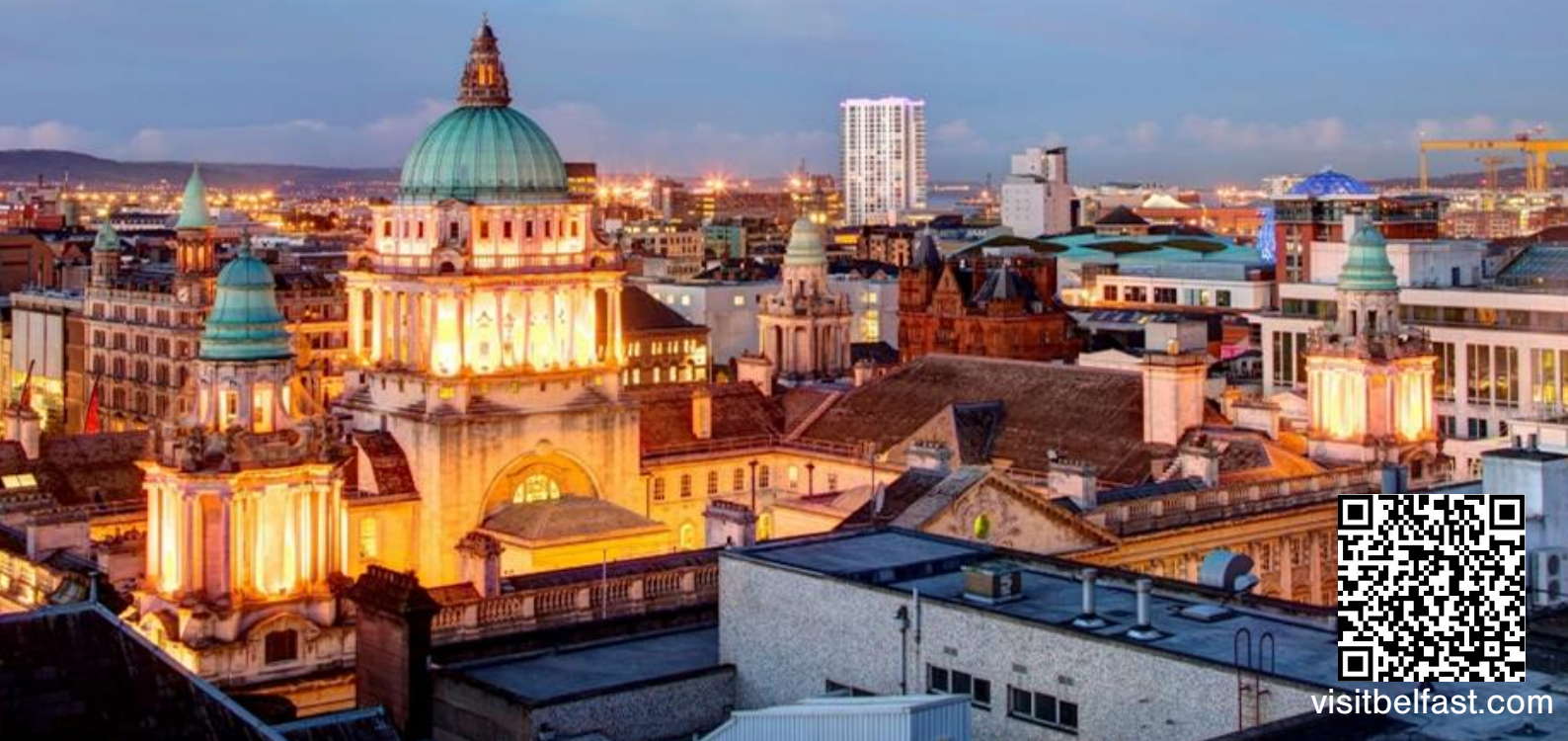
THE BRITISH SOCIETY FOR ORAL AND MAXILLOFACIAL PATHOLOGY

BSOMP

Belfast

# BSOMP Annual Scientific Meeting

## 25th – 26th April 2024



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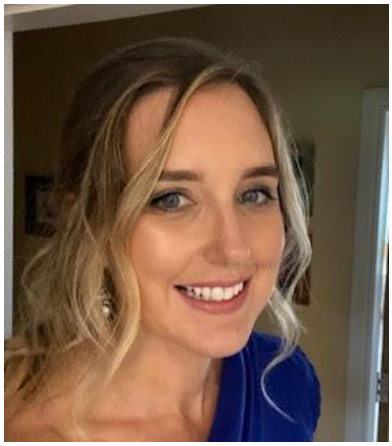
# Speakers & Presenters

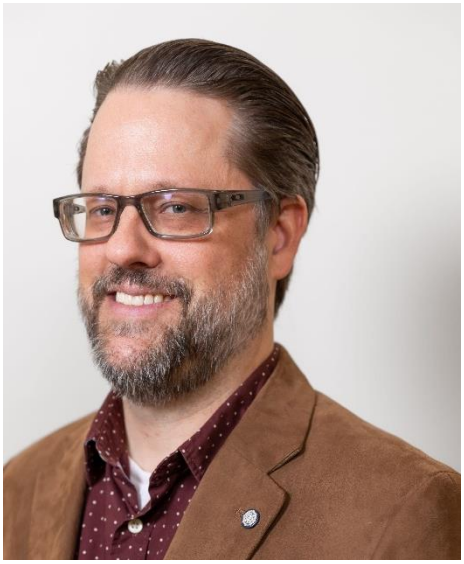


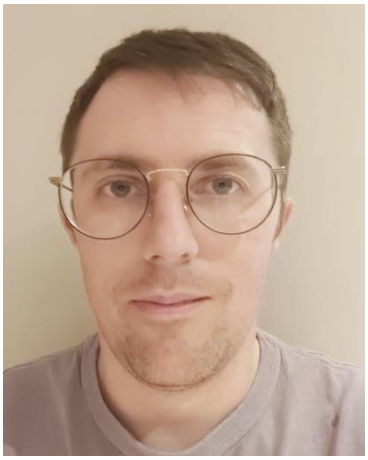
## Dr Elizabeth (Liz) Ball

Liz Ball is a graduate of Queen's University Belfast and was appointed as a Consultant Rheumatologist at Musgrave Park Hospital/ Belfast City Hospital in 2014. She is also an Honorary Lecturer at Queen's University Belfast. She has a special interest in autoimmune disease and lupus and was awarded an MD entitled 'A study of hand arthritis in Systemic Lupus Erythematosus from a Clinical, Imaging and Cytokine Perspective' from Queen's University in 2013. She is involved in postgraduate medical education and holds a Training Programme Director role within the Northern Ireland Deanery and completed a Masters in Clinical Education in June 2022. She is a member of the Irish Society of Rheumatology Board. She is a musculoskeletal ultrasound tutor and regularly teaches regionally and nationally.

