

MELANOMA SURGERY Literature Update: *Edition 1.*

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Indications for sentinel lymph node biopsy in 2020

BACKGROUND.

In 1992, Drs. Morton and Cochran pioneered the technique for sentinel lymph node biopsy (SLNB)¹. Since that time, SLNB has replaced elective lymph node dissection (LND) in clinically node-negative patients for nodal staging in melanoma. **The benefits of SLNB include prognostication, local control, lower rates of lymphedema than LND, and importantly, selection for contemporary adjuvant immuno- or targeted therapies or clinical trials**²⁻⁷. As reported in the landmark study, 'MSLT-1', for intermediate thickness melanomas (1.2-3.5mm), SLNB improves 10-year disease-free survival (DFS), and possibly melanoma-specific survival (MSS) versus nodal observation alone for SLN+ patients^{8,9}. The indications for SLNB have continued to evolve, with uncertainty regarding thin (≤ 1 mm) and thick (> 4 mm) melanomas. Features that may increase the risk for SLN positivity are largely based on retrospective studies. These features include Breslow thickness ≥ 0.75 mm, ulceration, mitotic rate ≥ 1 per 5mm², lymphovascular invasion, Clark level IV/V, microsatellites, in-transit disease, age <60 , and lack of tumor infiltrating lymphocytes¹⁰⁻¹⁷.

CURRENT STATUS OF THE LITERATURE.

In general, if the risk of a positive SLN is $\geq 5\%$, SLNB is recommended given the operative risks of the procedure are often lower. In the American Joint Committee on Cancer (AJCC) 8th edition analysis, thickness ≥ 0.8 mm and ulceration were not only predictors of MSS, but also associated with a risk of SLN positivity between 8-12%¹⁴⁻¹⁸. Notably, mitotic rate was not a predictor of MSS on multivariable analysis in thin melanoma, but does remain a strong predictor of SLN positivity in all melanomas, as has been shown in other studies^{11-13,17}. For instance, the largest meta-analysis by Cordeiro *et al.* on 10,928 patients identified mitotic rate ≥ 1 per 5mm², Breslow thickness ≥ 0.75 mm, Clark IV/V, and microsatellites as high-risk features for SLN positivity ($\geq 8.8\%$ risk of SLN+) in thin melanoma (≤ 1 mm)¹². Importantly, node positivity is an eligibility criterion for adjuvant novel immuno- or targeted therapies, which have dramatically improved disease-free (DFS) in node-positive patients¹⁹⁻²¹. Consequently, despite a lack of MSS benefit, SLNB should be discussed with patients who have clinically node-negative, thick (> 4 mm) melanomas not only for local control, but also to determine eligibility for adjuvant immuno- or targeted therapies and/or clinical trials³⁻⁶. As node positivity is the primary indication to obtain these important treatments, ongoing trials are assessing adjuvant immuno- or targeted therapies in node negative, high-risk stage IIB/IIC melanoma. These studies may obviate the rationale for SNB as a means to obtain novel adjuvant immuno- or targeted therapies in thick melanoma.

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RECOMMENDATION.

In clinically node-negative, resectable, non-metastatic melanoma:

1) SLNB is recommended for:

- 'intermediate' Breslow thickness melanoma (1mm-4mm)

2) SLNB should be discussed for:

- 'thin' Breslow thickness melanoma (≥ 0.8 mm-1mm)

- 'thick' Breslow thickness melanoma (> 4 mm)

- 'thin' Breslow thickness melanoma with high risk features of the primary tumor including ulceration, mitoses ≥ 1 per 5mm², lymphovascular invasion, Clark IV/V, microsattellites, and in-transit disease.

3) Patients with nodal metastases of any kind should be referred to a multidisciplinary melanoma centre to assess eligibility for immuno- or targeted molecular therapies and clinical trials in the adjuvant setting.

READ MORE.

Wright, FC *et al.* Primary excision margins, sentinel lymph node biopsy, and completion lymph node dissection in cutaneous melanoma: a Canadian clinical practice guideline.

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6726255/>

Gershenwald *et al.* Melanoma staging: evidence-based changes in the American Joint Committee on Cancer eighth edition cancer staging manual.

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5978683/>

Cordeiro *et al.* Sentinel Lymph Node Biopsy in Thin Cutaneous Melanoma: A

Systematic Review and Meta-Analysis. <https://pubmed.ncbi.nlm.nih.gov/26932710/>

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