# LETTER TO THE EDITOR

## Letter to the editor: Enhancing the predictive potential of preoperative DOI assessment using imaging techniques

*To the Editor:*

In a recently published paper, Haraguchi et al.[1] compared preoperative depth of invasion (DOI) obtained with magnetic resonance imaging (MRI) and histologic DOI to predict the cervical lymph node metastasis of tongue squamous cell carcinoma. The threshold value for DOI in determining cervical lymph node metastasis was also proposed. We take this opportunity to communicate our perspective on further enhancing the predictive potential of preoperative DOI assessment using imaging techniques.

In histologic DOI, the deepest part of the tumor is regarded as the invasive tumor front (ITF).[2] This part of the lesion shows invasion of tumor cells in various patterns such as sheets, islands, nests, or individual cells.[3] The pattern of invasion mostly correlates with the grade of the tumor. For example, poorly differentiated tumors show invasion in the form of individual cells or very small nests and show blending of the tumor with the adjacent stroma associated with ITF.[4] On the other hand, well-differentiated tumors show large nests or islands of malignant cells and it is possible to make the distinction between the stroma and tumor islands.[4]

We strongly believe that in poorly differentiated oral squamous cell carcinoma, imaging modalities such as MRI would not be able to accurately reflect the deepest part of the ITF due to the presence of individual tumor cells and small nests; this could lead to underreporting of DOI. On the other hand, in well-differentiated oral squamous cell carcinoma, MRI could be able to capture the distinct tumor-stroma boundary at deeper ITFs and thus provide an appropriate assessment of DOI. Thus, inadvertently, preoperative assessment of DOI using MRI could be affected by the pattern of invasion, which is dependent on the grade of the tumor.

With this proposed contention, we recommend a grading-based interpretation of MRI for preoperative assessment of DOI, with threshold values calculated accordingly. The grading of the tumor would be obtained from the diagnostic incisional biopsy. The cut-off DOI thus obtained will be much more clinically relevant than considering only the MRI-generated DOI.

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## REFERENCES

1. Haraguchi K, Yoshiga D, Oda M, et al. Depth of invasion determined by magnetic resonance imaging in tongue cancer can be a predictor of cervical lymph node metastasis. *Oral Surg Oral Med Oral Pathol Oral Radiol*. 2021;131:231-240.
2. Almangush A, Mäkitie AA, Triantafyllou A, et al. Staging and grading of oral squamous cell carcinoma: an update. *Oral Oncol*. 2020;107:104799.
3. Khwaja T, Tayaar AS, Acharya S, Bhushan J, Muddapur MV. Pattern of invasion as a factor in determining lymph node metastasis in oral squamous cell carcinoma. *J Cancer Res Ther*. 2018;14:382.
4. Almangush A, Bello IO, Keski-Säntti H, et al. Depth of invasion, tumor budding, and worst pattern of invasion: prognostic indicators in early-stage oral tongue cancer. *Head Neck*. 2014;36:811-818.