## Professor Justin Bishop

Justin Bishop completed his pathology training at The Johns Hopkins University in Baltimore, Maryland, USA. Dr Bishop stayed at Johns Hopkins surgical pathology faculty until joining the Faculty of UT Southwestern Medical Center where he is Professor, Chief of Anatomic Pathology, and Jane B. and Edwin P. Jenevein M.D. Distinguished Chair in Pathology. Dr Bishop has given numerous lectures and courses nationally and internationally.He has published extensively in the field of head and neck/ endocrine pathology, with more than 300 articles.Dr Bishop has also co-authored or edited 11 books and numerous book chapters including the American Registry of Pathology (formerly Armed Forces Institute of Pathology) fascicle on salivary gland tumours and the WHO Classification of Head and Neck Tumours.Dr Bishop is the editor-in-chief for Seminars in Diagnostic Pathology and associate editor for Modern Pathology and JAMA Otolaryngology-Head and Neck Surgery.



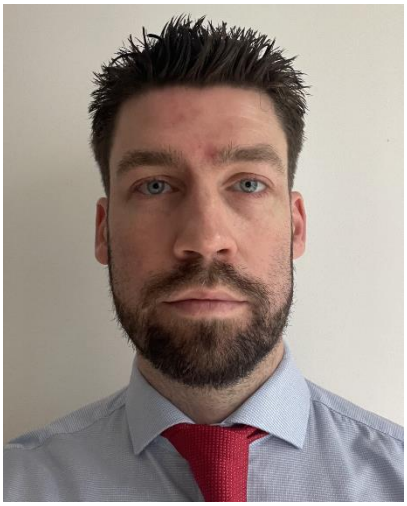


## Dr Kris Holte

Kris Holte graduated with an honours degree in medicine from Queens University, Belfast. He completed training in dermatology in Belfast, immediately followed by general histopathology training in Edinburgh (including a year of subspecialist dermatopathology). Dr Holte has written national dermatopathology guidelines, contributed chapters to books in both dermatology and histopathology. He is a recipient of the Wilson-Jones Cup in dermatopathology, which is awarded each year to the best plenary presentation in dermatopathology at the annual meeting of the British Association of Dermatologists. He was appointed as a consultant dermatopathologist in 2022 to the Belfast Health & Social Care Trust and has recently started working again as a dermatologist. Dr Holte has a keen interest in both inflammatory dermatides and cutaneous neoplasms.

# Dr Clare McGalie

Clare McGalie has been a Consultant Cellular Pathologist for 15 years and has a special interest in dermatopathology. She works in the Southern Health and Social Care Trust where she is also Clinical Director for Laboratory Services. In 2017, while she was Chairperson of the Cellular Pathology Specialty Forum of the NI Pathology Network, she was involved in the Digital Pathology Project at its inception and was subsequently nominated as Senior Responsible Officer for the project. Through her role as Clinical Director in the Southern Trust, she is a member of the NI Pathology Network Board.



# Dr Peter Molony

Peter Molony graduated from the School of Medicine, Trinity College Dublin, in 2010 (MB BCh BAO) and after being awarded his medical membership of the Royal College of Physician, Ireland (RCPI) he embarked on a career in Histopathology. He completed his histopathology training in 2020 and went on to do a one year Haematopathology Fellowship with the University of Toronto, Faculty of Medicine at Toronto General Hospital. He returned to Ireland in 2021 and undertook a one-year Head and Neck Pathology Fellowship with the Faculty of Pathology, RCPI and has been practising as a Consultant Histopathologist, subspecialising in the fields of Haematopathology and Head and Neck Pathology at St. James's Hospital, Dublin, since July 2022.

# Dr Michelle Moore

Michelle Moore is a consultant cellular pathologist at the Royal Victoria Hospital, Belfast. Her areas of subspecialist interest are haematopathology and gastrointestinal and hepatopancreaticobiliary pathology. Dr Moore conducted an academic fellowship in GI/ HPB pathology at Moffitt Cancer Centre in Tampa, Florida in 2019 and has been co-author on 15 peer-reviewed publications and review articles across all areas of specialist interest, and is a peer reviewer for the Journal of Clinical Pathology. Dr Moore sits on the Scientific Advisory Board for a Data Commons for patients with steatotic liver disease and is on the research subcommittee for the UK Liver Pathology Group. She has been an invited speaker at the European Society of Pathology, blending her subspecialist interests on the topic of mast cell and histiocytic disorders of the GI tract. Within Northern Ireland, Dr Moore currently leads the laboratory-based meeting for lymphoid neoplasms occurring in the bone marrow.

# Dr Kirsty Taylor

Kirsty Taylor is a consultant medical oncologist treating head and neck, lung and genitourinary malignancies at the Northern Ireland Cancer Centre. She completed her medical training at Queen's University of Belfast, oncology training at the NICC and subsequently a clinical research fellowship in drug development at the Princess Margaret Cancer Centre, Toronto, with a focus on early phase research and H&N cancers. Her research was patient-centred and focused on understanding responses to systemic therapies in patients with squamous cell malignancies. Kirsty is the NICC H&N cancer systemic trials lead and is the principal investigator on a number of studies within the department, aiming to improve options and outcomes for patients, including those with head and neck cancers.

# Dr Amanda Willis

Amanda Willis is a Senior Clinical Lecturer & Consultant in Oral Medicine at Queen's University of Belfast and is Associate Director for Years 1 & 2 of the BDS programme. Graduating in 2002, she spent several years in general & community dentistry before becoming a clinical teaching fellow in Restorative Dentistry/ Oral Medicine. She was appointed to a specialty training post in Oral Medicine in London and awarded FDS(OM) RCPSG in 2016. Dr Willis is service improvement lead for Oral Medicine in Belfast Health and Social Care Trust and Training Programme Director for Oral Medicine in Northern Ireland, examines MFD and FFD (OM) RCSI and ISFE (RCPSG) and is currently Secretary of the British and Irish Society for Oral Medicine. In 2020, she was awarded FHEA and in 2023 SFHEA. Dr Willis lectures nationally and internationally on Oral Medicine and has published extensively on dental education, oral infection and facial pain.

