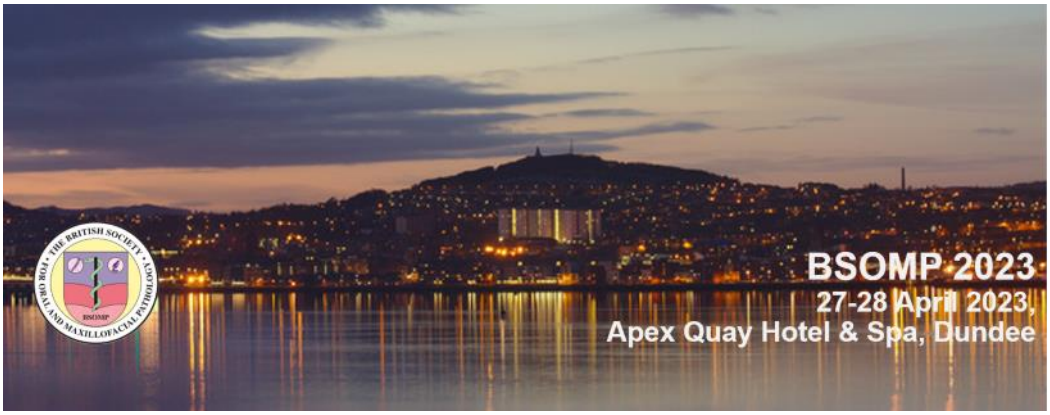
British Society for Oral & Maxillofacial Pathology

Annual Scientific Meeting Programme 2023



University of Dundee

Local Organiser: Dr Sharon J White s.j.z.white@dundee.ac.uk

Welcome

It is with great pleasure that I welcome you to Dundee for the Annual Scientific Meeting of the British Society for Oral and Maxillofacial Pathology, our first in person meeting since 2019. The society which has held a meeting under various names since 1967 continues to thrive and has expanded its role in many ways e.g. the national Head and Neck EQA.

A big thanks goes to Dr Sharon White as local organiser who has arranged a varied and interesting scientific programme in a delightful venue. Thanks to all the speakers and chairpersons who have been working hard in preparation. I hope that you will enjoy it all - the paper and poster sessions, the slide seminar, the platform talks - in particular the WHO updates from Professor Odell. Above all, I hope that after such a prolonged break, you will enjoy the chance to catch up in person with your colleagues in Oral and Maxillofacial Pathology.

Dr Mary Toner

BSOMP President

Wednesday 26th April 2023

3:00-5:00 pm	**Trainee teaching** **'There and back again: oral path training, exams and beyond'** **Dr Brendan Conn** Discovery Learning Suite, Level 7, School of Dentistry, University of Dundee, Park Place, Dundee DD1 4HN
4:00-6:00 pm	**BSOMP Council Meeting (*BSOMP Council Members Only*)** Board Room, Level 6, School of Dentistry, University of Dundee, Park Place Dundee DD1 4HN
7:30pm	**BSOMP Council Dinner (*BSOMP Council Members only*)** Jute Café Bar, Dundee Contemporary Arts, 152 Nethergate, Dundee DD1 4DY

Thursday 27th April 2023

Apex Dundee City Quay Hotel & Spa

8:30-10:25 am	**Registration**
9:00-10:00 am	**Oral Pathology Teachers' Meeting (*Teacher's Group Only*)**
10:00- 10:25 am	**Coffee**
10:25 am	**Welcome** Dr Mary Toner, BSOMP President
10:30-12:00 pm	**Oral Presentations** Chairs: Dr Daniel Brierley and Dr James Brown
10:30-10:40 am	**OP1. A comparison of histopathological turnaround times for mandibulectomies, glossectomies and incisional biopsies of the tongue** Dr Andrew W Barrett, Queen Victoria Hospital NHSF Trust, East Grinstead, UK
10:40-10:50 am	**OP2. In Situ Detection of the CRTC1-MAML2 Translocation Expression in Mucoepidermoid Carcinoma** Dr Esra B. Amoura, University of Sheffield, UK
10:50-11:00 am	**OP3. The role of R-loops in the development of cisplatin resistance in Human Papillomavirus Associated (HPV+) and Human Papillomavirus Independent (HPV-) Oropharyngeal Squamous Cell Carcinoma (OPSCC)** Dr Hannah Crane, University of Sheffield, UK
11:00-11:10 am	**OP4. Analysis of single-cell transcriptomic data reveals considerable heterogeneity among human oral mucosa antigen presenting cells** Dr Maren B Solhaug, University of Oslo, Oslo, Norway

11:10-11:20 am	**OP5. Evaluation of the Use of Single-Use Plastics in Oral and Maxillofacial Pathology** Dr Mollie Clark, Sheffield Teaching Hospitals, UK
11:20-11:30 am	**OP6. Automated image (IA) analysis of H&E slides and neural network (NN) modelling predicts treatment outcomes and identifies features associated with lymph node metastasis in HPV+ oropharyngeal squamous cell carcinoma (HPV+opSCC)** Dr Jonas Hue, King's College London, UK
11:30-11:40 am	**OP7. The beauty is in the AI of the stroma** Dr Hannah Walsh, University of Sheffield, UK
11:40-11:50 am	**OP8. An oral pathologist working in industry - translating biomarkers for cutaneous melanoma into clinical practice** Professor Philip Sloan, AMLo Biosciences, Biosphere, Newcastle upon Tyne, UK
12:00-12:15pm	**Poster Preview Presentations** Chairs: Dr Daniel Brierley and Dr James Brown
	P1. Clinicopathological and immunohistochemical analysis of head and neck rhabdomyosarcomas in paediatric patients: an international collaborative study Karen Patricia Dominguez Gallagher, São Paulo, Brazil
	P3. The Value of Labial Gland Biopsies as a Diagnostic Test for Sjögren's Syndrome Mollie Clark, University of Sheffield, UK
	P4. A Tale of Two Pathologies Fatima Elmahgoub, University College London Hospitals NHS Foundation Trust, UK
	P5. A classic presentation of a rare cause of intraoral malignancy associated with HIV Laura Graham, BHSCT, Belfast, UK

