78XXX with numerous derivative aberrations). Next-generation sequencing identified a FUS-TFCP2 translocation, which appears to be tumor-defining with this primary intrabony RMS subtype. Oncologic sarcoma management was performed with a marginal response to chemotherapy and low-dose radiation therapy. Left mandible resection was performed with negative bone and soft tissue margins (3.5cm tumor size). **Conclusion:** Primary intraosseous RMS is a rare and aggressive subtype, which has tumor-defining translocations and expresses MyoD1 to a greater extent than Desmin or Myogenin. Of interest, is the overexpression of ALK, which may provide a target for ALK inhibitors.

Profiling of Oral Cells Morphology by means of a novel Label-Free Method of Polarization Diffraction Imaging

Tuesday, 28th April - 08:30: Poster Session - Poster (Regular) - Abstract ID: 22

Dr . Andres Flores-Hidalgo (East Carolina University), Dr . Ricardo Padilla (University of North Carolina at Chapel Hill), Dr . Li Yang (East Carolina University), Dr . Xin-Hua Hu (East Carolina University), Dr . David Paquette (East Carolina University)

Currently, all oral leukoplakias, per gold standard, should undergo microscopic examination for diagnosis, which is an invasive procedure, and many patients are resistant to it due to cost, fear, or aversion to pain. We plan to develop a non-invasive assay, by using polarization diffraction imaging flow cytometry (p-DIFC) which is a technique that renders a three-dimensional model of single cells. That acquires a cross-polarized diffraction image pair (p-DI) of the coherent light scattered by a single cell with high image contrast excited by a linearly polarized laser beam. This method of single-cell assay enables extraction of cell morphology related information from the diffraction patterns embedded in the p-DI pair for each individual cell. In addition, the team has developed an optical model of cells based on confocal imaging to simulate the coherent light scattering process of a cell and convert the spatial distribution of scattered light into calculated p-DI pairs.

Objectives

We aim to develop a protocol for acquiring oral mucosal cells for confocal imaging and establishing their individual three-dimensional (3D) morphologic profiles in the form of a preliminary database. In Phase 2, we will establish correlations between diffraction patterns from calculated p-DI data and the morphologic features revealed by microscopy.

Methods

We are collecting and quantifying individual cells from oral mucosa, in order to set a quantitative 3D morphologic single-cell parameter by confocal microscopy, for modeling study of diffraction patterns. Phase 2 of the study will involve single-cell analysis using p-DIFC for identification of early malignant changes in cytological sampling of mucosal lesions suspicious for malignancy.

Conclusions

The results of this ongoing investigation will lay the foundation for future non-invasive, label-free detection of precancerous cells during intraoral examination, by investigating the profiling of cells harvested from patients in our institutions.

Demographic, tumor and treatment factors of oral/oropharyngeal cancer in Alberta, Canada

Tuesday, 28th April - 08:30: Poster Session - Poster (Regular) - Abstract ID: 77

Dr . Seema Ganatra (University of Alberta), Dr . Salima Asifali Sawani (University of Alberta), Dr . Parvaneh Badri (University of Alberta), Dr . Mohammadreza Pakseresht (University of Alberta), Dr . Maryam Amin (University of Alberta)

Introduction: Oral and oropharyngeal cancers have high morbidity and mortality worldwide. Distinct differ- ences exist between oropharyngeal and oral cancers; the former increasing in incidence and the later decreas- ing. The aim of this study was to determine demographic profiles, tumor characteristics and treatment factors of oral/oropharyngeal cancer in the adult population of Alberta, Canada.

Methods/materials: Information regarding oral/oropharyngeal cancer incidence in Alberta residents older than 18 years from 2005-2017 was extracted from the Alberta Cancer Registry database. Demographic factors included gender, diagnosis age, diagnosis date, age at death, vital status, death cause and geographic zone diagnosis. Tumor factors included location/site, morphology, histologic grade and clinical stage. Treatment modality was examined. Descriptive statistics was done using SPSS.