THE BRITISH SOCIETY FOR ORAL AND MAXILLOFACIAL PATHOLOGY

BSOMP

# British Society for Oral & Maxillofacial Pathology Annual Scientific Meeting
# The Rita Duffy Suite
# The Merchant Hotel
# Belfast
# (24th) 25th & 26th April 2024

## Programme

**Day 0 - Wednesday 24th April**

14:30 - 16:30 The Brian Ballard Room
Oral & Maxillofacial Pathology Trainees' Teaching Session
Prof Justin Bishop presents…

A selection of cases to be discussed: remote access to digital images cases provided to trainee Oral & Maxillofacial Pathologists registered before 31 March 2024

NB: This session is reserved for Oral & Maxillofacial Trainees

14:30 – 16:30 The Alan Quigley Room
BSOMP Council Meeting

17:30 - 19.30
Walking tour of Belfast City Centre
Belfast Walking Tours
Meet/ Starting point at Merchant Hotel

Sponsored by:

Pathogenesis

**Day 1 - Thursday 25th April**

08:00 - 09:00: Registration
Posters to be displayed

## Session 1: Science, Research and Development

09:00 - 10:30
Free papers
Panel chairs: Professor Jacqueline James & Dr Stephanie Craig, Precision Medicine Centre, Queen's University of Belfast

10:30 - 11:00: Tea and coffee

## Session 2: Pathology Updates Session

11:00 - 12:00
Newly Defined and Recently Refined Salivary Gland Tumors
Prof Justin Bishop, Faculty of UT Southwestern Medical Center

12:00 - 13:00
The Wonderful World of Schnoz: An Update on Sinonasal Tract Pathology
Prof Justin Bishop, Faculty of UT Southwestern Medical Center

13:00 - 14:00: Lunch & Poster Viewing

## Session 3: Diagnostic Slide Seminar

14:00 - 16:00
Lymphoid lesions of the Oral, Maxillofacial, Head & Neck Regions
Panel: Dr Michelle Moore, Dr Peter Molony, Prof. Ali Khurram

16:30 -17:30
Annual General Meeting – BSOMP Members

19:00 for 19:30
Drinks reception and conference dinner
Deane's @ Queen's, 1 College Gardens, Belfast BT9 6BQ

Bus transfer from Merchant Hotel leaving at 18:45

Pathogenesis

**Day 2 - Friday 26th April**

08:30 - 09:00: Registration

## Session 4: Pathology in Practice

09:00 - 09:40
Implementing the Northern Ireland Digital Pathology Platform: the good, the bad and the recommendations
Dr Clare McGalie, Consultant Cellular Pathologist, Southern Health & Social Care Trust

09:40 - 10:20
Head & Neck Manifestations in Rheumatological Diseases: how the pathologist can help
Dr Elizabeth Ball, Consultant Rheumatologist, Musgrave Park Hospital/ Belfast City Hospital

10:20 - 10:50: Tea and coffee

10:50 - 11:30
Oral Epithelial Dysplasia: the oral medicine consultant's perspective
Dr Amanda Willis, Senior Clinical Lecturer & Consultant in Oral Medicine at Queen's University of Belfast

11:30 - 12:10
Clinical application of PDL1 testing in Head & Neck cancer
Dr Kirsty Taylor, Medical Oncologist, Northern Ireland Cancer Centre

12:10 - 12:50
Unusual Entities and Pitfalls in Skin from the Head & Neck
Dr Kris Holte, Consultant Pathologist and Dermatologist, Belfast Health & Social Care Trust

12:50 - 13:30: Lunch
Posters to be removed

## Session 5: External Quality Assurance Review

13:30 - 15:30
Head & Neck Histopathology EQA Review for Circulation T
Convenors: Dr Tim Bates, Dr Adam Jones, Dr Miranda Pring

Closing remarks

## Session 1: Science, Research and Development
## Free papers - Running order, titles and authors with affiliations

### 9:10: Correlating the mechanics and biology of the dental pulp in caries and health.

Laura Whitehouse[1], Thuy Do[1], Jing Kang[1], Neil Thomson[1,2] ([1]School of Dentistry, University of Leeds & [2]School of Physics and Astronomy, University of Leeds)

### 9:20: A head-to-head comparison of four systems for oral epithelial dysplasia grading and prognostication.

Paul Hankinson, Mollie Clark, Hannah Walsh, Ali Khurram (Unit of Oral and Maxillofacial Pathology, School of Clinical Dentistry, Sheffield)

### 9:30: A comparison of adequacy in fine needle aspiration cytology (FNAC) and core biopsy samples in lesions of the head and neck.

Morna MacNeill, Linsey Paterson, Andrew Wood (Pathology Department, Royal Infirmary of Edinburgh)

### 9:40: Molecular testing of melanocytic lesions in the head and neck - a short case series

Karwan Moutasim, Jeff Theaker (Histopathology, University Hospital Southampton)

### 9:50: LymphoSight: an artificial intelligence QuPath companion application for the automated detection of tertiary lymphoid structures in oropharyngeal cancers and oral epithelial dysplasia.

Kristopher McCombe[1], Stephanie Craig[1], Richard Gault[2], Jacqueline James[1,3] ([1]Precision Medicine Centre and [2]School of Electronics, Electrical Engineering & Computer Science, Queen's University of Belfast; [3]Northern Ireland Biobank, Belfast Health & Social Care Trust, Belfast)

### 10:00: Oral photobiomodulation for the prevention and treatment of oral mucositis in hematological oncology patients.

Mirabelli Luca, Bianco Edoardo, Maddalone Marcello (School of Medicine and Surgery, University of Milano Bicocca, Milan)

### 10:10: Digital analysis of tumour infiltrating lymphocytes in oropharyngeal squamous cell carcinomas.

Mohammad Albraikat[1,2], Kristopher McCombe[1], Stephanie Craig[1], Jacqueline James[1,3] ([1]Precision Medicine Centre, Queen's University Belfast, [2]Alzarqa University, Jordan; [3]Northern Ireland Biobank, Belfast Health & Social Care Trust, Belfast)

# Free Paper Abstracts

**FP01: Correlating the mechanics and biology of the dental pulp in caries and health.**

Laura Whitehouse[1], Thuy Do[1], Jing Kang[1], Neil Thomson[1,2] ([1]School of Dentistry, University of Leeds & [2]School of Physics and Astronomy, University of Leeds)

**Background**- We currently do not know the elastic modulus of the dental pulp at the nano and level and how this may be influenced by pulpal biology. Dental pulp stem cells (DPSCs) are mechanosensitive cells and the elastic modulus of the pulp requires exploration to better understand DSPCs in reparative dentine formation.
**Aims-** This study explores the dental pulp's elastic modulus and links it to transcriptional and histomorphometric data in carious and sound teeth.
**Methods**- Atomic force microscopy (AFM) for elastic modulus, histomorphometric analysis of pulpal fibres and next generation RNA sequencing were completed to explore changes in the pulpal biology and nano level mechanics in carious and sound teeth.
**Results**- AFM revealed a gradient of elastic modulus from the coronal and apical aspects of the dental pulp (highest) to the core (lowest), this linked with a reduction of volume, width and organisation of collagen fibres. More homogeneity in the elastic modulus was identified in carious pulps. Sound teeth had a statistically higher elastic modulus at the coronal pulp. No change in collagen gene expression was identified. More genes were upregulated in carious teeth than sound, with upregulation of functions relating to neurogenesis, inflammation and immune response, which may link to the reduction of collagen seen in carious teeth as a result of inflammatory changes.
**Conclusion**- The findings of this study show that the different areas of the pulp are acting as distinct biological compartments, with changes in the carious pulp linked to inflammation and regeneration.

