Reply to Letter to the Editor re: Tumour thickness in oral cancer using an intraoral ultrasound probe

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Dear Editor,

We appreciate the comments made by the authors with regards to our paper “Tumour thickness in oral cancer using an intraoral ultrasound probe”. It emerges that intra-oral ultrasound is helpful in decision making regarding management of the primary tumour and neck. We do agree with the authors that tumour thickness is not the only important predictive factor for lymph node metastasis, as we describe in the introduction section of our article, “other important characteristics of the tumour are: epidemiologic parameters such as age, sex, race, alcohol, and/or tobacco intake, clinical parameters (TNM stage, site) and histopathological parameters such as the tumour border, being either infiltrative or more pushing, perineural invasion and vascular invasion” [1].

In the opinion of the authors all parameters for lymph node metastasis should be studied together. In 2002 Yuen et al. [2] studied the prognostic significance of multiple factors for subclinical nodal metastasis in 72 patients with multivariate analysis. In the multivariate analysis, tumour thickness was the only significant independent prognostic factor for subclinical nodal metastasis ($p=0.031$). T stage, vascular invasion, lymphatic vessel invasion, perineural invasion and shape were not significant prognostic for nodal metastasis.

Most of the described factors are not routinely determined, or only significant in univariate analysis (for example: basaloid variants [3], sialoadenotropism/ductal invasion [4]) and therefore will be more difficult to use as prognosticator.

In 2005 Woolgar [5] reviewed histopathological prognosticators in oral and oropharyngeal squamous cell carcinoma. The influence of sialoadenotropism (extension of dysplasia down the orifices of minor salivary glands) and ductal invasion on survival is uncertain but both features are associated with increased local recurrence and second primary tumours. This conclusion is formulated based on the study by Daley et al. [4]. In 2.14% (26/1216) salivary ductal invasion was present, based upon those 26 cases they concluded “routine measured depth of ductal invasion appears to have no significance with respect to prognosis”.

Furthermore the authors state bone involvement is significant histopathological prognostic, however in our study we only included T1 or T2 squamous cell carcinomas of the tongue or floor of mouth. Hence bone involvement was not present in our population.

With this study we tried to present our results with respect to the feasibility of ultrasound measurements of intra-oral tumour thickness, for that reason we published this article in a radiologically orientated journal. No statement was made to evaluate the significance of tumour thickness on prognosis and survival rate.

Since June 2007 we have been using a new intra-operative transducer. In our current treatment protocol, in tumours of less than 5-mm thick, PDT treatment can be used as light penetration up to 1 cm. With this first analysis we showed that ultrasound with our new probe gave a Pearson’s correlation up to $R=0.93$. Our measurements were performed by only one radiologist to have a similar test result in every patient.

It requires large studies and independent validation to evaluate inter- and intraobserver variability and the identification of a cut-off value with adequate utility for clinical decision making.

To conclude, we agree with the authors tumour thickness is an important, but not the only, predictive marker for lymph

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node metastasis, as such, it can help in decision-making with regard to management of the primary tumour and neck. Our purpose of this study was to evaluate only the feasibility of intra-oral measurements with our new probe.

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