young males as expansile lesions of the mandible with associated well defined radiolucencies and perforation of the cortical plates. Both tumors demonstrated spindle cells arranged in a storiform pattern. Case 1 had a more collagenized stroma and demonstrated an abundance of secondary elements while Case 2 exhibited a myxoid background, prominent perivascular hyalinization and scattered secondary elements. Immunohistochemical studies revealed Factor XIIIa and CD68 positivity in both tumors. Case 2 also demonstrated positivity for CD10. S100 and SMA were negative in both lesions. The recognition of the appropriate histologic and immunologic features of this common soft tissue tumor will aid in its diagnosis in an uncommon location.

**ADENOID AMELOBLASTOMA WITH DENTINOID: A CASE REPORT.** *PROF. HYE-JUNG YOON. DEPT. OF ORAL PATHOLOGY, SCHOOL OF DENTISTRY, SEOUL NATIONAL UNIVERSITY*

Adenoid ameloblastoma with dentinoid (AAD) has been considered a very rare variant of ameloblastoma showing histopathologic features similar to adenomatoid odontogenic tumor (AOT) along with apparent dentinoid formation. Since the first use of this term by Brannon in 1994, however, there has been no official recognition of this entity as shown in both the 3rd and 4th edition of WHO classification of odontogenic tumors in 2005 and 2017. Because less than 20 cases of AAD have been reported to date, clinical behavior and optimal treatment modalities of AAD are still uncertain. Here we present an additional case of AAD with recurrence 10 years after the initial treatment. A 39-year-old male was referred to department of oral and maxillofacial surgery, complaining of pain and mobility of teeth in the right posterior maxilla. Panoramic radiograph revealed a uniocular radiolucency with relatively well-defined borders extending from the second premolar to the second molar. Root resorptions of the affected teeth were found. Mass excision was performed and the diagnosis of epithelial odontogenic ghost cell tumor was made. Ten years later, he presented with the recurrent lesion at the same area. CT view showed destructive enhancing mass suspicious for malignancy at the right posterior maxilla. Radically resected mass was diagnosed as adenoid ameloblastoma with dentinoid/osteodentin as it showed lots of duct-like structures with ameloblastoma-like features along with numerous dentinoid formation, but there were no ghost cells.

**CANDIDIASIS IN THE PEDIATRIC POPULATION: A CASE REPORT AND REVIEW OF BEST PRACTICES.** *DR. ASHLEY CLARK, DR. NGOZI NWIZU, DR. BRETT CHIQUET. UNIVERSITY OF TEXAS HEALTH SCIENCE CENTER AT HOUSTON*

Candidiasis is a common infection in humans and one of the more common oral alterations in the pediatric population. The incidence of candidiasis in this population is highest in neonates, with 8.7% experiencing the infection. Children up to 12 months of age experience candidiasis at a frequency of 2-5%, while the pediatric population in general has an incidence of 0.8-3.7%. The most easily recognizable form is pseudomembranous candidiasis, which presents as non-adherent, white, plaque-like lesions. Erythematous candidiasis has a variety of presentations; lesions are typically asymptomatic and chronic. Treatment options vary based on the child's preference of medication type (oral suspension, lozenges, or tablet). We present a case of cheilocandidiasis in a 20 month old patient and review the best practices for treatment and follow-up when candidiasis is encountered in a pediatric patient.

**PLEXIFORM SCHWANNOMA OF THE ORAL/PHARYNGEAL REGION: REPORT OF FOUR CASES AND A REVIEW OF THE LITERATURE.** *DR. ANGELA CHI, PROF. BRAD NEVILLE. MEDICAL UNIVERSITY OF SOUTH CAROLINA*

