



An international comparison of the management of the neck in early oral squamous cell carcinoma in the Netherlands, UK, and USA



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ABSTRACT

Background: Early oral cavity squamous cell carcinoma (OCSCC) management appears to vary both within and between countries. Variation in practice can be an indicator of absence of evidence-based management and may negatively influence survival and morbidity. The exact variation and the relationship to differences in guidelines are unknown. This study aimed to report on these variations in the Netherlands, UK, and USA, and to evaluate them.

Methods: Information regarding the variation in OCSCC management strategies was obtained from a questionnaire sent to representatives of head and neck cancer centers in the Netherlands, UK, and USA. Within-country and between-country variations were also assessed in light of the different guidelines.

Results: In total, representatives of 45 centers completed the questionnaire; 10 from the Netherlands, 26 from the UK and 9 from the USA. Our results demonstrate a distinct variation in the diagnoses, treatment and follow-up of OCSCC, both within and between countries. Only a small amount of variation between countries could be linked to differences in guidelines.

Conclusions: There is high variation in the management of the neck in OCSCC. There seem to be a need for direct evidence about optimal management decisions to establish more evidence-based management and uniform practice.

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1. Introduction

Cancers of the oral cavity are an important public health issue in many countries (Lambert et al., 2011). The vast majority of these cancers are oral cavity squamous cell carcinomas (OCSCC) (Warnakulasuriya, 2009). Regional lymph node metastases occur frequently and can decrease survival drastically compared with no regional lymph node involvement (Capote et al., 2007; Rodrigo et al., 2011). Therefore, adequate diagnostic assessment and treatment of the neck is considered to be crucial. However, the

head and neck region is anatomically complex, and treatments can have a high impact on quality of life (Bradley et al., 2011; Rogers et al., 2004; Stuiver et al., 2008). Therewith, decisions regarding both the assessment and treatment of the neck have been the subject of debate for many years. Multiple diagnostic modalities are available for detecting lymph node metastases, ranging from palpation to imaging techniques, such as computerized tomography (CT), magnetic resonance imaging (MRI), ultrasound (US), and ultrasound-guided fine-needle aspiration cytology (USgFNAC). Even when no metastases are demonstrated by these diagnostic modalities (i.e. clinically negative node [cN₀]), a high rate of occult metastases remains. Traditionally, treatment of the cN₀ neck consists of an elective dissection of the neck or a watchful waiting (WW) policy. More recently, the sentinel node biopsy (SNB) procedure has been added to the diagnostic armamentarium. With this procedure, the metastatic status of the neck can be more accurately

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assessed (Govers et al., 2013; Murer et al., 2011; Schiefke et al., 2009).

Until recently, (modified) radical neck dissection was considered to be the appropriate surgical treatment if lymph node metastases were detected. After selective neck dissection became the standard type of dissection for the cN₀ neck, the efficacy of selective neck dissections in the clinically positive neck (cN₊) has been explored as well (Coskun et al., 2014). The use and duration of regular follow-up of OCSCC patients after neck surgery and WW have also been questioned over the past few decades (Wensing et al., 2011).

Despite the amount of research published in the literature, the management of early OCSCC appears to vary both within and between countries; even between countries with a similar level of development. Variation in practice can be an indicator of absence of evidence-based management and may negatively influence survival and morbidity in those OCSCC patient populations that do not receive optimal treatment. Moreover, the variation in practice may also hamper the execution of international multicenter trials.

However, the exact variation in practice is unknown. Furthermore, it is not known whether some variation could be explained by differences in organization of healthcare between countries or by differences in guidelines.

The aim of the current study was to report on the international variations in the management of early (T_{1–2}) OCSCC in the Netherlands, UK, and USA. Furthermore, we will report on differences in guidelines and healthcare systems.

2. Materials and methods

2.1. Design

This was a cross-sectional study using a convenience sample of centers treating OCSCC and an electronic online questionnaire (survey monkey) (“SurveyMonkey, <https://nl.surveymonkey.com/mp/aboutus/>,” 2014).

2.2. Questionnaire development

The questionnaire was based on both the literature and interviews with several specialists in the field of head and neck cancer (HNC), including two otolaryngologist/head and neck surgeons, three oral and maxillofacial head and neck surgeons, a radiologist specialized in HNC, and an oral cancer researcher. We piloted the questionnaire using five surgeons, and made some final adjustments based on their comments and suggestions before general distribution.

2.3. Study group

To obtain information regarding the international variation in the management strategies for early OCSCC, questionnaires were sent to representatives of HNC centers in the Netherlands, UK, and USA. These countries were chosen because of their assumed high quality of care, but very different healthcare systems. In the Netherlands, the questionnaires were distributed in cooperation with the Dutch Head and Neck Society, representing all eight HNC centers and their partner centers. Questionnaires were sent by e-mail to the members of the eight centers. These members were asked to distribute the questionnaire to possible partner centers. In the UK, the questionnaires were distributed in cooperation with the British Association of Head & Neck Oncologists (BAHNO) a multidisciplinary society for healthcare professionals involved in HNC. The link to the questionnaires was distributed by e-mail and on the website of the BAHNO. In the USA, HNC specialists involved in treatment and research in the field of oral cancer were directly

contacted by e-mail in which a link to the questionnaire was attached. The centers were assured that the results were anonymous.

2.4. Questionnaire content

The questionnaire was divided into the following two parts: (1) questions on diagnostics, management of the cN₀ neck, management of the cN₊ neck, and standard follow-up strategy; and (2) choice of a preferred strategy for two hypothetical cases of OCSCC with cN₀ necks in two different scenarios (see Box 1 for a description of the cases and the different scenarios).

2.5. Healthcare systems and guidelines

As sources of information on the distribution of healthcare systems, we used both the internet site and the report ‘OECD in Figures’ of the Organisation for Economic Co-operation and Development (OECD). For guideline comparisons, we used guidelines provided by the professional HNC organizations in the included countries (“ENT UK: Head and Neck Cancer: Multidisciplinary Management Guidelines,” 2011; “NCCN (National Comprehensive Cancer Network): Head and Neck cancers: NCCN Clinical Practice Guidelines in Oncology,” 2014; “NWHHT (Nederlandse Werkgroep Hoofd Hals Tumoren): Landelijke richtlijnen Mondholte- en orofarynxcarcinoom,” 2004).

Box 1

Description of hypothetical patient examples

Patient I

Man, 75 years of age with squamous cell carcinoma of the tongue and a clinically negative neck. This man has been smoking 20 cigarettes and drinking 2 units of alcohol on average every day for the past 50 years. He has multiple comorbidities and has been living in a retirement home for 5 years. His quality of life is relatively low at present. He has some problems performing his daily activities, has pain (in his back and shoulder), and is quite anxious after receiving the diagnosis of oral cavity cancer. He also has some shoulder complaints. He is unable to lift objects above his head because of these complaints. However, the shoulder complaints are not always present.

Patient II

Woman, 55 years of age with a clinically negative squamous cell carcinoma of the tongue. This woman does not smoke, but drinks a few units of alcohol on average every day. She has no co-morbidity and works full time as a schoolteacher at a primary school. Her quality of life is currently relatively high. She has no problems with her daily activities and no pain, but is slightly anxious after receiving the diagnosis of oral cavity cancer. She has no shoulder complaints at present.

Participants were asked to choose a treatment strategy for each patient according to two different scenarios, consisting of different primary tumor characteristics. In scenario one, the largest surface tumor diameter is 1 cm and the depth of the invasion is 4 mm. In scenario two, the largest surface tumor diameter is 2 cm and the depth of the invasion is 7 mm.

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