P6. Investigation of tumour-associated stroma infiltrating lymphocytes in oral and oropharyngeal cancers

Elaine Marti, University of Sheffield, UK

P7. Synovial chondromatosis of the temporomandibular joint: a rare case report

Maria Eduarda Pérez-de-Oliveira, University of Campinas (UNICAMP), Piracicaba, São Paulo, Brazil, University of Sheffield, UK

P8. High-grade osteosarcoma arising from the maxilla in the setting of fibrous dysplasia: A case report

Wei Ning Saik, University College London Hospitals NHS Foundation Trust, UK

P9. Tuberculosis lesion of the mandible

Stella Stasiak, Bradford Teaching Hospitals Foundation Trust

P10. An analysis of second-opinion referrals to an Oral and Maxillofacial Pathology unit

India Stephens-Laborde, Sheffield Teaching Hospitals NHS Foundation Trust, UK

P11. A lesion in the parotid is not always a salivary gland neoplasm. Report of three cases

Paris Tamiolakis, Leeds Teaching Hospitals, NHS Trust, UK

P12. Oral squamous cell carcinoma in young patients. A single-center clinicopathological study

Grigorios Thermos, School of Dentistry, National and Kapodistrian University of Athens, Greece

P2. Human papillomavirus associated oral epithelial dysplasia: a case report

Karen Patricia Dominguez Gallagher, São Paulo, Brazil

12:15-1:15pm **Lunch and Poster Viewing**

1:15-2:30 pm	**WHO Head and Neck Tumours 5th Edition Update 1:** **Oral cavity and odontogenic tumours** Professor Edward Odell Chair: Dr Mary Toner
2:30-3:00 pm	**Coffee**
3:00-3.30 pm	**Using NHS Research Scotland Tissue Biorepositories to maximise research outputs** Dr Sharon King, Human Tissue Governance Manager for NHS Tayside and the University of Dundee Chair: Dr Mary Toner
3:30-4:00 pm	**The roles and responsibilities of a forensic dentist** Dr Scheila Mânica, Clinical Senior Lecturer in Forensic Odontology, University of Dundee Chair: Dr Mary Toner
4:00-5:00pm	**BSOMP AGM (*BSOMP Members only*)**
7:00- 11:00pm	**Drinks Reception, Conference Dinner and Ceilidh** Apex Dundee City Quay Hotel & Spa

Friday 28th April 2023

Apex Dundee City Quay Hotel & Spa

8:15-9:15 am	**Registration**
9:15- 10:30 am	**WHO Head and Neck Tumours 5th Edition Update 2: '**Tumours of the jaws, salivary glands and other sites' Professor Edward Odell Chair: Dr Sarah Mukhtar
10:30- 11:00 am	**Coffee**
11:00-12.30 pm	**Slide Seminar : SINonasal Pathology** Panel: Dr Anne Chambers, Dr Brendan Conn, Dr Grant Stenhouse Chair: Dr Sarah Mukhtar
12:30 -1:30 pm	**Lunch**
1:30-3.25 pm	**Head and Neck EQA Review** Dr Timothy Bates, Dr Adam Jones, Dr Miranda Pring
3.25-3.30 pm	**Closing Remarks** Dr Mary Toner, BSOMP President
3:30 pm	**Coffee**

Oral Presentation Abstracts

OP1. A comparison of histopathological turnaround times for mandibulectomies, glossectomies and incisional biopsies of the tongue

Márcia M Dias, Andrew W Barrett

Department of Histopathology, Queen Victoria Hospital NHSF Trust, East Grinstead, UK

Background: the aim of this study was to retrospectively compare the turnaround times (TT), i.e., interval from receipt of specimen to issue of the histopathology report, of two types of oral cancer resections (mandibulectomies and glossectomies) and incisional biopsies from the tongue (n = 100 of each).

Methods: information recorded included: the number of days from receipt of specimen until the sample was ready for reporting; the number of subsequent days until the report was authorised by the pathologist; number of days mandibulectomies required decalcification; number of blocks processed per sample; pathological TNM stage of resections.

Results: mandibulectomies had statistically significantly longer TT than glossectomies and dentate mandibulectomies had the longest TT of all. Incisional biopsies had the shortest TT with 87% reported in seven days and 95% in ten. There were also statistically significantly longer TT for pT3/pT4 than for pT1/pT2 glossectomies, and between the number of blocks processed for the three main groups. Decalcification and the interval whilst the slides awaited the pathologist's attention were identified as “bottlenecks”.

Conclusions: extraction of teeth at operation and detachment of the lower border of the mandible at macroscopic sampling are potential means by which the decalcification delay might be reduced. Expectations of the multidisciplinary team managing the patient should be realistic when scheduling post-operative discussion.