Results:4069 oral/oropharyngeal cancer cases were identified. The mean (SD) age at diagnosis was 62.1 (13.3) years. 53.5% of diagnoses were made between 46-65 years of age, and 68.5% of patients were male. The number of reported oral cancer cases increased from 231 in 2005 to 398 in 2017. Most common cancer sites were tonsil (20%), tongue (19.1%), and base of tongue (15.8%). 78.6% of tumors were squamous cell carcinoma and variants and 39.1% of tumors were moderately-differentiated. 55.7% of cases were diagnosed at stage IV. Most common initial treatments were surgery (63.1%) and radiation (57.6%). As of 2017, 54.3% of patients in the study were reported alive. The main oral cancer-related deaths occurred in patients with tongue (13.9%), base of tongue (9.2%) and tonsil (9.1%) cancers.

Conclusions: There was a higher incidence of oral cancer in older males. Diagnoses were made at advanced stages. Higher mortality was associated with locations/sites that are difficult to examine. These findings are similar to other jurisdictions and support the need for early detection through screening examinations, increased awareness of oral/oropharyngeal cancer and earlier access to care.

Congenital epidermoid cyst associated with mucus retention cyst in Wharton's duct of a newborn. Report of an unusual case.

Tuesday, 28th April - 08:30: Poster Session - Poster (Regular) - Abstract ID: 67

Dr . Maria Georgaki (PhD Candidate, Department of Oral Medicine and Pathology, School of Dentistry, National and Kapodistrian University of Athens (NKUA), Greece), Dr . Argyrios Daskalopoulos (PhD Candidate, Department of Oral Medicine and Pathology, School of Dentistry, National and Kapodistrian University of Athens (NKUA), Greece), Mr . Efstathios Pettas (Senior Undergraduate Student, School of Dentistry, National and Kapodistrian University of Athens (NKUA), Greece), Dr . Vasileios Ionas Theofilou (Postgraduate Student, Department of Oral Medicine and Pathology, School of Dentistry, National and Kapodistrian University of Athens (NKUA),Greece), Dr . Lampros Gkoutzanis (Assistant Professor, Department of Oral and Maxillofacial Surgery, School of Dentistry, National and Kapodistrian University of Athens (NKUA), Greece), Prof . Nikolaos G. Nikitakis (Professor and Chair, Department of Oral Medicine and Pathology, School of Dentistry, National and Kapodistrian University of Athens (NKUA), Greece)

Objectives: The differential diagnosis of cystic swellings involving the floor of the mouth includes various lesions, such as dermoid, epidermoid or lymphoepithelial cysts and ranulas. However, coexistence of such conditions, possibly with a cause-and-effect relationship, is rare. Herein, we present a case of congenital epidermoid cyst in association with mucus retention cyst in the floor of mouth of a newborn.

Findings: A 6 months old female infant was referred for evaluation of a "pearly" yellowish swelling in the floor of mouth, first noticed by her pediatrician just after birth. Slow enlargement of the lesion was reported. Clinical examination revealed a yellowish nodule with overlying prominent vasculature in close association with the orifice of the left submandibular duct, posteriorly transitioning to a diffuse bluish cystic swelling of the left floor of mouth. With a provisional diagnosis of a developmental cyst and/or ranula, a surgical excision was performed under general anesthesia. Intraoperatively, an anterior round lesion was identified, extending posteriorly towards the submandibular gland as an elongated cylindrical cystic dilatation. Histopathologic examination revealed a well-defined cystic cavity in the anterior aspect lined by keratinized stratified squamous epithelium with compact keratin deposition inside the lumen. The cystic lesion showed continuity with a dilated salivary duct aligned by cylindrical, cuboidal or pseudostratified epithelium. A final diagnosis of epidermoid cyst intimately associated with a mucus retention cyst (ranula) of the submandibular duct was rendered.

Conclusions: The coexistence of two cystic lesions in the floor of the mouth with features of epidermoid and mucus retention cyst, respectively, is rare and its pathogenesis intriguing, especially in a newborn. Theoretically, the two lesions may be coincidental, although a more reasonable explanation is that a congenital epidermoid cyst, incidentally developing adjacent to the submandibular duct orifice, caused obstruction and secondary mucus retention phenomenon.

