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I am a Professor and Honorary Consultant in Oral and Maxillofacial Pathology. Prior to that, I worked as a Senior Clinical Lecturer (2016-2022) and as a NIHR Academic Clinical Lecturer/ Honorary Specialist Registrar (2011-2016) at the University of Sheffield. Following a Masters (University of London- 2003) and a PhD (University of Sheffield- 2008), I worked as a Senior House Officer in Oral Medicine/Pathology at Cardiff Dental Hospital (2008) and Sheffield Teaching Hospitals NHS Foundation Trust (2008-09) in addition to two years in Oral and Maxillofacial Surgery (2009-11).

I have a strong interest and am actively involved in research and teaching (undergraduate, postgraduate, clinical) as well as diagnostic oral, maxillofacial and head and neck pathology. I am the founder and Lead of the NEOPATH Research Group working with a team of researchers and clinicians on various aspects of head and neck cancer diagnosis and prognosis prediction. In addition to local research projects, my group is working with a wide range of collaborators and funders across the world.

I am passionate about raising the profile of Pathology as a specialty and raising awareness of head and neck cancers. I work closely with a number of patient groups and charities and am a Patron for The Swallows Head and Neck Cancer Charity.

Research interests

One of my main interests is the application of Artificial Intelligence and Deep Learning to Pathology with numerous recent publications. At present, I am involved in a number of national and international collaborative projects exploring 'novel digital biomarkers' in cancers and pre-cancers. I am the PI on a Project Grant (WORTH £405k) by Cancer Research UK which aims to use AI for prognosis prediction in oral pre-cancer. Recently, I have been awarded £247K as part of an International Collaborative Research Grant from The British Council. This project involves working alongside collaborators in Khyber Medical University, Pakistan with matched local funding to explore genetic markers of diagnosis and prognosis in oral cancers.

My main clinical research interest is studying metastasis and extracapsular spread in oral cancer or oral squamous cell carcinoma (OSCC) as it reduces the 5-year patient survival by 80-85%. In particular, I am interested in the role of tumour microenvironment (TME), stroma and epithelial mesenchymal transition in cancer progression, bone invasion, metastasis and extranodal extension. I am also interested in Salivary Gland tumour diagnosis and pathobiology and identification/testing of biomarkers useful in diagnosis and prognosis prediction.

Another research interest of mine is in the interaction of chemokine receptors and their ligands in inflammatory and neoplastic disease. Our previous work showed expression of the XCR1 receptor outside the immune system for the first time where it facilitated cancer cell signalling, migration, invasion, proliferation in addition to stimulating adhesion to ECM components and release of Matrix Metalloproteinases.