

## European Society of Surgical Oncology Workshop

### E3. The future of sentinel lymph node biopsy

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Sentinel lymph node biopsy (SLNB) is a standard procedure nowadays in the staging of breast cancer with clinically negative axillary lymph nodes, but it should only be performed by a team that is validated in the use of the technique. Clinically suspect axillary lymph nodes should only be considered tumour positive if this is proven by biopsy.

Preoperative axillary ultrasound and fine needle aspiration cytology improve patient selection for SLNB. Data from randomised controlled trials demonstrate that this procedure is associated with less morbidity and better quality of life than axillary lymph node dissection (ALND).<sup>1–3</sup> The risk of axillary relapse after SLNB in patients with negative sentinel node (SN) is less than 1% with a 5 year follow-up.<sup>4</sup> Most of the initially identified potential contraindications towards the procedure have been ruled out.

The aim of the ESSO workshop on “The future of SLNB” is to assess the state of the art of the procedure, to define isolated tumour cells and micrometastases, to consider the advantages and disadvantages of intraoperative examination and the methodology used for examining SN intraoperatively or with permanent sections. Other aims are to examine the role of SN in special circumstances in clinical practice and new methods to identify and examine SN. The workshop will be divided into five sessions with different experts. In the first session, “Sentinel lymph node biopsy today: state of the art”, Emiel Rutgers and Renato Valdes Olmos, with the chairmanship of Hester Oldenburg, will start by presenting their long-term experience with SLNB, the mapping techniques, the recommendations for the use of SLNB in oncology practice and its suitability in the staging and management of breast cancer, identifying important questions and settings for further research.

In the second session, “Pathological issues – Round Table”, Gabor Cserni will present and discuss definitions of isolated tumour cells (ITC) and micrometastases on the basis of the seventh edition of the AJCC Cancer Staging Manual.<sup>5</sup> In this new edition the classification of ITC clusters and single cells is more stringent. Small clusters of cells not greater than 0.2 mm, or nonconfluent or nearly confluent clusters of cells not exceeding 200 cells in a single histologic lymph node cross section are classified as ITC. Simonetta Bianchi will discuss the advantages and disadvantages of intra-

operative frozen section (FS) examination of SLN. All studies show that the sensitivity of intraoperative FS examination is significantly greater when the SLN contain macrometastases compared to micrometastases. Recent studies found a significant increase of intraoperative FS sensitivity with tumour size.<sup>6</sup> The opportunity to modulate the use of intraoperative FS on the basis of tumour size will be discussed. Paul Van Diest will discuss the pathological examination of SLN focusing on variability in the methods of assessment, value of cytokeratin immunohistochemistry in the evaluation of SLN and the association of ITC and micrometastases with the clinical outcome of breast cancer.<sup>7</sup> The prognostic implications of minimal lymph node involvement will be debated by Giuseppe Viale in patients who had ALND and those staged within SLNB.

In the third session, “New indications to sentinel node biopsy”, Paolo Veronesi, Oreste Gentilini and Viviana Galimberti will present the European Institute of Oncology experience on SLNB in special circumstances such as previous surgery<sup>8,9</sup> or multicentric disease,<sup>10</sup> pregnancy,<sup>11</sup> male breast cancer<sup>12</sup> and DCIS<sup>13,14</sup>; according to their experience it is possible to extend the indications to SNB and the only absolute contraindication is the presence of metastatic axillary nodes.

In the fourth session, “Sentinel node biopsy in neoadjuvant chemotherapy”, Cornelis Van de Velde and Jan Yves Pierga will discuss the feasibility of SLNB in breast cancer patients treated with neoadjuvant chemotherapy (NAC).<sup>15,17</sup> Nodal staging before NAC provides important prognostic information about the risk of treatment failure while a complete remission of nodal metastases after NAC is a predictor of disease free survival. The problems the experts will address will include:

- SLNB before NAC in patients without suspect lymph nodes at ultrasonography sparing an axillary lymph node dissection (ALND) after NAC
- SLNB after NAC in the same group of patients
- SLNB after NAC in patients with a positive lymph node at fine needle aspiration cytology before NAC
- SLNB before and after NAC

In the last session, “New methods”. A. Vahrmeijer will describe an emerging technology using near infrared fluorescent probes (NIRF) to guide surgery for SLN mapping.<sup>18</sup>

Franco Di Filippo will present the one step nucleic acid amplification method (OSNA) to detect lymph node metastases with high sensitivity and specificity, high reproducibility, high speed and which is easy to use.<sup>19</sup> The OSNA assay can analyse the real size of lymph node metastasis and discriminate macrometastases from micrometastases.

Giuseppe Viale will show a rapid molecular test, the Gene Search Assay, which is a real time reverse-transcription polymerase chain reaction (RT-PCR) assay for mammapglobin and cytokeratin 19 for detection of nodal metastases greater than 0.2 mm. The assay's performance seems more sensitive than current conventional intraoperative methods and is similar to permanent histologic analysis.<sup>20,21</sup> This technology has the potential to make SLNB evaluation less subjective and reduce the need for second operations on the axilla.<sup>22</sup>

### Conflict of interest statement

None declared.

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