OP2. In Situ Detection of the CRTC1-MAML2 Translocation Expression in Mucoepidermoid Carcinoma

Esra Bashir Amoura[1,2], Vivian Petersen Wagner[1,3], Colin D Bingle[4], Keith D Hunter[1,5], Lynne Bingle[1]

[1]Department of Oral and Maxillofacial Pathology, School of Clinical Dentistry, The University of Sheffield, UK, [2] Charles and Clifford Dental Hospital, Sheffield Teaching Hospital, UK, [3]Department of Oral Diagnosis, Piracicaba Dental School, University of Campinas, Piracicaba, Brazil, [4] Department of Infection, Immunity and Cardiovascular Disease, Medical School, The University of Sheffield, UK, [5]Department of Head and Neck Pathology, School of Dentistry, The University of Liverpool, UK.

Background: Mucoepidermoid carcinoma (MEC), the most common salivary gland cancer, is often associated with the presence of the CRTC1-MAML2 fusion gene. The translocation can be detected by FISH or RT-PCR but information regarding transcript level or cell type(s) harbouring the translocation cannot be determined. This study describes, for the first time, a novel, in situ, chromogenic assay, BaseScope, to assess CRTC1-MAML2 fusion transcript expression levels and identify the specific cell types harbouring the translocation.

Methods: Twenty-nine Formalin-Fixed Paraffin-Embedded patient samples and known fusion-positive and negative human MEC cells were assayed using a novel BaseScope probe targeting the exon-exon junction in the CRTC1-MAML2 fusion transcript. Break-apart FISH for MAML2 was performed on 10 cases to validate the specificity of the BaseScope assay.

Results: The CRTC1-MAML2 RNA transcript was detected in known fusion-positive cells but not fusion-negative cells. In MEC patient samples distinct fusion events, in the form of punctate red dots, were detected in all tumour grades and all cell types. No positive staining was seen in normal tissue or surrounding stroma and no unique morphological features were noted in negative cases. Interestingly, in some specific cases, the translocation was identified in tumour cells that had direct contact with tumour stroma or were involved with perineural invasion.

Conclusion: Our novel BaseScope assay accurately detects the CRTC1-MAML2 fusion translocation, provides a routine, easy-to-use chromogenic technique, to aid accurate diagnosis of MEC results and showed a good agreement with the FISH for MAML2.

OP3. The role of R-loops in the development of cisplatin resistance in Human Papillomavirus Associated (HPV+) and Human Papillomavirus Independent (HPV-) Oropharyngeal Squamous Cell Carcinoma (OPSCC)

Hannah Crane [1,2], Keith Hunter[3] and Sherif El-Khamisy [2]

[1]School of Clinical Dentistry, University of Sheffield, UK, [2]School of Biosciences, University of Sheffield, UK, [3]Liverpool Head and Neck Centre, University of Liverpool

Background: OPSCC has two subtypes: HPV+ and HPV-; which are typically treated with chemoradiotherapy involving cisplatin. Cisplatin creates DNA crosslinks, which lead to apoptosis. Clinical outcomes in HPV- OPSCC are poor and a subset of HPV+ patients suffer from distant metastases, therefore there is a need to understand the molecular basis of cisplatin resistance. R-loops are DNA/RNA hybrids formed when RNA anneals to one strand of DNA, leaving a free strand of DNA. R-loops are usually transient; however, they can persist and can regulate gene expression as well as being a source of genomic instability. However, their role in cisplatin resistance of OPSCC is unknown.

Methods: A HPV+ and HPV- cisplatin resistant cell line were developed and validated with clonogenic assays. Changes in R-loop dynamics upon development of cisplatin resistance were explored using slot blots and DRIP-qPCR. The effect of depleting known R-loop regulators on cisplatin sensitivity was assessed using MTS assays and Immunofluorescence for DNA damage markers.

Results: In both HPV+ and HPV- cisplatin sensitive cells, R-loops increase with cisplatin treatment. Interestingly, in HPV+ resistant cells, there is an increase in R-loops at baseline when compared to the sensitive cells. HPV+ resistant cells also upregulate a known R-loop resolving protein known as senataxin. When senataxin is depleted in HPV+ resistant cells, the resistant cells are re-sensitised to cisplatin, show a greater number of DNA double strand breaks and increased R-loops at certain loci.

Conclusions: Modulation of R-loops may be a potential therapeutic target in cisplatin resistance and warrants further investigation.

OP4. Analysis of single-cell transcriptomic data reveals considerable heterogeneity among human oral mucosa antigen presenting cells

Maren B Solhaug[1], Diana Domanska[2], Olav Schreurs[1], Karl Schenck[1], Espen S Baekkevold[1,2]

[1]Institute of Oral Biology, [2]Department of Pathology, Oslo University Hospital and University of Oslo, Oslo, Norway.

Background: Oral mucosal antigen presenting cells (APCs) comprise macrophages, conventional dendritic cells (DCs) and Langerhans cells. However, little is known about the heterogeneity and functional phenotypes of their subsets compared to other barrier tissues like the skin and the gut.

Methods: Here, we analyzed human oral mucosa APCs using single-cell transcriptomic data from the recently published Human Oral Mucosa Cell Atlas (https://oral.cellatlas.io/).

Results: By filtering APCs based on co-expression of PTPRC/ CD45 and HLA II, we identified 21 phenotypically distinct APC clusters based on differentially expressed genes (DEGs). This included 4 subgroups of Langerhans-like cells. Flow cytometric analyses of human oral mucosa biopsies was used to support the findings.