**FP02: A head-to-head comparison of four systems for oral epithelial dysplasia grading and prognostication.**

Paul Hankinson, Mollie Clark, Hannah Walsh, Ali Khurram (Unit of Oral and Maxillofacial Pathology, School of Clinical Dentistry, Sheffield)

**Background**- The gold standard for oral epithelial dysplasia (OED) grading is the World Health Organisation (WHO) system, which assigns risk based on the thickness of epithelium affected by OED. Feature-based grading systems (irrespective of thickness involved) have been proposed including the binary, 2-point and 6-point systems. We assess these four grading systems on a cohort of 137 patients.
**Methods-** Data was collected on malignant transformation outcomes over a 5-year follow up period. Archived slides for each case were accessed and reviewed by three clinicians independently. WHO, binary, 2-point and 6-point grades/scores were assigned to each case. Light's kappa coefficient (LKC) was used to calculate inter-observer reliability. Kaplan-Meier and Cox regression survival analyses were used to assess each grading system's correlation with malignant transformation.
**Results**- The WHO, Binary, 2-point and 6-point grading systems had a LKC of 0.42, 0.31, 0.17 and 0.41 respectively. Kaplan-Meier and Cox regression survival analyses showed stratification of malignant transformation risk by grade in all systems except the 2-point system. The risk of malignant transformation was not significantly raised for moderate OED (WHO), while severe OED had a hazard ratio (HR) of 13.7 ($p = 0.018$). The high-risk category for the binary and 6-point systems had HR of 5.8 ($p = 0.038$) and 8.7 ($p = 0.047$) respectively.
**Conclusion**- The 6-point grading provided superior risk stratification to WHO, binary and 2-point grading. Despite limited practical experience of its use, it has comparable inter-observer reliability with the widely used WHO grading system.

**FP03: A comparison of adequacy in fine needle aspiration cytology (FNAC) and core biopsy samples in lesions of the head and neck.**

Morna MacNeill, Linsey Paterson, Andrew Wood (Pathology Department, Royal Infirmary of Edinburgh)

**Background**- In our hospital core biopsy and FNAC are both used to sample lesions in the head and neck. Anecdotally, core biopsy has a higher rate of diagnostic accuracy and a lower rate of insufficient reports in both lymph node and salivary gland sampling.
**Methods**- We retrieved from our lab system cases reported in 2023 by Consultants in the Head and Neck pathology team coded as parotid gland, submandibular gland, salivary gland and lymph node. Reports were reviewed to ascertain the percentage of cases which received a definitive diagnosis. Data was also collected regarding repeat sampling and adequacy of subsequent samples.
**Results**- Core biopsy had a higher accuracy rate than fine needle aspiration. Core biopsy samples were less likely to be repeated than FNAC. In cases where the test was repeated core biopsy was more likely to provide a definitive result than FNAC.
**Conclusion**- In our hospital core biopsy is more likely to provide a definitive diagnostic result when compared to FNAC. A significant proportion of FNAC samples are insufficient and need to be repeated. The data indicates the diagnostic value of core biopsies, where clinically appropriate in diagnosing lesions in the head and neck.

**FP04: LymphoSight: an artificial intelligence QuPath companion application for the automated detection of tertiary lymphoid structures in oropharyngeal cancers and oral epithelial dysplasia.**

Kristopher McCombe[1], Stephanie Craig[1], Richard Gault[2], Jacqueline James[1,3] ([1]Precision Medicine Centre and [2]School of Electronics, Electrical Engineering & Computer Science, Queen's University of Belfast; [3]Northern Ireland Biobank, Belfast Health & Social Care Trust, Belfast)

**Background-** Tertiary lymphoid structures (TLS) are ectopic immune structures that develop during chronic inflammation. Research suggests the presence of TLS can be prognostic in multiple cancers including oropharyngeal cancer and may be of use in pre-malignant lesions. Locating these structures in large numbers of histological images may be onerous. This study describes the creation of an artificial Intelligence (AI) application, LymphoSight, for the annotation of TLS on histology images.
**Methods**- 1805 images from multiple cancers including oropharyngeal cancer were imported to QuPath and annotated for TLS. Images of TLS were split into training, test and validation sets at a 70-15-15 ratio for model training. The model was evaluated using Dice Score, Pearson's correlation, and TLS classification. Further validation was undertaken on an oral epithelial dysplasia (OED) cohort.
**Results**- The model performed well in annotation quality (Dice = 0.75), TLS count (Pearson Correlation = 0.81) and patient classification (accuracy = 91.5%) in the validation cohort. In the OED cohort a Peason's correlation of 0.988, Dice of 0.883 and classification accuracy of 91.3% was achieved.
**Conclusions**- The presence of TLS is prognostic across cancer types including those from the oropharynx. Advances in digital pathology and AI have facilitated the development of this automated open-source code-free application which can be applied directly to QuPath projects.

**FP05: Molecular testing of melanocytic lesions in the head and neck - a short case series.**
Karwan Moutasim, Jeff Theaker (Histopathology, University Hospital Southampton)

**Background:** Melanocytic lesions are one of the complex areas of cutaneous histopathology, often representing a source of medicolegal worry for the pathologist. Diagnosis has traditionally relied upon histopathological assessment, together with ancillary immunohistochemistry. In recent years, molecular testing by next generation sequencing (NGS) as well as surrogate immunohistochemical markers for kinase fusions has been helpful in classifying and risk stratifying melanocytic naevi, as well as distinguishing atypical melanocytic proliferations and melanocytomas from malignant melanoma.
**Case series:** In this short case series, I will present a number of melanocytic lesions affecting the head and neck region from our routine as well as our referral practice where molecular testing (including NGS) has provided useful information in classification and diagnosis. The series focuses on BAP1-inactivated naevi, Spitzoid lesions and melanocytomas.
**Conclusions:** Next generation sequencing (NGS) as well as ancillary immunohistochemistry for new markers (including PRAME, BRAF V600E, ALK, ROS and others) can be useful in specific cases where there is diagnostic uncertainty of melanocytic lesions.