Pediatric ghost cell lesions of the head and neck: a pilot case series

Tuesday, 28th April - 08:30: Poster Session - Poster (Student/Resident) - Abstract ID: 34

Dr . Mark Hochberg (Ohio State University), Dr . John Kalmar (Ohio State University)

AAOMP Abstract 2020

Pediatric ghost cell lesions of the head and neck: a pilot case series

Hochberg M, Kalmar J

Division of Oral and Maxillofacial Pathology and Radiology, The Ohio State University, Columbus, OH

Ghost cell change describes specific epithelial alterations including, cell swelling, prominent eosinophilic cytoplasm and, loss of nuclear stainability. Whether the result of coagulative necrosis or aberrant keratinization, these “ghost” or “shadow” cells appear prone to dystrophic calcification. Ghost cells have only been described in a limited number of pathologic conditions, both odontogenic and non-odontogenic. We present three lesions of the head and neck recently encountered at the Nationwide Children’s Hospital that shared the common histologic feature of ghost cells. The first case involved a thirteen-year-old girl with a hard, circumscribed scalp mass. Excisional biopsy led to a diagnosis of pilomatricoma. In the second case, a twelve-year-old girl with a history of craniopharyngioma presented with signs and symptoms suspicious for recurrence. This was confirmed following a second resective surgical procedure. The third case involved a seven-year-old girl with painless facial asymmetry secondary to an expansile radiolucent lesion of left maxilla that filled the sinus and displaced several teeth. Histopathologically, the lesion was found to be calcifying odontogenic cyst.

Although uncommon, three lesions containing characteristic ghost cell features were encountered over a short period at the Nationwide Children’s Hospital. Given the relative lack of data regarding these lesions in the pediatric population, an additional retrospective analysis would appear warranted.

Oral Cytomegalovirus Infection in a Systemic Lupus Erythematosus Patient: Case Report and Review of Literature

Tuesday, 28th April - 08:30: Poster Session - Poster (Student/Resident) - Abstract ID: 19

Dr . Ronald Faram (New York Presbyterian Queens), Dr . Shraddha Kamat, DDS (New York Presbyterian Queens), Dr . Adam Abel, DMD, MD (New York Presbyterian Queens), Dr . Paul Freedman, DDS (New York Presbyterian Queens), Dr . Renee Reich, DDS (New York Presbyterian Queens)

Systemic manifestations of cytomegalovirus (CMV) are varied, and include pneumonitis, hepatitis and retinitis. Oral ulcers due to CMV infection are rare lesions, most often seen in immunocompromised hosts, typically HIV positive patients, transplant recipients, patients on chemotherapy or patients receiving immunosuppressive therapy for associated conditions. Despite a suspected relationship between childhood onset of systemic lupus erythematosus (SLE) and CMV infection, oral CMV ulcerations have not previously been reported in patients being treated for SLE. Here, we present a case of widespread CMV infected oral ulcers in an 18-year-old woman with SLE. The lack of unique distinguishing clinical features of CMV related oral ulcers often leads to delayed diagnosis. Because CMV oral ulcers are often associated with an unfavorable prognosis, early detection is imperative to prevent disseminated disease and increased morbidity. We hope that this case, by describing the manifestations of oral CMV in a patient with SLE, will lead to heightened levels of suspicion and more timely diagnosis and treatment.

HPV-Related Multiphenotypic Sinonasal Carcinoma with Unusual Palisading Spindle Cell Morphology

Tuesday, 28th April - 08:30: Poster Session - Poster (Regular) - Abstract ID: 21

Dr . Yen Chen Kevin Ko (Memorial Sloan Kettering Cancer Center), Dr . Bin Xu (Memorial Sloan Kettering Cancer Center)

Human papilloma virus (HPV)-related Multiphenotypic Sinonasal carcinoma (HMSC), formerly known as HPV-related Carcinoma with Adenoid Cystic Carcinoma-Like Features, is a newly described entity occurring exclusively in the sinonasal tract. It is a type of HPV-related sinonasal carcinoma displaying salivary carcinoma-like morphology (especially adenoid cystic carcinoma). It has strong association with high-risk HPV (particularly HPV type 33). Many histologic patterns have been reported in the literature, including solid, cribriform, and tubular growth patterns, myoepithelial and plasmacytoid pattern, spindle and sarcomatoid pattern, and glomeruloid growth pattern. Here, we report a case of HMSC with unusual palisading spindle cell morphology.

