Sentinel Lymph node positivity in Melanoma
Can we avoid complete lymph node dissection?

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Background

• Sentinel lymph node (SLN) sampling remains a most accurate staging investigation in the management of invasive melanoma.

• When positive, completion lymph node dissection (CLND) is done but only 20% will have further Non sentinel lymph node (NSLN) which harbour disease.

• Therefore, in 80% of patients, CLND could be unwarranted and these patients could potentially be spared the morbidity of CLND.
Our Study

• A number of studies have looked at stratifying clinicopathological features and their association with Non-sentinel lymph node positivity.

• In general, more ‘advanced’ features in the Sentinel Lymph Node are associated with higher odds of having NSLN positivity.

• A meta analysis by Nagaraja et al, demonstrated 9 clinicopathological variables that could be routinely collected, which were predictive of non-SLN metastases.

• We wanted to find out if there is a subgroup which can be spared the morbidity of CLND without compromising the oncological control.
Method

• Data was collected for 90 patients, who between 2000-2016, underwent CLND following positive SLN biopsy for melanoma at the Melanoma unit, Westmead hospital NSW.

• Significantly, pathology slides were retrospectively reviewed by 2 independent senior pathologists who specialize in melanoma.
  • Tumor load and site were classified in accordance with Rotterdam/Dewar criteria.

• Data was analysed to determine which factors proved predictive in determining NSLN positivity.
Results

• Out of the 90 patients, 22 patients (24%) had further NSLN positivity.
• Median Breslow thickness was 2.9mm.
• A number of histopathological features were found to have significant associations with predicting NSLN positivity on both univariate and multivariate analysis.
## Results

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Negative clearance</th>
<th>Positive clearance</th>
<th>Statistical significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average Breslow thickness</td>
<td>2.6</td>
<td>3.7</td>
<td>P&lt;0.05</td>
</tr>
<tr>
<td>Proportion of Perinodal lymphatic tumour spread</td>
<td>0.12</td>
<td>0.71</td>
<td>P&lt;0.05</td>
</tr>
<tr>
<td>Proportion involved greater than 50%</td>
<td>0.06</td>
<td>0.83</td>
<td>P&lt;0.05</td>
</tr>
<tr>
<td>Average Size of metastasis (mm)</td>
<td>1.6</td>
<td>3.1</td>
<td>P&lt;0.05</td>
</tr>
<tr>
<td>Proportion of Extranodal involvement</td>
<td>0.03</td>
<td>0.71</td>
<td>P&lt;0.05</td>
</tr>
</tbody>
</table>
Results

• Linear regression modelling demonstrated that when present together, **Perinodal Lymphatic Tumour, Greater than 50% proportion involved and Extra Nodal location** were highly predictive of NSLN positivity.

• Further, when present together, a **Maximal metastatic tumour deposit < 0.5mm, Subcapsular location** and involving **Less than 50%** of the SLN was highly suggestive of predicting patients with no further NSLN positivity.
Discussion

• In our study only 24% of patients had NSLN positivity.
• Histopathological features of the SLN can be used to stratify risk of NSLN positivity.
• Significantly, patients who had a SLN tumour burden less than 0.5mm, in a subcapsular location and involving less than 50% of the SLN, were NSLN negative on dissection and this population could be spared a CLND.
• At present the sample size of this study limits the extrapolation of these findings to a clinical setting.
References


- van Akkooi AC, de Wilt JH, Verhoef C, et al. Clinical relevance of melanoma micrometastases (<0.1 mm) in sentinel nodes: are these nodes to be considered negative? Ann Oncol 2006;17(10):1578–85.