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Editorial

# Noninvasive Ultrasound in Oncologic Follow Up of Head and Neck Cancer?

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## Editorial

In Head and Neck Squamous Cell Carcinoma (HNSCC) there are no evidence-based international staging or restaging guidelines. Decisions concerning whether to perform surgery or to follow a non surgical regime are often a result in the respective tumor conferences and are therefore subject to variance. Recommendations are given on the basis of results endoscopy and imaging findings. The modality of imaging (CT, MRI, PET Scan or ultrasound (US) necessary however remains controversial.

Depending on TNM stage and anatomic site surgical and non surgical options are available [1].

In approximately 40% of cases the patients present with limited or early-stage cancer and these cases are usually treated with surgery or radiation alone. For most patients with locally advanced disease surgery combined with adjuvant therapy or chemoradiation as curative treatment options are discussed individually in interdisciplinary tumor boards [2,3,4].

However, concurrent Chemoradiotherapy (CRT) is increasingly applied as the definitive treatment of choice for locoregional advanced HNSCC with improved clinical outcome [5]. The question arises if post-radiation neck dissection should be performed routinely because available imaging modalities do not reliably identify residual disease [6], or if clinicians are able to measure treatment response of regional lymph node disease to select patients for salvage neck dissection with residual neck disease and to identify patients suitable for clinical follow-up and close observation [7,8].

PET scan is in some countries the imaging tool of "first choice" in oncologic staging superceding the role of CT and MRI scanning [9]. The main argument is that it provides a complete staging procedure and may reduce neck dissections [9-11]. Nevertheless PET scan is expensive and not readily available in many countries. Undisputed is the prognostic impact of local and regional tumor control as numerous studies confirmed [12-15]. So what imaging may be recommended?

In literature and in the US guidelines of the NCCN (National Comprehensive Cancer Network) lymph nodes of the neck may be evaluated by palpation, US, CT and/or MRIapart from PET scan. [16-19].

**Table 1:** US Diagnostic criteria in the differentiation of benign and malignantnodes oft the neck.

| | Benign | Malignant |
|---|---|---|
| **Form** | Oval | Round |
| **Boundary** | Sharp | blurred |
| **Hilar sign** | hyperechoic hilum | no hilum |
| **Vessels** | hilarvascularization | tangential vascularisation |
| **Dynamic behaviour** | Stationary | increase of size |
| **Intranodale necrosis** | Keine | anechoid central region in heterogeneuous lymph node texture |

In some parts of Europe, high-resolution US and color duplex ultrasound is a well-established and proven method in the context of oncologic follow up after primary therapy of head and neck cancer.

High-resolution US (B-mode and color-duplex) clearly detect morphological parameters indicating malignant transformation of neck lymph nodes or offers evaluation of tumor extend of the pharyngeal and laryngeal area. Another essential aspect in sonographic and noninvasive follow-up is the accurate and standardized documentation (DICOM, PACS) of findings and to control dynamic changes during follow-up performed by the physician who does endoscopic exam in these patients. Sonographic imaging resolution reaches the submilimetre level, further features as elastopgraphy and contrast agents (CEUS) enhance diagnostic impact [20-25].

Limits in detection of metastatic lymph nodes are shared equally by US, CT, MRI and PET scan, when a lesion is of size smaller than 3mm. [26-37]. Table 1 main criteria to evaluate and differentiate enlarged neck lymph nodes [26-34]. The small number of studies comparing US, CT and MRI confirm the value of US in oncologic lymph node evaluation in oncologic follow [38-46] some even propagate US as method of choice [47-59] and corroborate our own experiences.

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