

Extended Abstract

## Intraoral Ultrasound in the Evaluation of Depth of Invasion in OSCC. Preliminary Results <sup>†</sup>

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Oral Squamous Cell Carcinoma (OSCC) shows an early tendency to lymphatic spread rather than hematogenous. The surgical treatment cannot be considered oncologically complete if the neck is not evaluated [1]. According to TNM staging system, the management of early stage (T1/2) or clinically node-negative, is still controversial (Figure 1). Several studies have shown that tumour thickness and depth can be considered the most important prognostic factors; Depth of Invasion (DOI) means the cancer growth extension into the tissue while thickness concerns the entire mass [1]. The exact depth cut-off has not yet been well defined. A preoperative investigation of tumour thickness and DOI would provide useful informations for targeting those patients who need neck treatment. To measure these factors are available Magnetic Resonance Imaging (MRI), Computed Tomography (CT) and Ultrasonography (US) [2]. The limitation of MRI and CT is that within a thickness less than 5 mm, it could be difficult to differentiate the tumour from the surrounding tissues. With the introduction of intraoral probes, US allows the direct evaluation of tumour and also it has advantages like harmless, radiation free, easy-to-use, non-invasive, unaffected by metal artefacts.

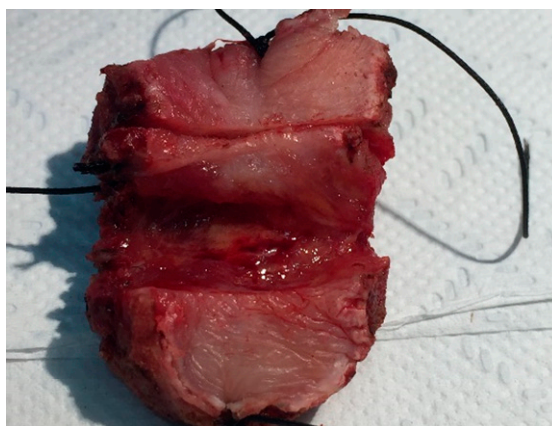


Figure 1. T1 tongue tumour.

The aim of this study was to compare tumour DOI by US with histological sections and to insert the US in the OSCC diagnostic flow-chart [1,2].

Twelve patients with histological diagnosis of OSCC T1 were undergone to ultrasound using an E-CUBE 15 EX scanner (Alpinion, Seoul, Korea) with a 8–17 MHz intraoral transducer like a toothbrush (Figure 2). For each patient has been performed an intra-operative and post-operative histological examination to establish tumour depth. Statistical analysis was made with SPSS 24 software (IBM, New York, NY, USA).



Figure 2. DOI (A), thickness (B), diameter (C).

By considering the presence of tumour infiltration, 90% sensitivity was found for intraoral ultrasound in comparison to histological evaluation. 9 true-positive, 2 false-positive and 1 false-negative occurred in our patients.

Using the Fisher Test, it was found that there was not a statistically difference between ultrasound DOI and histological DOI (chi-square = 0.218;  $p = 1000$ ) Table 1.

Table 1. Comparison between ultrasound and hystological DOI.

	Method	Infiltration		Total
		Infiltrating	Not INFILTRATING	
	Ultrasound	11	1	12
	Hystologic	10	2	12
	Total	23	1	24

Although larger samples are needed, these preliminary results show that US is accurate to assess DOI level and it represents an useful and cost-effective device in the OSCC management [1,2].

**Conflicts of Interest:** The authors declare no conflict of interest.

**References**

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