The patient is a 53-year-old woman with a history of nasal obstruction and drainage. A CT scan showed a soft tissue mass in the right nasal cavity with significant deviation of the septum. The patient subsequently received a right sided anterior ethmoidectomy and maxillary antrostomy. Intraoperatively, a fleshy polypoid mass was noted to occlude the nasal airway and push the right middle turbinate and septum.

Histologic sections show multiple architectural patterns within the tumor, including cribriform architecture ad- mixed with hyaline globules, tubular/glandular area with biphasic inner ductal and outer myoepithelial elements, small nests with true keratinization and keratin pearls, and palisading spindle cell morphology. Scattered tumor cells show marked nuclear enlargement and nuclear pleomorphism. Multifocal tumor necrosis and increased mi- totic index are identified. Immunohistochemically, the tumor is positive for p63 (diffuse), p40 (diffuse), CAM5.2 (patchy), cytokeratin AE1/AE3, SMA, calponin, S100 and p16 (strong and diffuse, nuclear and cytoplasmic). RNA *in situ* hybridization for high risk HPV is positive.

We report a HMSC with unusual spindle cell morphology. This case highlights the morphological spectrum that can be seen in this rare tumor and the importance for clinicians to be familiar with this entity.

Langerhans Cell Histiocytosis Occurring in the Wall of a Dentigerous Cyst: Presentation of a Case

Tuesday, 28th April - 08:30: Poster Session - Poster (Student/Resident) - Abstract ID: 82

Ms . Ghazaleh Peiravani (Touro College of Dental Medicine), Ms . Jordana Rothenberg (Touro College of Dental Medicine), Dr . Heather Zanon (Westchester Medical Center), Dr . Anthony Alessi (Westchester Medical Center), Dr . Aaron Yancoskie (Touro College of Dental Medicine)

Objective: The dentigerous cyst (DC) is the most common developmental odontogenic cyst. It most frequently occurs in association with impacted mandibular third molars. The typical radiographic presentation comprises a well-defined unliocluar radiolucency extending from the cemento-enamel junction. Yet, it is well-documented in the literature that a variety of other pathologic entities may demonstrate overlapping clinical and radiographic features. Here we present a case of Langerhans cell histiocytosis (LCH) occurring in the wall of a DC. LCH is charac- terized by infiltrates of CD1a positive cells. Disease may involve a diverse array of tissues and can be solitary or mul- tifocal. LCH occurs across the age range, yet is most commonly diagnosed in the pediatric population. BRAFV600E mutations have been identified in approximately 50% of cases tested. Here we describe the clinical, radiographic, histopathologic, immunohistochemical (IHC) and molecular findings of a case of LCH occurring in the wall of a DC.

Clinical Presentation: An otherwise healthy 12-year-old male presented for evaluation of an impacted right maxillary canine. Imaging demonstrated a 2.9 x 2.0 cm well-circumscribed unliocluar radiolucency associated with tooth #6.

Intervention and Outcome: The impacted canine was extracted and the cyst enucleated under general anesthesia. Microscopic review showed a cystic lining of non-keratinized stratified squamous epithelium with an inflamed fibrovascular connective tissue wall. The inflammatory infiltrate included plasma cells, lymphocytes, numerous eosinophils, and histiocytoid cells. The histiocytoid cells stained positive for S-100 and CD1a IHC confirming the diagnosis of LCH. Analysis for BRAFV600E was negative. The patient was referred to pediatric hematology and oncology for management.

Conclusion: This case of LCH occurring in the wall of a DC highlights the importance of submitting all excised tissue for histopathological review. It also underscores the need for careful attention in examining the microscopic features of inflammatory infiltrates present in the walls of cystic entities.