Conclusions: Gene ontology (GO) analyses revealed distinct functional characteristics of the different APC clusters and cell–cell interaction analysis revealed an extensive cross-talk between APC subsets and oral stromal cells.

OP5. Evaluation of the Use of Single-Use Plastics in Oral and Maxillofacial Pathology

Mollie Clark, Daniel Brierley, Paul Hankinson, Hannah Walsh

Sheffield Teaching Hospitals, Sheffield, UK

Background: Single-use plastics (SUPs) contribute to the global environmental crisis both though unsustainable emissions and in the pollution of water. Most of the items used to transport and process pathology specimens are SUPs and are disposed of either in landfill or by incineration. The aim of this project was to quantify the SUPs used in Oral and Maxillofacial Pathology to facilitate discussion about reducing our negative environmental impact.

Methods: A retrospective observational study was completed to calculate the amount of SUP, by weight, used by the department annually. This includes pots and bags used for transporting specimens, cassettes and sponges used in processing, and personal protective equipment worn by staff during daily cut-up sessions. The contribution of different specimen types, including simple biopsies and oncology resections, was also examined.

Results: Using averages and extrapolation, we estimate that 82.83kg of SUPs are used by our department annually, with routine biopsies contributing the greatest proportion. This data was used to infer that roughly 2.34 tonnes of SUP waste is generated yearly by all pathology departments within the trust.

Conclusions: Although there is no easy solution, there are changes that can be made at departmental levels to transition towards reducing, reusing, and recycling a larger proportion SUPs. Wider and more impactful change is feasible, although institutional and national collaboration would be required, and the initial expenditure would likely be high. We hope that this project will highlight the importance of conscientious SUP use and serve as a baseline for future improvement and re-evaluation.

OP6. Automated image (IA) analysis of H&E slides and neural network (NN) modelling predicts treatment outcomes and identifies features associated with lymph node metastasis in HPV+ oropharyngeal squamous cell carcinoma (HPV+opSCC)

Jonas Hue, Selvam Thavaraj, Lorenzo Veschini,

King's College London, UK

Background: The favourable prognosis of patients with HPV+opSCC has called for de-escalation treatment regimes. However, this is contraindicated in the minority of HPV+opSCC patients with poor outcomes. We developed an IA tool for the quantification of single-cell features in diagnostic H&E slides which yielded multivariate predictors of treatment outcomes and features associated with lymph node metastasis.

Methods: An open-source image analysis (IA) tool for single-cell segmentation, classification and quantification of H&E images was used to analyse 889 images from a retrospective cohort of HPV+opSCC patients. Multivariate analyses and neural network (NN) classification models were used to identify predictors of either treatment response or nodal metastases (N+ vs N-).

Results: Univariate and multivariate analyses revealed several significant ($P<0.05$) prognostic features including immune infiltrate and heterogeneous cellular features. The NN model predicted outcomes with an accuracy of 86.7% in the test set. N+ tumours demonstrated characteristic alterations in cell morphology but were unable to demonstrate clear separation from N- via principal component analysis.

Conclusion: Our IA tool indicates in-depth, single-cell morphometric analyses enables the prediction of HPV+opSCC outcomes with promising accuracy, supporting the use of machine learning in routine diagnostic pathology without additional biomarkers. Currently, more work is required before we can robustly predict nodal metastasis.

OP7. The beauty is in the AI of the stroma

Hannah Walsh, Syed Ali Khurram

University of Sheffield, UK

Background: The diagnosis of fibro-osseous lesions (FOL) is extremely challenging based upon histology alone requiring correlation with radiology. Artificial Intelligence (AI) is increasingly being used to identify biomarkers of disease and can be a useful adjunct to conventional histopathology analysis. This is the first study to investigate the use of AI and machine learning (ML) as an adjunct to FOL diagnosis.

Methods: Following ethics approval, cases of fibrous dysplasia (FD) and ossifying fibroma (OF) were retrieved from the local pathology archive and scanned using a Leica CS2 scanner at x40 to obtain whole slide images (WSI). The images were analysed using an open-source bio-image software (QuPath) with 63 regions of interest (ROI) selected from both groups. Training was performed using cell detection and ROI allocation to the relevant entity category. The trained ROI allowed for the formulation of an Artificial Neural Network (ANN) ML classifier which was then tested on 10 unseen cases (5 each of OF and FD) to test the accuracy of the algorithm. Correlation with nuclear and morphometrical features was also performed.

Results: Using stromal features our ANN classifier could identify OF with an accuracy of 87.43% (F1 score= 0.92) and FD with an accuracy of 84.1% (F1 score= 0.89).

Conclusions: The results of this pilot study are novel and promising showing differences in stromal features. We plan to perform validation on a bigger cohort of unseen cases and expand the study to incorporate deep learning models and radiological features to further strengthen the diagnostic predictions.

OP8. An oral pathologist working in industry - translating biomarkers for cutaneous melanoma into clinical practice

Philip Sloan[1], Tom Ewen[2], Joe Lowenstein[1], Paul Barrett[3], Niki Stephanos[4], Akhtar Husain[5], Max Robinson[5] and Penny Lovat[1,2]

[1]AMLo Biosciences, Biosphere, Newcastle upon Tyne, NE4 5BX, [2] Translational and Clinical Research Institute, Newcastle University, Newcastle upon Tyne, NE24HH, [3]Cellular Pathology, University Hospital of North Durham, Durham DH1 5TW, [4]Cellular Pathology, Jersey Hospital, Saint Helier JE2 3DF, [5]Cellular Pathology, Newcastle upon Tyne Hospitals NHS Trust, Newcastle upon Tyne NE14LP

Background: Histological prognostic biomarkers are an unmet clinical need for cutaneous melanoma, and their development is limited by pathology resource and expertise, including defining interpretation criteria, quality control, accreditation, training, and provision of a clinical referral service.

