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## Unexpected drainage patterns and high accuracy of SLNB in OSCC after previous neck treatment

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### Purpose or Objective

To evaluate the results of sentinel lymph node biopsy (SLNB) in patients diagnosed with a cT1-T2 oral squamous cell carcinoma and clinically negative (cN0) neck in the Netherlands. An update of this ongoing study will be presented.

### Material and Methods

Retrospective analysis of 328 previously untreated patients, who underwent SLNB between 2007 and 2016. The SLNB procedure consisted of preoperative lymphoscintigraphy, intraoperative detection using gamma probe guidance and postoperative histopathological examination including step-serial sectioning and additional keratin immunohistochemical staining. A positive SLNB was followed by a neck dissection, while patients with a negative SLNB underwent regular follow-up with ultrasound guided fine-needle aspiration cytology on indication.

### Results

The SLN identification rate was 98% (322/328). At least one histopathologically positive SLN was found in 77 of 322 patients (24%). In 15 patients (19%) SLNs contained only isolated tumor cells as largest tumor deposit, in 28 patients (36%) micrometastases and in 34 patients (44%) macrometastases. Median follow-up was 26 months (range 1-104). During follow-up 18 patients developed isolated regional recurrence after a negative SLNB. Therefore, sensitivity of SLNB was 81% and the negative predictive value was 93%. The SLNB sensitivity of patients with a floor of mouth tumor was lower compared with tumors on other locations (67% vs. 84%,  $P=0.11$ ), although the negative predictive value was comparable (92% vs. 93%). SLN-negative patients showed a longer overall survival (78% vs. 73%,  $P<0.001$ ) and disease specific survival (99% vs. 85%,  $P<0.001$ ) compared to SLN-positive patients. Isolated regional disease-free survival did not differ significantly (90% vs 87%,  $P=0.13$ ).

### Conclusion

SLNB is a safe and reliable diagnostic staging technique for detection of occult lymph node metastasis in patients with early stage (cT1-T2N0) oral cavity cancer, but needs improvement in patients with floor of mouth tumors.

### OC-021 Transoral Laser Microsurgery for T1a glottic cancer - DAHANCA 27

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### Purpose or Objective

The aim of this study was to evaluate whether treatment with transoral laser microsurgery (TLM) is non-inferior compared to accelerated radiotherapy (RT) in the treatment of T1aN0M0 glottic squamous cell carcinoma (SCC).

The DAHANCA (Danish Head and Neck Cancer) database prospectively register all Danish patients diagnosed with a

head and neck cancer. Hence, all patients diagnosed with a T1aN0M0 glottic SCC are registered, allowing for the analyses of potential selection biases into the DAHANCA 27 study cohorts.

### Material and Methods

Since 2003 the Danish national standard treatment for T1aN0M0 glottic SCC has been accelerated RT (66Gy, 33 fractions, 6 fractions/week). In 2012 cordectomy type I-III using TLM was introduced as an experimental treatment. The DAHANCA 27 trial is a comparative non-inferiority phase II study comparing two timely separated national patient cohorts. Patients treated with TLM from September 2012 to April 2016 were included in the TLM cohort, and patients treated with accelerated RT from January 2003 to august 2012 were included in the RT cohort. All patients are followed for five years or until death. The study will evaluate whether disease control after treatment with TLM is non-inferior compared to RT. Laryngectomy rate, survival and voice quality will also be analysed.

### Results

A total of 94 patients were included in the TLM cohort and 550 patients in the RT cohort. With an observation time of 36 month, the proportion of local recurrence was 5.3% (5 patients /94) in the TLM cohort and 4.4% (24 patients/ 550) in the RT cohort. The proportion of successful salvage was 80% (4 patients /5) in the TLM cohort and 71% (17 patients /24) in the RT cohort. The patient in the TLM cohort with non-cured recurrence initially rejected salvage treatment and was month later evaluated incurable.

### Conclusion

Data show non-inferiority in disease control after TLM compared to RT. This study contributes to the international evidence regarding best practice in the treatment of T1aN0M0 glottic cancer due to the large national cohorts. The study outcome will determine whether TLM is implemented as a standard treatment for T1aN0M0 glottic cancer in Denmark.

### OC-022 Unexpected drainage patterns and high accuracy of SLNB in OSCC after previous neck treatment

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### Purpose or Objective

Patients with oral squamous cell carcinomas (OSCC) suffer a high risk for local recurrences (10-30%) and have an annual risk of 3-4% for developing second primary tumours. In OSCC neck levels at risk for metastasis may be changed due to disruption of lymphatic channels by

previous treatment of the neck. Current evidence using the sentinel lymph node biopsy (SLNB) is limited to one study with 22 patients. This study evaluates the lymphatic drainage patterns and determines the accuracy of SLNB in patients diagnosed with a cT1-2N0 OSCC and a history of neck surgery or radiotherapy in three Dutch Head and Neck Centers.