**FP06: Oral photobiomodulation for the prevention and treatment of oral mucositis in hematological oncology patients.**
Mirabelli Luca, Bianco Edoardo, Maddalone Marcello (School of Medicine and Surgery, University of Milano Bicocca, Milan)

**Background**: the onset of oral mucositis in pediatric patients suffering from leukemia represent a serious pathology with high incidence rate. This complication is severely debilitating and various treatment options have been proposed, including Cryotherapy, Palifermin and Oral Photobiomodulation.
**Methods:** 9 patients candidates for bone marrow transplant were evaluated and divided into 2 groups, the Prevention group in which were included 2 patients without signs of oral mucositis and the Treatment group, in which were included 7 patients that already showed signs of oral mucositis. All patients were treated with photobiomodulation in the red light spectrum (620-750 nm). For the Prevention group, laser applications were carried out in 20 areas of the mucosa of the oral cavity, for 10 seconds, for a total of 3/5 sessions per week; in the Treatment group laser applications were performed directly on the sites with mucositis for 20 seconds and on the remaining sites for 10 seconds, for a total of 3/5 sessions per week, until mucositis resolution.
**Results:** in the Prevention group there was no onset of oral mucositis; in the Treatment group there was a drastic reduction of persistent pain, reducing or eliminating the need of analgesics; furthermore, the clinical presentation of the lesions changed completely.
**Conclusions**: Oral Photobiomodulation seems to be able to prevent the onset and reduce the severity of oral mucositis, also allowing the treatment of the full-blown phases with few applications for short periods of time with a drastic improvement and often a complete resolution of the oral lesions.

**FP07: Digital analysis of tumour infiltrating lymphocytes in oropharyngeal squamous cell carcinomas.**

Mohammad Albraikat[1,2], Kristopher McCombe[1], Stephanie Craig[1], Jacqueline James[1,3] ([1]Precision Medicine Centre, Queen's University Belfast, [2]Alzarqa University, Jordan; [3]Northern Ireland Biobank, Belfast Health & Social Care Trust, Belfast)

**Background**: Oropharyngeal Squamous Cell Carcinoma (OPSCC), a head and neck cancer subtype with both viral and environmental aetiologies, benefits from patient stratification using tumour infiltrating lymphocytes (TILs) to predict prognosis. This study presents a fully explainable TILs classification algorithm that can be used to accurately quantify TILs in OPSCC.
**Methods**: Analysis was undertaken using digital H&E-stained whole slide images (WSI), and matched tissue microarrays (TMA) from a total of 242 patients. TIL quantification was carried out using custom scripts in the open-source image analysis software QuPath. The algorithm was validated against manual counts in regions of interest from a subset of 20 patient samples.
**Results:** WSI and TMA stromal TILs scores (n=242) showed a moderate correlation ($r_s$= 0.54, $p<0.05$). The model also demonstrated 88% accuracy in TIL classification across 27,000 cells in 20/242 WSIs. HPV-related OPSCC exhibited higher stromal TIL scores than HPV-negative cases, however, irrespective of HPV status multivariable analysis demonstrated a 2-fold risk of mortality (HR: 2.42, CI:1.31-4.44, $p<0.005$) in patients with low stromal TILs.
**Conclusions**: This study presents an explainable, validated method for scoring TILs using engineered features and custom scripts and showcases how TMAs are representative of WSIs in OPSCC.

# Poster Abstracts

**P01: Salivary Mucinous Adenocarcinoma: A case report and review of the literature**
Harjeet Singh Wilkhu[1], Daniel Brierley[2], Iain Varley[1] ([1]Oral and Maxillofacial Surgery,[2]Oral and Maxillofacial Pathology, University of Sheffield)

**Background:** Mucinous adenocarcinoma (MAC) is a malignancy well described in sites such as the appendix, breast, and colon, characterised by the production of mucin. In extremely rare cases, it can arise from the salivary gland. The 5th edition of the World Health organisation Classification of Head and Neck Tumours identifies recurrent AKT1 E17K mutations as an underlying characteristic of salivary MAC and recognises it as a diverse entity with the following subtypes: papillary, colloid, signet ring, mixed.
**Case Report**: A 74 year old man was referred to the Oral and Maxillofacial Surgery Department for a lump on the palate. Imaging showed a 12mm area of pressure erosion of the palate with a 22mm associated soft tissue mass and bilateral and large neck lymph nodes. The patient's previous medical history included a pT2N1a bowel cancer treated with a right hemicolectomy 3 years previously. Initial biopsy of the palatal lesion showed features of high-grade adenocarcinoma but with uncertain origin. The patient underwent right maxillectomy and bilateral neck dissection. Final histology shows features of salivary mucinous adenocarcinoma. All the relevant histopathological and immunohistochemical staining will be discussed.
**Conclusions**: Salivary MAC are an extremely uncommon tumour, particularly in the head and neck region. We will present a case of MAC of salivary gland origin to add to the knowledge of this rare tumour.

**P02: Case report: Odontogenic Myxoma with diffuse calcifications**
Christopher Mulvey[1], Peter Molony[2], Bijal Shah[2], Esther O'Regan[1], Róisín O'Connor[1] ([1]Histopathology, Dublin Dental University Hospital; Trinity College Dublin & St. James's Hospital Dublin, [2]Histopathology St. James's Hospital Dublin)

**Background:** This is a case report of an odontogenic myxoma with diffuse calcifications, of which there are less than 5 reported within the literature. Rare in their incidence, odontogenic myxomas are benign mesenchymal tumours, which occur most frequently in the fourth to sixth decade of life and require a substantial enucleation margin due to their high recurrence rate and permeative nature.
**Case report:** A 47-year old man had an incidental finding of a swelling in his right mandible. He reported no pain or symptoms of any other nature. The patient's past medical history includes irritable bowel syndrome and nil else of note. He has no surgical history. He does not smoke and drinks six units of alcohol per week. The lesion was biopsied, confirming an odontogenic myxoma and imaging was performed. The radiological appearance of the lesion showed a honeycomb multilocular radiolucency with some peripheral cortication and relatively minor expansion. Enucleation was performed and the patient recovered well. Histopathology showed a loose myxoid stroma with bland spindled/stellate cells, with abundant admixed mineralised material resembling osteocementum, in fragments, shards and spherical forms. No pleomorphism, necrosis, or mitoses were identified. The unusual appearance of this specimen warranted second opinion, which confirmed the initial diagnosis

of odontogenic myxoma with calcifications. The diagnosis was further supported by the presence of a myxoid matrix highlighted by alcian blue stain.
**Conclusion:** Rare previous cases of odontogenic myxoma have been reported despite the World Health Organisation defining these neoplasms as mesenchymal odontogenic tumours, which do not produce calcification.