Methods: The development and validation of a prognostic marker based on immunohistochemical expression of two epidermal proteins, AMBRA1 and Loricrin, is described. Maintained expression of one or both biomarkers in the epidermis overlying stage I/II melanoma identifies a genuine low-risk group, whereas loss of both markers defines tumours remaining at their AJCC staging risk. Prospective analysis of AMBLor in four independent cohorts of non-ulcerated stage I/II cutaneous melanomas was performed by 5 histopathologists blinded to outcome.

Results: Maintained AMBLor in the discovery cohort (US and Australia, n=541) correlated with significantly increased recurrence-free survival (RFS) of 96% compared to 87% for patients with tumours in which AMBLor was lost (P = 0.06; NPV 96%). Subsequent AMBLor analysis in the validation cohort (Spain and UK, n=303), confirmed maintenance of AMBLor was associated with increased RFS of 98% compared to 81% for patients with stage I/II tumours in which AMBLor was lost (P = 0.01; NPV 98%).

Conclusions: Inclusion of AMBLor into management pathways may aid stratification of follow up, enable savings on healthcare resources and improve patient anxiety. Moreover, these data highlight both the opportunities and expertise of Cellular Pathologists in the validation and implementation of prognostic biomarkers in areas of clinical unmet need.

Poster Presentation Abstracts

P1. Clinicopathological and immunohistochemical analysis of head and neck rhabdomyosarcomas in paediatric patients: an international collaborative study

Karen Patricia Dominguez Gallagher[1,2,3], Keith Hunter[3], Willie van Heerden[4], Liam Robbinson[4], Roman Carlos†, Hélder Antônio Rebelo Pontes[5], Lara Maria Alencar Ramos Innocentini[6], Marianne de Vasconcelos Carvalho[7], Sheila Aparecida Coelho Siqueira[8], Mário José Romañach[9], Pablo Agustin Vargas[1], Alan Roger Santos-Silva[1]

[1]Oral Diagnosis Department, Semiology and Oral Pathology Areas, Piracicaba Dental School, University of Campinas, São Paulo, Brazil, [2]Teaching Assistant Professor, Oral Pathology, School of Dentistry, National University of Asunción, Paraguay, [3]Liverpool Head and Neck Centre, Molecular and Clinical Cancer Medicine, University of Liverpool, Liverpool, UK, [4]Department of Oral Pathology and Oral Biology, School of Dentistry, University of Pretoria, South Africa, [5]Oral Pathology Department, João de Barros Barreto University Hospital, Federal University of Pará, Pará, Brazil, [6]Dentistry and Stomatology Division, Ophthalmology, Otolaryngology and Head and Neck Surgery Department, University Hospital of the Ribeirão Preto Medical School, University of São Paulo, São Paulo, Brazil, [7]School of Dentistry, Pernambuco University, Pernambuco, Brazil, [8]Department of Pathology, University of São Paulo, São Paulo, Brazil, [9]Department of Oral Diagnosis and Pathology, School of Dentistry, Universidade Federal do Rio de Janeiro, Rio de Janeiro, Brazil

† This author passed away on 5 November 2021. In memoriam to his great contribution to this research

Background: Rhabdomyosarcoma accounts for 4.5–7% of all malignant tumours in children and adolescents but is the most common soft tissue sarcoma in paediatric population. The head and neck are affected in 35-40% of cases. Thus, this study aimed to analyse the clinicopathologic and immunohistochemical features of paediatric head and neck rhabdomyosarcomas (HNRMS) from Brazil, Guatemala, Mexico, and South Africa.

Methods: Forty-four paediatric HNRMS were obtained from eight Oral Pathology services in 23 years (1998-2021). Clinicopathological data of all cases were reviewed. The immunohistochemical quantification for Desmin, Myogenin, Myo-D1, and Ki67 was performed using the QuPath v0.2.0-m5 software.

Results: Forty-nine percent of HNRMS were from Brazil; 27.3% from South Africa, 22.7% from Guatemala, and 9.1% from Mexico. The mean age of patients was 8.5 ± 5.2 years (range 1-19 years) with a slight male predilection. Non-parameningeal tissues (52.3%) were more affected, followed by parameningeal (36.8%) and orbit (11.4%). Microscopically, embryonal rhabdomyosarcoma (81.8%; 36/44) predominated over alveolar (18.1%; 8/44). Most paediatric HNRMS showed positivity for at least two myogenic markers. Desmin was positive in 93.2% of cases, Myogenin and MyoD1 resulted positive in 91% and 71.4% of HNRMS, respectively. The proliferation index measured by Ki67 was moderate to high in most cases.

Conclusion: Paediatric HNRMS from Brazil, Guatemala, Mexico, and South Africa are more frequently diagnosed in non-parameningeal tissues in children <10 years old, presenting with classic clinicopathologic and immunohistochemical features for alveolar and embryonal subtypes.