Plexiform schwannoma represents an unusual schwannoma variant, characterized by multinodular growth grossly and/or microscopically. A review of the English language literature reveals only 30 previously reported cases involving the oral/pharyngeal region, and herein we present 4 additional cases. Among these 34 cases, the average age at diagnosis was 27 years (range 5 to 58 years), with a female-to-male ratio of 1.3:1. The most frequently involved sites were the lips (n=11) and tongue (n=11). Lesion duration prior to presentation was reported in 15 cases and ranged from 6 weeks to 26 years. The average lesion size was 2.1 cm (range 0.4 to 8.5 cm). Three tumors were described as "large" or "giant," including one extending from the sublingual region to the mediastinum. The typical clinical presentation was a solitary/localized, painless, and slowly enlarging swelling. However, 5 patients exhibited other clinical findings (e.g., pain/discomfort, sore throat, dysphagia, dyspnea). Three cases arose in association with neurofibromatosis 2 (NF2). Other neural tumor types (e.g., conventional schwannoma, meningioma) and/or >1 plexiform schwannoma were found in 5 patients (3 with NF2 and 2 who did not fulfill diagnostic criteria for NF2). Microscopic examination typically showed a proliferation of multiple well-circumscribed tumor nodules, each surrounded by a thin capsule. Antoni A and B patterns were evident in varying proportions. Infrequent histopathologic findings included ancient change (n=1) and induction of adjacent surface epithelium/odontogenic epithelial rests (n=1). Immunohistochemical findings included reactivity for S-100 protein among the tumor cells (15/15 cases), reactivity for EMA among capsular perineural cells (3/4 cases), and no reactivity for NFP among the tumor cells (6/6 cases). Most patients (n=22) were treated by excision or enucleation. Among the 14 cases for which follow-up information was provided, 3 recurred. Unlike plexiform neurofibromas, plexiform schwannomas exhibit only a weak association with neurofibromatosis and have no known malignant potential.

**HEAD AND NECK RHABDOMYOSARCOMA (RMS) IN CHILDHOOD.** *DR. NASSER SAID AL NAIEF[A], DR. ROMAN CARLOS[B], DR. OSLEI PAES DE ALMEIDA[C], DR. PAUL EDWARDS[D]. [A] OHSU MEDICAL CENTER, [B] HOSPITAL HERRERA-LLERANDI, [C] UNICAMP, [D] INDIANA UNIVERSITY*

**Objectives:** To report 4 pediatric RMS in Guatemala [age range 8-13 years] exhibiting aggressive clinical behavior.

**Findings:** 2 cases involved sinonasal & paranasal sinuses; one the anterior mandibular facial area & another affecting paraorbital and mid facial region, with previous additional history of radiation therapy & R. ocular exenteration at 2 years of age for retinoblastoma. Rapid, massive growth with nasal obstruction was observed in all 3 cases, leading to gross. R. ocular displacement and facial deformity was noted in one case, while facial and mandibular swelling was reported in another. The period of tumor growth ranged from 2 -6 months. 3/ 4 patients were treated with

Rad. & chemoth. & 1 patient (post radiation) also underwent surgical intervention as chemoth. & Rad. showed no response. Follow-up period ranged from 2 months to 3 years, where 2 patients were alive & disease free while the other 2 expired of wide spread disease, including CNS invasion & both patients within that cohort had evidence of regional lymph node metastasis and one of the 2 also exhibited CNS involvement. Histomor-morphologic subtypes included 3 embryonal and 1 post radiation subtypes. All cases reacted positively with IHC to desmin & myogenin. Ki67 labeling was 75% to 90 % in 3 cases and was not performed in the 4th. One of the cases which encompassed small round cell morphology also reacted positively with CD99, albeit with co-expression of desmin and myogenin.

**Conclusions:** Our cases highlight the aggressive nature of RMS, with distant metastasis in 3 cases and high Ki-67 labeling. Positive expression of CD99 should not deter from the diagnosis of RMS provided co-expression of myogenin and desmin is confirmed. Considering its aggressiveness and failure to respond to any form of current treatment, post-radiation RMS should be classified as an unspecific variant of RMS.

## RED LIGHT IRRADIATION REGULATES ROS SCAVENGING AND ANTI-INFLAMMATION THROUGH SPHK1/NF-KB PATHWAY IN HACAT CELLS.

*MS. QIAOCHU SUN, PROF. YOUNG KIM, PROF. OKJOON KIM. CHONNAM NATIONAL UNIVERSITY*

**Objectives:** Oxidative stress is a well-accepted pathogenesis of several human diseases, which is an increased amount of the oxidants exceeding the capacity of antioxidant defense system. Light-emitting diode irradiation (LEDI) represents an efficient strategy to counteract this condition. The purpose of the present study was to evaluate the ROS scavenging and anti-inflammatory mechanism of LEDI.

**Findings:** cDNA microarray, semi quantitative PCR (semi-qPCR), western blotting and small-interfering RNA (siRNA) transfection were processed on PMA induced oxidative stress and inflammation in HaCaT cells. In this study, 625 nm LEDI showed the effect of ROS scavenging and anti-inflammation. One of the most important genes which identified by microarray analysis was sphingosine kinase-1 (SPHK1), which is a key enzyme in sphingolipid metabolism. SPHK1 knockdown drastically reduced the viability of ROS scavenging in the presence of PMA-stimulated HaCaT cells. Furthermore, results with cyclooxygenease-2 (COX-2) and prostaglandin E2(PGE2) further indicated the importance of the SPHK1 in anti-inflammatory process in HaCaT cells.