Oral hairy leukoplakia in an immunocompetent patient treated with topical steroids for oral lichen planus

Tuesday, 28th April - 08:30: Poster Session - Poster (Student/Resident) - Abstract ID: 85

Mr . Efstathios Pettas (Senior Undergraduate Student, School of Dentistry, National and Kapodistrian University of Athens (NKUA), Greece), Dr . Argyrios Daskalopoulos (PhD Candidate, Department of Oral Medicine and Pathology, School of Dentistry, National and Kapodistrian University of Athens (NKUA), Greece), Ms . Nikoleta Papageorgiou (Undergraduate Student, School of Dentistry, National and Kapodistrian University of Athens (NKUA), Greece), Dr . Vasileios Ionas Theofilou (Postgraduate Student, Department of Oral Medicine and Pathology, School of Dentistry, National and Kapodistrian University of Athens (NKUA), Greece), Prof . Nikolaos G. Nikitakis (Professor and Chair, Department of Oral Medicine and Pathology, School of Dentistry, National and Kapodistrian University of Athens (NKUA), Greece)

Objectives: Oral Hairy Leukoplakia (OHL) is an Epstein-Barr Virus (EBV)-related lesion of the oral mucosa, most commonly affecting immunocompromised patients. Although HIV-infection appears to be the most frequent predisposing factor, OHL cases have been reported in patients with other causes of systemic or even local immunosuppression. Herein, we present a case of OHL arising in an HIV-negative immunocompetent patient treated with topical steroids for Oral Lichen Planus (OLP).

Findings: A 62 years old male patient with biopsy-proven OLP presented for his regular follow-up. He was under treatment with topical steroids: fluocinonide (oral gel) and dexamethazone (oral solution). Clinical examination revealed a white plaque of irregular surface involving the right lateral border of the tongue, which had not been noticed in the previous follow up appointment, 2 months ago. With a differential diagnosis of morsicatio linguarum, hypertrophic OLP and leukoplakia, an incisional biopsy was performed. Histopathologic examination revealed hyperkeratotic squamous epithelium with surface corrugations and the presence of "balloon cells" in the upper spinous layer, some of which exhibited nuclear beading in high power magnification. Immunohistochemical examination for EBV-LMP1 and in-situ hybridization for EBV were positive, establishing a diagnosis of OHL. Although no symptoms or signs of immunosuppression/HIV infection were present, the patient underwent blood examinations, including an HIV ELISA antibody test, which were within normal limits. In the absence of any indications of systemic causes, a diagnosis of OHL associated with local immunosuppression due to long-term use of topical corticosteroids was rendered.

Conclusions: OHL may be associated with different types of immunosuppression. In recent years, few cases of OHL developing in patients treated with topical steroids have been reported, the majority of which were linked to inhalers for pulmonary diseases. Topical steroid-induced immunosuppression in patients with oral mucocutaneous diseases should be considered as a possible, albeit unusual, cause of OHL.

Effect of JUUL e-Liquid Extract on Oral Cell Survival and Function

Tuesday, 28th April - 08:30: Poster Session - Poster (Student/Resident) - Abstract ID: 12

Mr . Spencer Roark (Louisiana State University School of Dentistry), Ms . Victoria Boraski (Louisiana State University School of Dentistry), Dr . Kitrina Cordell (Louisiana State University School of Dentistry), Dr . Molly Rosebush (Louisiana State University School of Dentistry), Dr . Thomas Lallier (Louisiana State University School of Dentistry)

Introduction: Electronic vaping devices deliver nicotine in a manner similar to conventional cigarettes. While cigarette smoking has been proven to increase periodontal disease and oropharyngeal cancer risks, extensive stud- ies on the health effects of vaping have yet to be published. A JUUL consists of a device containing a removable cartridge, or JUULpod, that holds an e-liquid of various flavors and nicotine concentrations. Although electronic cigarette use is viewed as a healthy alternative to conventional cigarette smoking, the long-term health effects of vaping are not known at this time. Therefore, this study is to determine the effects of JUUL e-liquid concentrates on the survival and function of oral fibroblasts and osteoblasts.