P2. Human papillomavirus associated oral epithelial dysplasia: a case report

Karen Patricia Dominguez Gallagher, Ana Luiza Oliveira Corrêa Roza, Paulo Victor Mendes Penafort, Marcio Ajudarte Lopes, Alan Roger Santos-Silva, Pablo Agustin Vargas

Oral Diagnosis Department, Semiology and Oral Pathology Areas, Piracicaba Dental School, University of Campinas, São Paulo, Brazil

Background: The role of HPV16-18 is well-known in oropharyngeal cancer. However, their participation in developing dysplastic lesions and malignant oral cavity tumours is unclear. Recent studies have described the presence of high-risk HPV in a subset of oral epithelial dysplasia (OED) with specific histopathological features. Therefore, this report aims to describe a case of HPV-associated OED.

Case Report: A 51-year-old female presented with an asymptomatic white plaque in the left commissure which extended to the retro-commissural mucosa. Her past medical history was remarkable for HIV infection and regular tobacco consumption. After an incisional biopsy, a microscopic examination showed acanthotic oral epithelium with hyperkeratosis and a basaloid morphology. In addition, karyorrehectic cells exhibiting coarse chromatin resembling mitosoid bodies, marked pleomorphism, multinucleated keratinocytes, and apoptotic cells were identified. Due to clinical and histopathological findings, HPV-associated OED was suspected. Immunohistochemical staining revealed diffuse cytoplasmatic and nuclear positivity for p16 in the epithelium, and ISH confirmed the presence of HPV DNA in the epithelial cells' nuclei. The diagnosis of HPV-associated OED was confirmed.

Conclusions: HPV-associated OED should be considered a diagnostic possibility for oral leukoplakias, particularly in HIV patients, and when the presence of karyorrhectic and apoptotic cells in the oral epithelium is observed. Based on previous studies, it is important to consider the positivity of p16 as a reliable tool for detection of high-risk HPV infection when associated with characteristic microscopic features.

P3. The Value of Labial Gland Biopsies as a Diagnostic Test for Sjögren's Syndrome

Mollie Clark, Hannah Walsh, India Stephens-Laborde, Daniel Brierley, Syed Ali Khurram

University of Sheffield/ Sheffield Teaching Hospitals, UK

Background: There are several findings which support a Sjögren's syndrome diagnosis, a chronic autoimmune condition associated with dry mouth and eyes. One available investigation is the invasive labial gland biopsy, which carries a risk of labial nerve damage. Positive histology is considered to be amongst the most objective diagnostic criteria, however there is debate about interobserver agreement and sensitivity.

Methods: This project involved a cohort of 50 historical cases which were blindly analysed by three members of the current diagnostic Oral and Maxillofacial Pathology team. For each case, the team determined if the histological appearance was supportive of a Sjögren's diagnosis and allocated a focus score. The consensus of the team was then compared to the original reports as well as blood test results where available.

Results: We observed 84% agreement between original report conclusion and current team consensus, which dropped to 58% when examining the focus scores. 79% of the originally reported conclusions were supported by corresponding blood test results. Notably, cases where biopsy was performed despite positive blood results make up 28% of the cohort.

Conclusions: This project has raised the possibility that undue emphasis is placed on the value of labial gland biopsies. The current system for grading these biopsies may be too ambiguous, with a very low threshold of just 1 focus of lymphocytes being considered indicative of Sjögren's syndrome. With the associated risks and questionable sensitivity of a labial gland biopsy, all non-invasive techniques like ultrasonography and serology should be exhausted before it is used.

P4. A Tale of Two Pathologies

Fatima Elmahgoub, Oluyori Adegun, Colin Liew, Xin Kowa, Amrita Jay

University College London Hospitals NHS Foundation Trust, UK

Background: Oral squamous cell carcinoma (SCC) is the most common malignant neoplasm arising in the oral cavity. Oral Kaposi sarcoma (KS) is uncommon, particularly in individuals who are seronegative for HIV. Its aetiology is associated with human herpesvirus 8 (HHV8); however, factors such as immunosuppression and genetic susceptibility are essential for its pathogenesis. It is rare for two neoplasms to be juxtaposed in the oral cavity. We present the case of an 83-year-old immunosuppressed male who presented with oral squamous cell carcinoma juxtaposed to Kaposi sarcoma.

Case Report: An 83-year-old male non-smoker, non-drinker, presented with a 2-month history of a 2cm exophytic verrucous lesion on the left lateral/tip of tongue. A superficial biopsy revealed a well differentiated SCC. Radiological imaging confirmed a 21mm diameter left lateral tongue tumour. There was no nodal disease or metastasis, clinically and radiologically. However, his co-morbidities included advanced stage diffuse non-Hodgkin's lymphoma with bone marrow disease diagnosed in 2015 with relapses in 2017 and 2019. He had received six courses of combined monoclonal antibody therapy and chemotherapy for the lymphoma, which included Polatuzumab vedotin, Bendamustine, and Rituximab (PBR), and was in remission since 2020.

Conclusion: This report raises awareness of the challenges in diagnosis of juxtaposed/collision tumours, as well as the significance of clinco-pathological correlation for the recognition of less likely pathologic entities, thereby preventing diagnostic errors. Additionally, it examines the association between immunosuppression and the subsequent development of oral KS.

P5. A classic presentation of a rare cause of intraoral malignancy associated with HIV

Laura Graham[1], Ryan McConville[2], Amanda Willis[2], Séamus Napier[1]

[1]Cellular Pathology Department, BHSCT, Belfast, UK, [2]School of Dentistry, BHSCT, Belfast, UK

Background: Although lymphoma is a rare cause of malignant intraoral swelling, it is one of the most common malignancies in patients with HIV. This case illustrates the classical histological features of a rare type of lymphoma associated with immunosuppression and EBV infection. It provides an opportunity to explore the potential diagnostic dilemmas associated with plasmablastic morphology.