**Conclusions:** The results obtained in this work highlight the possible role of SPHK1 in ROS scavenging and anti-inflammation in PMA-stimulated HaCaT cells, investigating for the first time the possibility its involved molecular mechanisms. And SPHK1 can be used as a therapeutic target in LEDI treatments for treating skin disorders through ROS scavenging and/or anti-inflammation.

## SARCOMAS OF THE HEAD AND NECK- A 10-YEAR REVIEW FROM A SPECIALIST CENTRE.

*DR. SYED ALI KHURRAM[A], DR. ADAM JONES[B], DR. DAVID HUGHES[C], PROF. LYNDA WYLD[D], DR. NIKHIL KOTNIS[C], DR. MALEE FERNANDO[C]. [A] SCHOOL OF CLINICAL DENTISTRY, UNIVERSITY OF SHEFFIELD, [B] CARDIFF AND VALE NHS TRUST, [C] SHEFFIELD TEACHING HOSPITALS NHS FOUNDATION TRUST, [D] THE MEDICAL SCHOOL, UNIVERSITY OF SHEFFIELD*

**Objectives:** Head and neck (H&N) sarcomas are rare mesenchymal lesions accounting for 5-15% of all sarcomas with a poor prognosis. Their management can be challenging due to the complex anatomy, difficulty in surgical removal and heterogeneity within and between lesions. The aim of this study was to determine the range and demographics of all histologically confirmed H&N sarcomas over a 10-year period seen at a regional specialist sarcoma centre. Information about grade, margin clearance, treatment modality, metastasis and recurrence was analysed and correlated to survival.

**Findings:** 87 sarcomas were identified using the local database with a male prevalence (67%) and a mean age of 43 years. The most common diagnoses were angiosarcoma, pleomorphic sarcoma NOS (14.9%), chondrosarcoma (10.34%) and rhabdomyosarcoma (9.2%). The most commonly involved sites were scalp (26.44%), neck (12.64%), buccal mucosa and temporal fossa (9.2%). The majority of the lesions were Trojani grade 3 (44%). A large proportion of the sarcomas were smaller than 5 cm (70%). 97% of cases were treated with curative intent with surgery the first intervention in 77% cases and chemoradiotherapy in the remaining 23%. When surgery was employed, excision was undertaken for 90% of cases and debulking for the remaining 10%. 47% cases developed a recurrence which was predominantly locoregional (68%) and related to margin involvement ($p<0.005$). Overall and disease-specific survival was significantly related to gender, grade, metastasis and treatment modality ($p<0.05$).

**Conclusions:** Head and neck sarcomas are rare and complex lesions requiring multidisciplinary management. Our survival rates are similar to those reported in literature with grade and metastasis being the most important predictors of survival. National and international databases are required for multicentre registration and better identification of prognostic factors.

## AN ATYPICAL SIMPLE BONE CYST IN THE INFERIOR ALVEOLAR CANAL: A CASE REPORT.

*DR. MD SHAHIDUL AHSAN, PROF. NIDHI HANDOO, PROF. SAULO SOUSA MELO, PROF. SHERRY TIMMONS, DR. FELIPE NOR, DR. JOSHUA ORGILL, DR. SCOTT STEWARD-THARP, PROF. JOHN HELLSTEIN. UNIVERSITY OF IOWA COLLEGE OF DENTISTRY*

**Objective:** The simple bone cyst is a benign intraosseous pseudocystic lesion without any epithelial lining. As most of simple bone cysts are asymptomatic, they are commonly first noticed as incidental radiographic findings. In the jaws, they are predominant in the mandibular premolar and molar region of young adults. We present a case of simple bone cyst of the mandible with atypical association with the inferior alveolar canal.

**Clinical presentation:** A 52-year-old female patient presented with a well-defined, finely corticated, unilocular, radiolucent lesion of unknown duration in the right ramus of the mandible, with no relevant past medical history. A benign odontogenic lesion was considered. However, given that the CBCT findings indicated the inferior alveolar canal as a possible epicenter, the differential diagnosis also included neural tumors and vascular anomalies. Incisional biopsy was performed, but no epithelial lining was noted. Microscopically, the specimen consists