Materials and Methods: Cells were treated for 1, 6, and 24 hours with various percentages (2%, 4%, 6%, 8%, 10%) of JUULpod e-liquid containing 59 mg/ml nicotine in a mix of propylene glycol, glycerine, benzoic acid, and fla- voring agents. The flavors tested included mint, Virginia tobacco, mango, and creme. Cell survival was assessed fluorometrically using Calcein-AM. Alkaline phosphatase activity was measured by enzymatic assay. Osteoblast transcript expression was evaluated using polymerase chain reaction and gel electrophoresis.

Results: Concentrations of JUULpod e-liquid up to 25% extract did not significantly reduce cell survival for all fla- vors. Concentrations of JUULpod e-liquid up to 25% extract drastically reduced alkaline phosphatase activity in osteoblasts. In general, no detectable changes in osteoblast transcript were noted following exposure to JUUL extracts. However, mint flavored extracts selectively reduced expressions of BMP4, TGFbeta1, osteoprotegerin, periostin, as well as collagens III, V, and VIII.

Conclusions: Based on these results, JUULpod e-liquid did not reduce the survival of osteoblasts or oral fibrob- lasts. However, JUULpod e-liquid does significantly reduce alkaline phosphatase activity of osteoblasts. This study supports the likelihood that electronic cigarettes would be less harmful to oral cells than conventional cigarettes.

Optimizing the Autopsy Experience for the Oral and Maxillofacial Pathology Trainee

Tuesday, 28th April - 08:30: Poster Session - Poster (Student/Resident) - Abstract ID: 68

Dr . Stephen Roth (Zucker School of Medicine at Hofstra/Northwell), Dr . Colby Haines (Zucker School of Medicine at Hofstra/Northwell), Dr . Alex Williamson (Zucker School of Medicine at Hofstra/Northwell), Dr . Aaron Yancoskie (Touro College of Dental Medicine), Dr . John Fantasia (Zucker School of Medicine at Hofstra/Northwell)

Introduction: Autopsy pathology is part of the required curriculum of oral and maxillofacial pathology training programs. The requirements have evolved partly because of declining autopsy rates and in part driven by more emphasis on subspecialty training. An autopsy rotation can be quite variable depending on differences in the rotation venue, a medical examiner versus academic medical center experience. The time from postmortem macroscopic examination to microscopic examination and final autopsy report is longer than the traditional time allotted for the rotation, compromising the learning experience. An alternative approach that augments the traditional time at the autopsy table is to select archival cases that emphasize the pathology associated with the leading natural causes of death. Such case selection will give a comprehensive experience as to the cause of death and how various organ systems are affected.

Methods: Cases were selected from the archives of Northwell Health, Department of Pathology and Laboratory Medicine, Division of Autopsy Pathology. The autopsy service performs approximately 300 autopsies per year and is a centralized service provided to the constituent hospitals of the health system. Ten cases were selected based on various pathologies for which either macroscopic findings, microscopic findings, specialty examination, or molecular analyses provided the basis of the final autopsy report. Autopsies related to atherosclerotic cardiovascular disease, hypertensive cardiovascular disease, diabetes mellitus, deep vein thrombosis/pulmonary embolism, dementia, sudden cardiac death, hereditary disease, obesity, neoplasia, and infection, were selected. Medical history and pertinent macroscopic, microscopic, specialty examination and molecular findings for the various pathologies listed above were digitized to form an eAutopsy.

Conclusion: This approach to autopsy training gives the resident a comprehensive focus on the leading causes of death. This teaching module may also have an added benefit teaching general pathology in the dental school curriculum be it a traditional lecture or interactive web-based program.

Linear IgA Bullous Dermatosis adult variant: A report of a rare case and review of literature

Tuesday, 28th April - 08:30: Poster Session - Poster (Student/Resident) - Abstract ID: 91

Dr . Devaki Sundararajan (Boston University Goldman School of Dental Medicine), Mr . Hitesh Vij (Boston University Goldman School of Dental Medicine), Dr . Vikki Noonan (Boston University Goldman School of Dental Medicine)