Case Report: A 65 year old male patient presented with swelling around the upper central incisors which was painful to touch. The upper central incisors were mobile and subsequently extracted. However, the swelling persisted despite three courses of antibiotics. Medically there was a history of HIV, on HAART with an undetectable viral load. Intraoral examination revealed an extensive, nodular, exophytic swelling in the edentulous portion of the anterior maxilla. Biopsy tissue sent for histopathological examination revealed sheets of plasmablasts within the lamina propria, with enlarged vesicular nuclei, a dispersed chromatin pattern and prominent eosinophilic nucleoli. Immunohistochemistry for CD138, MUM1, cMYC, CD56 and EBER ISH was positive. CD3 and CD20 were negative. We offered a diagnosis of Plasmablastic lymphoma (PBL).

Conclusions: PBL is rare and often an indication of more advanced disease stage rather than an immunocompetent state. It is an uncommon type of B-cell lymphoma but a rapidly enlarging painful mass in the oral cavity is the most common presentation. It is less common for oral cavity PBL to be CD56 positive. EBER positivity and a lack of CD20 expression helps differentiate it from other aggressive large B cell lymphomas with plasmablastic features.

P6. Investigation of tumour-associated stroma infiltrating lymphocytes in oral and oropharyngeal cancers

Elaine Marti, Daniel J Brierley, Syed Ali Khurram

Sheffield Teaching Hospitals NHS Foundation Trust/ School of Clinical Dentistry, University of Sheffield, UK

Background: Oral and oropharyngeal cancer is the sixth most common cancer worldwide. There is a need for novel and objective prognostication classification on the severity of the disease. Tumour-infiltrating lymphocytes (TILs) in histopathologic specimens represent the immune infiltrates in tumours. The assessment of TILs has been suggested to be a predictive biomarker to identify patients that are likely to respond to immunotherapeutic agents in several solid tumours.

Methods: TILs were scored in oral cancer specimens using the Working group guideline.

Results: Linear regression analysis showed a significant association of TILs score on the overall survival. Additional Kaplan-Meier curves were used in OS, PFS, DSS.

Conclusion: The method holds advantages including being reproducible, cost-effective, no need for expensive tools or specific antibodies, and simple application in standard pathology reports. Considering the routine implementation immunotherapy in practice, the clinical demand for reliable yet accessible biomarkers has been clear. TILs represent the immune infiltrate in tumours and can be used as a predictive biomarker to identify patients that are likely to respond to immunotherapeutic agents.

P7. Synovial chondromatosis of the temporomandibular joint: a rare case report

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Background: Synovial chondromatosis (SC) is a benign but locally aggressive neoplasm that occurs through dysregulation of cartilage formation within a joint, typically involving the larger joints, with the knee being the most affected site. Rarely, other sites including the temporomandibular joint (TMJ) may be involved.

Case report: A 48-year-old male patient was referred for diagnosis of a slow-growing painful swelling in the periauricular region of 2 years duration. A computed tomography scan revealed multiple round to oval hyperdense lesions within the right anterior TMJ space. Under general anaesthesia, the lesion was excised and submitted for histopathological evaluation. Gross examination consisted of multiple, grayish-white, smooth, and irregular hard nodules of varying size. Microscopically, the lesion consisted of multiple hyaline cartilaginous nodules, showing clusters of chondrocytes separated by a solid chondroid matrix with focal areas of calcification. Mild to moderate atypia with increased cellularity in some areas was observed, however, no signs of malignancy were identified. The final diagnosis of SC was established.

Conclusions: Although SC mainly affects larger joints of the body, the diagnosis should be considered when evaluating multiple small cartilaginous nodules loosely detached in the TMJ.

P8. High-grade osteosarcoma arising from the maxilla in the setting of fibrous dysplasia: A case report

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Background: Fibrous dysplasia (FD), a benign fibro-osseous lesion causing asymptomatic jaw expansion has low growth potential, which ceases following skeletal maturity. The presentation may be monostotic, polyostotic or syndromic, activating mutation of the GNAS-1 gene in many cases. Rare cases undergo malignant transformation. We report a case of high-grade osteosarcoma arising in the maxilla, in the setting of fibrous dysplasia and discuss the issues in diagnosis and management.

Case report: A 36-year-old woman presented with a one-year history of a progressive bony lump of the left midface. The initial biopsy diagnosis of FD was confirmed by GNAS mutation status. However, subsequent rapid growth and radiological features of aggressive growth instigated a second biopsy, revealing high-grade osteosarcoma. Patient had neoadjuvant chemotherapy followed by extended left maxillectomy with orbital exenteration.

Histology featured a lobulated neoplasm consisting of osteoid trabeculae in a background of pleomorphic and hyperchromatic epithelioid, spindle and stellate cells, completely replacing the maxillary bone. Also present were prominent chondroblastic zones. Occasional foci featured irregular curvilinear woven bone trabeculae surrounded by cellular bland fibroblastic cells. Distinguishing residual components of fibrous dysplasia from low-grade areas of osteosarcoma was challenging.

Conclusions: Identification of malignant transformation in fibrous dysplasia is complemented with radiology findings and assessment of tissue biopsy by expertise in bone pathology. The utility of GNAS, p53, MDM2 status in this distinction are discussed.

