A neutrophil to lymphocyte ratio as a prognostic marker for Vestibular schwannoma growth

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**Objective:** Despite its potential huge clinical significance, to date, there are no reliable predictors of vestibular schwannoma (VS) growth. Neutrophil-to-lymphocyte ratio (NLR) has been examined in the context of malignant tumours or illness to assess its ability to act as an indicator of growth or prognosis but never in patients with VS. Our objective was to identify any predictive value of the NLR for tumour growth in patients with VS.

**Methods:** A retrospective analysis of patients with VS managed in a tertiary referral centre was performed. The NLR, prior to any intervention and within 12 months of the initial diagnosis, was identified through our prospectively updated database in patients with growing and non-growing VS. Blood tests obtained during acute illness or in the presence of malignancy were excluded. We performed logistic regression and compared NLR with tumour growth, as defined on magnetic resonance imaging (MRI) (>1 mm/ year). Level of significance was set at 0.05. We adjusted data for age, gender and side and found specificity and sensitivity to identify if NLR is a predictive model.

**Results:** In a period of 15 years, 160 patients with VS and available NLR results were identified. Seventy-four had growing VS and 86 non-growing tumours. P-value for NLR of growing and non-growing VS was 0.001. AUC (area under the curve) when adjusted for age, gender and side was 0.71 showing that NLR is a good, independent prognostic factor for VS growth.

**Conclusion:** These retrospective results show a trend with growing tumours exhibiting a higher NLR. As NLR is a cost-effective and easily obtained value, further prospective investigations and larger case series need and are currently being examined.

**Biography**
Georgios Kontorinis having obtained his training in Otorhinolaryngology and his MD on active middle ear implantation in Hannover Medical School in Germany, completed advanced fellowships in Paediatric Otolaryngology in Sheffield Children’s Hospital and in complex Otology, auditory implantation and Skull Base Surgery in Manchester University Hospitals. He also completed a Masters degree in Medical Education in Karolinska University in Stockholm, Sweden. He has published widely in peer-review journals and presented numerous papers in international and national meetings. He is a Fellow of the Royal College of Surgeons in Glasgow, member of the advisory board of Facial Palsy, UK and reviewer in leading peer-review journals in Otolaryngology and Neuroradiology. Since 2013 he has been a Consultant ENT Surgeon and Neurotologist at the Institute of Neuroscience in Southern General Hospital in Glasgow. He has also been appointed Honorary Senior Clinical Lecturer in Glasgow University. Most of his clinical practice involves complex Otology and Neurotology and Skull Base Surgery and predominantly the management of vestibular schwannomas. He has a special clinical and research interest in hearing loss, tinnitus and balance disorders as well as in facial nerve palsy.

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