Linear IgA bullous dermatosis is a rare autoimmune disorder of the skin and mucous membrane triggered by immunoglobulin A autoantibodies directed against several different antigens in the basement membrane zone. This condition can affect both children and adults. Based on the age at the time of diagnosis it is categorized into two subtypes, Linear IgA bullous dermatosis of childhood and Linear IgA bullous dermatosis of the adult. The affected patients can present with lesions on the skin and/or mucous membrane. The adult form mainly affects the skin of the trunk, limbs, face and oral mucosa and can be associated with ulcerative colitis. Intraorally it can present as desquamative gingivitis, erosions or ulcers and intact vesicles or bullae. The palate, palatine arches, buccal mucosa and gingiva are the most frequently affected intraoral sites. As the lesion mimics mucous membrane pemphigoid both clinically and microscopically it may present a diagnostic challenge. Immunofluorescence studies are necessary for a definitive diagnosis of this condition. We report a case of Linear IgA bullous dermatosis in a 90 year old male patient who presented with desquamative gingivitis involving both the anterior maxillary and mandibular facial gingiva. Further investigation and physical examination by a dermatologist revealed cutaneous and extrao- ral mucosal lesions. The clinical presentation, histopathological features, immunofluorescence findings along with a review of the literature of this rare condition will be presented.

Is “Localized juvenile spongiotic gingival hyperplasia” an appropriate term? Insights based on a case series and literature review.

Tuesday, 28th April - 08:30: Poster Session - Poster (Student/Resident) - Abstract ID: 86

Dr . Vasileios Ionas Theofilou (Postgraduate Student, Department of Oral Medicine and Pathology, School of Dentistry, National and Kapodistrian University of Athens (NKUA), Greece), Dr . Argyrios Daskalopoulos (PhD Candidate, Department of Oral Medicine and Pathology, School of Dentistry, National and Kapodistrian University of Athens (NKUA), Greece), Mr . Efstathios Pettas (Senior Undergraduate Student, School of Dentistry, National and Kapodistrian University of Athens (NKUA), Greece), Prof . Nikolaos G. Nikitakis (Professor and Chair, Department of Oral Medicine and Pathology, School of Dentistry, National and Kapodistrian University of Athens (NKUA), Greece)

Introduction: Localized juvenile spongiotic gingival hyperplasia (LJSGH) is an entity presenting as reddish gingival enlargements microscopically exhibiting spongiotic non-keratinized epithelium with inflammatory exocytosis. To this date, various terms have been proposed, but, arguably, none of them has accurately described the clinicopatho- logic features and origin of these lesions. Additionally, insufficient emphasis has been given on their microscopic characteristics.

Materials and methods: Lesions with a diagnosis of LJSGH, established by histopathologic examination and CK19 immunoreactivity (in equivocal cases), were retrieved. The patients’ demographic and clinical characteristics were collected. Additionally, microscopic features were assessed including the extent of spongiotic changes and epithelial surface morphology (flat vs. papillary). A review of the pertinent English language literature was conducted.

Results: Eighteen patients with a total of 21 biopsied lesions were identified, exhibiting a mean age of 19.2 years (range: 8-57) and a slight female predilection (10:8). The most common site of involvement was the facial maxillary gingiva (17 lesions), while 4 patients exhibited multifocal lesions. Microscopically, 16 lesions showed prominent epithelial spongiosis, while flat morphology was more common than papillary (13:8). The literature review disclosed 203 cases including those presented herein. A mean age of 14.7 years was recorded, with almost equal gender distribution (103:100, F:M), while the anterior maxilla was affected more commonly (>80% of lesions). Eighteen patients displayed multifocal lesions.

Conclusions: Since almost 10% of LJSGHs are multifocal, the word “localized” could be omitted. Additionally, pa- tients over 50 may be involved, hence the term “juvenile” may be also misleading. “Hyperplasia”, a histopathologic term referring to increases in number of cells, does not always characterize these lesions that could occasionally display epithelial atrophy (especially the flat subtype). Finally, the entity’s odontogenic origin, as supported by the resemblance to the junctional epithelium and the immunophenotypic features, may need to be emphasized.