P9. Tuberculosis lesion of the mandible

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Background: Tuberculosis of the jaw is a rare form of extrapulmonary tuberculosis, with a prevalence of less than 1%. The following case report describes of a 36-year-old female patient with a tuberculosis lesion of the mandible.

Case Report: The patient presented with a chief complaint of a radiating pain on the right side of the mandible, accompanied by a swelling in lower right buccal sulcus with no other dental symptoms. Radiographic examination revealed a well-defined lytic lesion with indistinct borders, involving the right mandibular body. The Fine Needle Aspiration was performed, and histopathological examination showed presence of necrosis and acid and alcohol fast bacilli consistent with tuberculosis. The patient was scheduled for a biopsy of the mandibular lesion under general anaesthetic and referred to a chest physician for further management.

Conclusions: This case report highlights the importance of considering tuberculosis as a differential diagnosis in patients presenting with jaw lesions. It also emphasizes the need for an early diagnosis and appropriate management to prevent morbidity and spread of the disease. Dentists, oral and maxillofacial surgeons, and other healthcare professionals should be aware of the clinical and radiographic features of tuberculosis of the jaw, and include it in the differential diagnosis of jaw lesions, to facilitate prompt referral for further management.

P10. An analysis of second-opinion referrals to an Oral and Maxillofacial Pathology unit

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Background: Referrals are frequently sent to Oral and Maxillofacial Pathologists (OMFP) from the wider histopathology domain for expert opinion. This is deemed good practice as it reduces the risk of patients receiving inadequate or inappropriate care. Our aims were to assess these referrals, both in terms of demographics and diagnostic agreement.

Methods: 234 retrospective referrals were analysed from 2022. 144 were regional, 80 national and 10 international. The original diagnosis was compared to the second opinion and any changes to the diagnosis noted. Data such as the categories/diagnoses that elicited the most agreement/disagreement and whether the changes affected the nature of the diagnosis (i.e. benign, malignant etc.) was also obtained.

Results: 122 out of 234 referrals (52%) were concordant with the original diagnosis, 22 (10%) were generally concordant with the core diagnosis but had some degree of change/discrepancy, and 56 (24%) were discordant. 33 (14%) of the referrals did not provide an original diagnosis. 63% had no change to the nature of the condition, 7% changed from malignant to benign, 14% from benign to dysplastic, 2% from malignant to dysplastic, 4% from benign to malignant and 2% from dysplastic to benign. The most discordant category was salivary neoplasms (26%) with squamous cell carcinoma the most agreed upon (22%).

Conclusions: The majority of our referrals come from medically qualified or general histopathologists wanting an expert OMFP opinion. This review highlights the importance and need for specialist OMFP review for correct diagnosis and treatment for dysplastic, salivary and odontogenic lesions.

P11. A lesion in the parotid is not always a salivary gland neoplasm. Report of three cases

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Background: The vast majority of lesions occurring in the parotid gland are benign salivary gland neoplasms, mainly pleomorphic salivary adenoma and Warthin tumour. Parotid gland is also the second most common site of occurrence of malignant salivary gland tumours after the minor salivary glands. However, metastatic lesions or primary non-salivary neoplasms can also manifest in the parotid. The aim of this presentation is to showcase three cases which manifested clinically as primary parotid salivary gland lesions, mainly focusing on the potential diagnostic difficulties and the differential diagnoses.

Case Report: The three presented cases corresponded to three different patients. Only one of them had a contributory medical history with previously excised basal cell carcinoma and renal cell carcinoma, the latter 14 years ago. In this patient, the parotid lesion was clinically considered to be benign. The second patient had no previous history of malignancies. The third patient had a sebaceous cyst in the ipsilateral ear lobe for approximately 5 years. In the presentation, we take you through the journey to the final diagnoses on the three cases.

Conclusions: Pathologists should be aware that a lesion in the parotid gland is not always salivary in origin and in those cases, past-medical history, immunohistochemistry and molecular techniques are essential to reach a final diagnosis

P12. Oral squamous cell carcinoma in young patients. A single-center clinicopathological study

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Background: Oral squamous cell carcinoma (OSCC) is one of the most prevalent malignancies worldwide with a 5-year incidence of almost 1 million. OSCC predominantly affects patients in their 6-7th decades of life (oOSCC) but an alarming emergence of OSCC cases in younger patients (yOSCC) has been noted recently with several authors suggesting that the latter could be distinct from the former based on differences found in their respective clinicopathological and molecular features. We aimed to retrieve all cases of OSCC in patients younger than 40 years old diagnosed in a single center over an 18-year period and analyze their clinicopathological characteristics.

Methods: All cases of yOSCC diagnosed from 2005-2022 were collected from the archives of the Department of Oral Medicine, Oral Pathology & Hospital Dentistry, School of Dentistry of Athens and their demographics, clinical and histopathological features were analyzed. A randomly-selected cohort of oOSCC served as comparison group.

Results: Thirty yOSCC cases were retrieved (mean age: 33,87 years) accounting for 6,3% of all OSCC diagnosed in this period. An almost equal male to female ratio was observed and 50% of these tumors were classified as well-differentiated. A higher predilection for the tongue/floor of mouth was seen in yOSCC when compared to oOSCC ($p=0.01$) whereas no differences were found regarding gender and the degree of differentiation between the groups.

Conclusion: OSCC in younger patients seem to possess specific clinicopathological features that differ from OSCC occurring in older patients. Further studies might shed light on its exact etiology and distinct clinicopathological profile.