**P03: An unusual case of salivary gland squamous cell carcinoma arising from carcinoma ex pleomorphic adenoma**

Guy Betts, Noreen Akhtar, Charlotte Wilson, Stephanie Edwards (Histopathology, Manchester University Hospitals NHS Trust)

**Background:** Squamous cell carcinoma of the parotid salivary gland is a rare entity with diagnosis requiring exclusion of metastatic disease although presentation as part of the spectrum of carcinoma ex pleomorphic adenoma is less well known. We present an unusual case of carcinoma ex pleomorphic adenoma with morphological and immunohistochemical evidence of squamous cell carcinoma.
**Case Report:** An 82 year old lady, with a prior history of metaplastic breast carcinoma presented with an eight year history of a right parotid mass with recent rapid increase in size. Initial cytology showed malignancy with evidence of squamous morphology. Radical excision revealed an 87 mm tumour largely (90%) composed of infiltrative keratinising squamous cell carcinoma. Extensive sampling identified focal areas of salivary duct carcinoma, positive for androgen receptor, with a sclerotic remnant of pleomorphic adenoma.
**Conclusions:** This was a challenging case due to the widespread squamous cell differentiation posing the differential diagnosis of metastatic disease. Extensive sampling identified focal areas of salivary duct carcinoma indicating progression from a carcinoma ex pleomorphic adenoma. This report highlights the rarity of primary squamous cell carcinoma of the parotid gland and should prompt investigators to consider other possibilities prior to making the diagnosis.

**P04: Next generation sequencing testing in a head and neck cancer centre: a service evaluation.**

Karwan Moutasim, Nicola Pyatt (Histopathology, University Hospital Southampton)

**Background**- Targeted next generation sequencing (NGS) DNA and RNA panels from formalin-fixed, paraffin embedded (FFPE) tissue are now routinely used in histopathlogy services for diagnostic, therapeutic and prognostic purposes. These are performed in a group of genomic laboratory hubs (GLH) in the UK. NGS can be a valuable adjunct for head and neck pathologists in some diagnostic settings (particularly in salivary, thyroid and sinonasal pathology). The principal aims of this service evaluation were to examine the clinicopathological scenarios where NGS was requested; in addition to turnaround times (TATs) for report receipt from the GLH, quality control (QC) failure rates and overall consequences (both diagnostic and therapeutic) from a range of head and neck specimens submitted for NGS testing in a defined time period at University Hospital Southampton.
**Methods**- Cases submitted for FFPE NGS testing to the GLH were audited from January 2023 to January 2024. Results were accessed using the laboratory information management system (LIMS), coupled with electronic patient records (EPR). Where appropriate,

histopathology review was also performed.
**Results:** More than 100 cases had been submitted for NGS, the majority of which had been thyroid and salivary gland tumours, as well as sinonasal tumours and bone/soft tissue lesions. The QC failure rate was 38%. The average turnaround time (TAT) for receipt of reports from the genomic hub was 15 days.
**Conclusions**: Whilst NGS panels from FFPE tissue are a welcome addition to the diagnostic and therapeutic repertoire in the UK, TATs and QC failure rates represent areas for improvement.

*The following posters are eligible for the Specialty Registrar/ Early Clinical Researcher Clinical prize*

**P05: Fibromyxoid soft tissue tumour with PLAG1 fusion. Report of two cases in the Head and Neck area**

Paris Tamiolakis[1], Bipin Mathew[2] ([1]Oral and Maxillofacial Pathology, [2]Dermatopathologist , Leeds Teaching Hospitals NHS Trust)

**Background:** Fibromyxoid soft tissue tumour with PLAG1 fusion is a recently described entity presenting in the paediatric population. It is characterised by well-circumscribed proliferation of bland spindle cells embedded in a fibrous to myxoid stroma without evidence of adipocytic differentiation. On immunohistochemistry the cells stain positive with Desmin and CD34 and occasionally with S100. Fusions of PLAG-1 gene with various partners and accompanying positive PLAG1 stain on immunohistochemistry are seen.
**Case Report:** The first case was a lower lip nodule in a 7-year-old male patient whilst the second one was a clinically described mass in the nasal vestibule of a 57-year-old male patient. On microscopy both lesions were located in the superficial connective tissue stroma, were well-circumscribed and comprised of spindle to stellate cells embedded in a myxoid to focally fibromyxoid stroma. In the first case the lesional cells stained positive on immunohistochemistry with CD34 and Desmin and a COL1A1::PLAG1 fusion was identified on Next Generation Sequencing. The lesional cells of the second case stained positive on immunohistochemistry with CD34, Desmin and S100 whilst a TRPS1:: PLAG1 fusion was identified.
**Conclusion:** Fibromyxoid soft tissue tumour with PLAG1 fusion has been described in paediatric patients. However, it should be included in the differential diagnosis of myxoid neoplasms in the Head and Neck of both paediatric and adult patients.

**P06: Non-Ossifying Fibroma of the Mandible: A Case Report and Review of the Literature**

Mollie Clark[1], Daniel Brierley[1], Chi-Hwa Chan[2], David Hughes[3], Omar Shadid[2] ([1]Oral and Maxillofacial Pathology, University of Sheffield, [2]Oral and Maxillofacial Surgery, Bedford Hospital, [3]Histopathology, Royal Hallamshire Hospital, Sheffield)

**Background:** Whilst common at the metaphysis of the long bones in paediatric patients, NOFs are rarely observed in the jaws. These benign fibrosseous lesions are often asymptomatic and may be an incidental radiological finding. Most NOFs of the limbs presenting in children will not require any treatment, and spontaneously resolve when growth ceases. However, regarding mandibular lesions, the majority of historical cases have been successfully treated with curettage and do not recur. Due to their scarcity, the outcomes for untreated NOFs of the gnathic bones are not reliably known.
The radiological appearance of NOFs may be indistinguishable from other, more destructive, intraosseous pathological entities. A good understanding of characteristics and behaviour of the gnathic NOF is essential to ensure that the most appropriate treatment modality is adopted.
**Case Report:** This case report describes a large non-ossifying fibroma (NOF) of the mandible presenting in a 24-year-old male patient. This was diagnosed through radiological and histopathological assessment. It remains under observation without surgical intervention, despite its large size, as the extensive surgery to remove it is not currently justifiable.
**Conclusions:** We discuss the clinical, radiological and histopathological findings for this case. A thorough literature review of previous reports of this rare entity reveals the typical characteristics and behaviour of this lesion.