Central xanthoma of the mandible in a 12-year-old boy

Tuesday, 28th April - 08:30: Poster Session - Poster - Abstract ID: 83

Dr . Victoria Woo (Texas A&M University, College of Dentistry), Dr . Moni Ahmadian (University of Nevada, Las Vegas, School of Dental Medicine), Dr . Miran Rhee Anagnost (LMC Pathology/Aurora Diagnostics), Dr . Paras Patel (Texas A&M University COllege of Dentistry), Dr . Brendan Johnson (Nevada Oral & Facial Surgery)

Xanthomas are benign proliferations of lipid-laden macrophages that most often affect the skin and extensor tendons. The majority of lesions occur in the setting of systemic conditions associated with altered lipid metabolism, such as hyperlipidemia and diabetes mellitus. Intraosseous xanthomas are uncommon and can affect both the axial and appendicular skeleton. We describe a 12-year-old boy who presented with a large unilocular radiolucency of the right posterior mandible pericoronal to an impacted third molar. Intraoral examination revealed no mucosal abnormalities or evidence of cortical expansion. The lesion was completely enucleated and microscopic examination showed a proliferation of large cells with abundant foamy to eosinophilic, granular cytoplasm, varying in distribution from loose sheets to compact clusters with minimal intervening fibrous connective tissue. The lesional cells demonstrated strong and diffuse reactivity with CD68, favoring a non-Langerhans cell histiocytic process and supporting a diagnosis of central xanthoma. Subsequent medical evaluation was negative for lipid abnormalities, endocrinopathies, and lipidoses. Gnathic xanthomas are exceedingly rare with less than 40 cases reported to date. Lesions have a strong predilection for the mandible and most frequently present as unilocular radiolucencies with no significant symptoms. Diagnosis can be challenging due to their nonspecific clinicoradiographic presentation and microscopic overlap with other histiocytic processes. Treatment consists of thorough curettage and recurrences are uncommon, especially in the absence of systemic manifestations. Although rare, recognition of this entity is of clinical interest as lesions that precede the diagnosis of a dyslipidemia or lipidosis may serve as a harbinger of un- derlying disease.

METASTATIC LEIOMYOSARCOMA OF THE PALATAL GINGIVA MASQUERADING AS A PYOGENIC GRANULOMA

Tuesday, 28th April - 08:30: Poster Session - Poster (Student/Resident) - Abstract ID: 84

Dr . Paras Patel (Texas A&M University COllege of Dentistry), Dr . Madhu Shrestha (Texas A&M University COllege of Dentistry), Dr . Shelby Nelson (Custom Periodontics), Dr . Victoria Woo (Texas A&M University COllege of Dentistry)

Leiomyosarcoma (LMS) is a smooth muscle neoplasm, accounting for 7% of soft-tissue and 1-4% of head-neck sarcomas. Oral-LMS is extremely uncommon and may represent primary or metastatic disease. We describe a 46-year- old female with a medical history of "stomach cancer" who presented with a palatal mass. Upon further inquiry, it was discovered that the patient had been diagnosed with high-grade LMS of the retroperitoneum six years prior, which had been treated with radical resection and right nephrectomy followed by post-operative radiation and adjuvant chemotherapy. She subsequently developed liver metastasis requiring modification of her chemotherapy. However, she had elected to discontinue treatment one year prior to the presentation of the oral lesion.

A biopsy of the palatal mass revealed a malignant spindle-cell proliferation expanding the overlying epithelium, with brisk mitotic activity and atypical mitosis, nuclear pleomorphism, and focal areas of tumor necrosis, raising the concern for LMS. Immunohistochemical (IHC) stains for SMA were strongly positive while negative for DOG1 and CD 117. Based on the history and supportive histopathological and IHC findings, a diagnosis of metastatic LMS of the palate was given.

Oral metastases of LMS are exceedingly rare and aggressive lesions that arise mostly in females in their sixth-decade. Literature review shows that metastases to the tongue, gingiva, lip, and buccal mucosa are typically associated with primary uterine tumors, while metastasis to the mandibular gingiva is documented frequently with non-uterine primaries. Clinically, lesions can present as a nonspecific painful mass. Microscopic diagnosis is often challenging due to significant overlap with other spindle-cell neoplasms, requiring careful correlation with medical history, physical examination, and ancillary studies. We herein report a rare case of a retroperitoneal LMS that metastasized to the palate. A literature review of metastatic oral-LMS and retrospective institutional analysis of oral metastases will also be presented.