#### Material and Methods

Retrospective analysis of 53 cT1-2N0 OSCC patients, who underwent neck staging using SLNB between 2007 and 2016, after a history of neck surgery or radiotherapy. SLNB consisted of lymphoscintigraphy, gamma-probe detection and histopathological examination of SLNs. Only a positive SLNB was followed by a neck dissection. Ten patients had previous treatment of the neck only contralateral from the current tumour. The lymphatic drainage pattern analysis consisted of only the 43 patients with a history of ipsilateral or bilateral neck surgery or treatment compared to the current tumor: ipsilaterally SLN extirpation (n=9), neck dissection

#### Results

SLNs were detected in 45 patients, resulting in an identification rate of 85% (45/53). Three patients (7%) had at least one positive SLN. One patient (1/45, 2%) was diagnosed with isolated regional recurrence during follow-up, resulting in a sensitivity of 75% and a NPV of 98%. With respect to the lymphatic drainage patterns in ipsilaterally treated patients, unexpected drainage patterns were observed in 30% (first SLN: 9% level IV, 5% level V, 16% contralateral neck in well lateralized tumours) and in 12% no lymphatic drainage patterns were seen.

#### Conclusion

SLNB seems to be a safe and reliable procedure for neck staging of cT1-2N0 OSCC patients with a previously treated neck. SLNB renders an assessment of the individual lymphatic drainage pattern, compensating for a potential variability in 30% of these patients.

#### OC-024 12 week PET-CTs have a low PPV for nodal residual disease in HPV positive oropharyngeal cancers

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#### Purpose or Objective

The PET-NECK study showed that a complete metabolic response on PET-CT 12 weeks after radiotherapy (RT) spared neck dissections (ND) with no resultant reduction in survival. As Human Papilloma Virus (HPV) positive Oropharyngeal Squamous Cell Cancer (OPSCC) respond later on anatomical imaging, it remains unclear whether an immediate ND is necessary for patients with an equivocal response on the 12 week PET-CT (12wk PET-CT).

#### Material and Methods

12wk PET-CT scans of patients treated with RT/ChemoRT for node positive OPSCC in a tertiary level oncology centre between January 2013 to September 2016 were evaluated retrospectively by a radiologist to categorise an incomplete, equivocal or complete response (IR/EQR/CR) in lymph nodes. Patient details were obtained from electronic records.

#### Results

154 patients treated with chemo/radiotherapy were identified (116 males, 38 females, median age 58 (range 39-78)). HPV status was as follows: HPV-positive (126), HPV-negative (21), HPV-unknown (7). Median follow up

was 24.4 months (range 3-52 months). Metabolic responses are shown in Table 1. 38 patients (24.7%) had an EQR. 17 EQR patients (44.7%), all HPV-positive, had a second PET-CT scan at a median of 90 days after the 12wk PET-CT. These scans showed 12 late CRs (70.6%), 2 continued EQRs (both are recurrence-free) and 3 late IRs (two patients were recurrence-free, one had distant metastases). For HPV-positive patients, the positive predictive value (PPV) and the negative predictive value (NPV) of the 12wk PET-CT is 27.9% and 97.4% respectively. For HPV-negative patients, the PPV and NPV are 77.8% and 87.5% respectively.

#### HPV-positive

	No relapse	Relapse*	Total
CR	75	2	77
EQR/IR	31	12	43
	106	14	120

#### HPV-negative

	No relapse	Relapse*	Total
CR	7	1	8
EQR/IR	2	7	9
	9	8	17

Table 1. 12wk PET-CT responses and outcomes. \*Includes distant metastases and residual disease on ND

#### Conclusion

12wk PET-CT scans have a high NPV for residual/recurrent disease OPSCC regardless of HPV status. The PPV of an IR/EQR for HPV-positive OPSCC is low so the optimal surveillance/salvage management strategy for these patients requires further clarification.

#### OC-023 Real life application of the PET-Neck protocol for post radiotherapy surveillance in advanced HNSCC

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#### Purpose or Objective

The PET-NECK study demonstrated surveillance PET-CT scan 12 weeks post-radiotherapy for advanced head and neck squamous cell cancer (HNSCC) to be non-inferior to planned neck dissection (ND). The study recommended all equivocal and incomplete nodal responses undergo a ND. However, there is evidence to suggest some tumours take longer to involute, thus optimal management of equivocal nodal responses remain unclear.

Aims: To evaluate the practice and outcomes of the PET-Neck protocol in our centre. To compare clinical outcomes for the subgroups achieving complete (CR), equivocal (EQR) and incomplete (ICR) nodal response, so as to assess the relevance of ND for those with an EQR.

#### Material and Methods

Patients with node positive HNSCC treated with radiotherapy between January 2013 and September 2016 were identified from the PET-CT database. PET-CT responses were classified retrospectively as CR, ICR or EQR by a radiologist. Patient demographics and clinical outcomes were obtained from electronic patient records.

#### Results

187 patients with HNSCC were identified, 74.8% male, mean age 59 years. 82.3% (154/187) of patients had oropharyngeal cancer, 80.5% (124/154) were HPV-