**P07: Pleomorphic adenoma with canalicular adenoma-like morphology. Presentation of three cases**

Paris Tamiolakis[1], Gordon Hutchins[2] ([1]Oral and Maxillofacial Pathology, [2]Histopathology, Leeds Teaching Hospitals NHS Trust)

**Background:** Pleomorphic adenoma (PA) is the most common salivary gland neoplasm. The histologic characteristic of PA is its morphological diversity derived from an admixture of epithelial ductal and myoepithelial cells as well as stromal elements with the proportion of each one of them varying significantly between different lesions as well as within different areas of the same lesion. Recently, a new morphologic variant of PA has been described which is characterised by elongated or columnar cells arranged as bilayered to multilayered communicating and branching strands and trabeculae resembling canalicular adenoma. In such tumours, 'classic' PA with myxochondroid stroma might not be present or prominent within the lesion. Most PAs with this morphology harbour a HMGA2::WIF1 fusion. Here we present three cases of PA with canalicular adenoma-like morphology recently diagnosed in our Department whilst providing histologic clues to differentiate from other salivary gland neoplasms.
**Case report:** All three cases occurred in the parotid gland. Two manifested in female patients (30 and 85 years old) and the third in a 63 year old male. The predominant histologic pattern was anastomosing cords and trabeculae resembling canalicular adenoma of the minor salivary glands. RNA fusion panel showed HMGA2::WIF1 fusion in two of those cases but failed to identify a fusion in the third.
**Conclusions:** Pathologists should be aware of this newly-described morphological variant of PA in order to facilitate accurate diagnosis and avoid diagnostic confusion with other salivary gland neoplasms.

**P08: The Bigger Picture**

Fatima Elmahgoub[1], Nikolas Kalavrezos[2], Deepti Sinha[2], Xin Ying Kowa[3], Simon Morley[3], Amrita Jay[1] ([1]Oral & Maxillofacial Pathology, [2]Oral & Maxillofacial Surgery, [3]Radiology, University College London)

**Background:** A 38 year old male presented with a 70mm tumour involving the left submandibular region. The diagnosis on core biopsy was a myxoid spindle cell sarcoma NOS. This was resected with overlying skin, parotid tail, neck dissection and left mandibular rim. The neoplasm had features of sarcoma/carcinosarcoma ex pleomorphic adenoma.
**Case Report:** Salivary carcinosarcoma is a rare neoplasm with a poorly understood pathogenesis. It may occur de novo or from a pre-existing pleomorphic adenoma. The diagnostic biopsy was described as a cellular spindle cell tumour lying within a myxoid stroma, with occasional cells expressing MNF116. S100, SMA, Melan A, and desmin were negative. The resected tumour consisted of lobulated mesenchymal-type tissue with resemblance to some myxoid soft tissue sarcomas. However, focally a pleomorphic adenoma with squamous metaplasia, and minimal epithelial atypia was identified. The myxochondroid component displayed a transition to hypercellular regions with marked cytological atypia and focal necrosis. The immunophenotype was of mixed epithelial and mesenchymal-type and overall features were regarded as a sarcoma/carcinosarcoma ex pleomorphic adenoma. Following RNA based NGS testing, a novel gene fusion; PLAG1::MEG3 was detected.
**Conclusion:** Salivary carcinosarcoma is extremely rare and current views indicate the sarcomatous element is derived from the epithelial component and therefore best regarded as sarcomatoid carcinomas. Lessons learned: (1) the need for image guided tumour sampling for identification of heterogeneous components in large tumours (2) value of clinical and imaging findings such as tumour location & extent (3) Utility of molecular diagnostics such as PLAG1 in establishing the diagnosis.

**P09: A challenging diagnosis of a rare malignant intraosseous tumour: Case report**
Wei Ning Saik[1], Nicholas Kalavrezos[2], Deepti Sinha[2], Simon Morley[3], Oluyori Adegun[1], Amrita Jay[1] ([1]Oral & Maxillofacial Pathology, [2]Oral & Maxillofacial Surgery, [3]Radiology, University College London Hospitals NHS Foundation Trust)

**Background:** An unusual case of odontogenic sarcoma (OS) in the posterior mandible is presented. OS is an aggressive malignant mixed odontogenic neoplasm in which the ectomesenchymal component displays malignant features. OS usually transforms from a pre-existing benign tumour, ameloblastic fibroma being the most common precursor, with BFAF p.V600E gene mutation detected. Literature reports an overall recurrence rate of 35% following surgical resection, whilst distant metastasis is uncommon.
**Case report:** A 34-year-old man presented with a rapidly expanding neoplasm in the left posterior mandible. The biopsy was reported at the referring hospital as a high-grade spindle cell sarcoma with possible myofibroblastic differentiation. The patient had a left segmental mandibulectomy followed by chemotherapy. Histology featured hypercellular sheets and fascicles of undifferentiated round, ovoid and spindle-shaped cells centred on the tooth root apices. Cortical perforation and extension into surrounding soft tissues were noted. The intramedullary tumour was surrounded by a zone of sparsely cellular hyaline eosinophilic area. Here, there were many odontogenic epithelial nests and cords with mild cytological atypia.
**Conclusions:** The final diagnosis was achieved by assessing the entire resected specimen, identifying the odontogenic epithelial component, correlation with clinical & imaging features and complemented by molecular tools.

## The following posters are eligible for the Dental Core Trainee prize

**P10: A Rare Case of Inflammatory Myofibroblastic Tumour of the Tongue.**
Brian Maloney[1], Veronica Fisher[1], Esther O'Regan[2] ([1]Oral Surgery, Dublin Dental University Hospital,[2]Oral Pathology, St. James' Hospital, Dublin, Ireland)

**Background:** Inflammatory myofibroblastic tumour (IMT) is a rare mesenchymal tumour, with unique clinical, pathological, and molecular characteristics. First described by Birch-Hirschfield in 1905, IMTs were originally thought to occur most commonly in young people and most often in the abdominal soft tissues and lungs, but it is now known that IMTs occur at any age and at a wide range of anatomical sites. IMT rarely occurs in the oral cavity. Histologically, IMT consists of myofibroblastic and fibroblastic spindle cells along with variable numbers of inflammatory cells. In 1999 it was discovered that the ALK (anaplastic lymphoma kinase) gene on chromosome 2p23 was involved in the pathogenesis of IMT. Approximately 50% to 70% of patients with IMT have ALK rearrangements.
**Case Report:** We present a case of IMT arising on the dorsum tongue of an 11-year-old boy. Immunohistochemistry demonstrated ALK-1 positivity, however FISH testing was reported as negative for ALK translocation. Next-generation sequencing (NGS) was subsequently employed and a TPM:ALK-1 fusion was identified, confirming the diagnosis of ALK-rearranged IMT.
**Conclusions:** False-negative FISH results can occur for several reasons. In this case, it was likely due to probe hybridisation issues. Ultimately in this case NGS assisted in resolving a discrepancy between IHC and FISH.

**P11: Beckwith-Wiedemann Syndrome with associated macroglossia and its management: A Case Report.**

Zeena Hassoon Al-Sarraf, Raj Mamidela, Brian Swinson (Oral and Maxillofacial Surgery, Altnagelvin Area Hospital, Derry, Northern Ireland)

**Background:** The tongue's growth, reaching full size by the age of 18 years, may vary. Macroglossia, marked by painless enlargement, often indicates underlying issues like Beckwith-Wiedemann Syndrome (BWS). BWS, linked to chromosome 11p15.5 changes, includes diverse features such as abdominal abnormalities, heightened cancer risk, neonatal hypoglycaemia, and distinctive facial characteristics. This case report discusses oral implications and surgical management of BWS-associated macroglossia.
**Case Report:** A 13-year-old female with BWS-associated macroglossia underwent tongue reduction surgery under General Anaesthesia following consultations with Oral and Maxillofacial Surgeons. The surgery involved partial glossectomy using electrosurgery for resection and haemostasis, tongue approximation, and suturing. Post-operatively, acceptable tongue movements were noted, but dysphagia, hypoglycaemia, and severe pain emerged. Comprehensive care, including IV fluids, pain relief, and oral hygiene, improved the patient's condition. A holistic approach involving oral, dietetics, and speech therapy teams contributed to the patient's recovery.
**Conclusion:** With a macroglossia incidence of 0.07 per 1000 live births with BWS, orthodontic and surgical interventions are common, including possible radiotherapy. Surgical intervention becomes necessary with notable symptoms such as excessive tongue movement, speech, or psychological difficulties. This case underscores the importance of follow-up care from interdisciplinary teams for comprehensive recovery and restoration of function and aesthetics.

**P12: Central giant cell granuloma- a case presentation**

Olorunfemi Obe[1], Ali Khurram[2], Mollie Clark[2], Cristina Frezzini[1] ([1]Oral and Maxillofacial Surgery, [2]Oral and Maxillofacial Pathology, Sheffield Teaching Hospital).

**Background:** Central giant cell granuloma (CGCG) is a rare, histologically benign but locally aggressive lesion of osteoclastic origin involving the craniofacial region. It is more often seen in the anterior mandible, frequently crossing the midline. It commonly affects females more than males, with a prevalence between 10 and 30 years. It appears as a multilocular radiolucency with scalloped margins and a honeycomb or soap bubble-like appearance. Histopathologically, CGCG is composed of multinucleated giant cells in a prominent fibrous stroma. We present a case of aggressive CGCG in the maxilla.
**Case presentation:** A 16-year-old female patient was referred by her dentist to the Oral and Maxillofacial Surgery Unit on account of loose teeth and a non-healing socket in the upper right second molar. Examination revealed exophthalmos of the right eye, infraorbital numbness, and buccal expansion of the posterior maxilla. Imaging showed bony destruction of the posterolateral wall of the sinus and orbital floor. The findings led to a differential diagnosis of malignant sinonasal tumour, sinonasal melanoma, and sinonasal adenoid cystic carcinoma. An incisional biopsy revealed instead giant cell lesions, and further investigations were conducted to rule out hyperparathyroidism. The patient maintained normal serum calcium, phosphate, alkaline phosphatase, and PTH levels. Surgical excision, intralesional corticosteroid injection, and calcitonin were used as treatments.
**Conclusion:** The CGCG is a histologically non-malignant but locally invasive lesion affecting mainly the anterior mandible. The documentation of this rare and interesting case occurring in the posterior maxilla contributes to the medical literature.

**P13: Oral Syphilis: Clinico-Pathological Correlations**

Charlotte C Currie, Anne Chambers, Emma Spoor, Neil Robinson, Max Robinson (Oral & Maxillofacial Pathology, Newcastle Upon Tyne Hospitals NHS Foundation Trust)

**Background:** Cases of syphilis are increasing in the UK, there were 8692 cases in 2022, the highest annual number since 1948. We reviewed all cases of oral syphilis over the previous 10 years to identify clinical and histological features that would inform ancillary testing for Treponema pallidum.
**Case Series:** A search for syphilis cases diagnosed in Cellular Pathology identified 26 cases between 2015 and 2024. Of these, 13 were head and neck cases and were reviewed in detail (14 specimens in total). The majority were male patients (62%). The mean age at diagnosis was 37 years-old (range 22-56). Patients presented with either painful oral ulceration (n=8), depapillation of the tongue (n=2), white patches (n=2), lymphadenopathy (n=2) or a palpable mass (n=1). Two patients had generalised skin rashes, and one reported neurological symptoms. Three patients reported concurrent genitourinary symptoms.
Histology showed the following features: a dense plasma cell infiltrate in the superficial lamina propria (n=14), neutrophilic exocytosis (n=13), epithelial hyperplasia (n=11), perivascular inflammation (n=10), ulceration (n=8), perineural inflammation (n=6). Immunohistochemistry for Treponema pallidum demonstrated numerous spirochetes. In the majority of cases (77%) spirochetes were present in the lower one-half of the epithelium. In five cases they were present around small vessels and in one case organisms were identified deep within striated muscle.
**Conclusions:** As cases of syphilis are becoming more prevalent, it is increasingly important that both clinicians and pathologists are aware of the oral manifestations of the disease and consider syphilis in the differential diagnosis of inflammatory oral mucosal lesions.

**P14: Squamoid eccrine ductal carcinoma: a case report and review of the literature.**

Oladunni Ogundana, Amit Dattani, William Allen (Oral and Maxillofacial Surgery, Shrewsbury and Telford Hospital NHS Trust)

**Background:** Squamoid eccrine ductal carcinoma is an uncommon aggressive sweat gland neoplasm with fewer than 50 cases reported in literature to date. Histologically, it presents with a biphasic growth pattern characterised by superficial squamous component and deeper ductal differentiation. This report describes a case on the nose initially diagnosed as squamous cell carcinoma.
**Case Report:** A 77-year-old man presented with an 8-month history of a non-healing lesion on the tip of his nose that scabs and bleeds frequently. His medical history was remarkable for hypertensive heart disease and previous treatment for pleomorphic salivary adenoma of the palate. At initial presentation, an irregular shape, cream-coloured papule measuring 0.5cm by 0.2cm was noted and provisional diagnoses were basal cell carcinoma (BCC) and squamous cell carcinoma (SCC). Punch biopsy confirmed the lesion as SCC, which after wide excision showed positive margins with need for further surgery. Histology of deeper margins revealed typical features of squamoid eccrine ductal carcinoma. Lesion has been completely excised with negative margins, the patient is being followed-up and has so far remained tumour-free.
**Conclusions:** Squamoid eccrine ductal carcinoma is a rare neoplasm and incisional biopsy of superficial lesions may be misdiagnosed as squamous cell carcinoma. Due to its invasive and high local recurrence nature, distinguishing this neoplasm from squamous cell carcinoma is very crucial for appropriate patient management.

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