Sentinel Lymph Node Biopsy for Melanoma

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Selection of patients for SLN Biopsy

1. Which patients with melanoma should get a SLN biopsy? Which patients with thin melanoma (≤1.0 mm) melanoma should get a SLN biopsy? Are there patients with intermediate depth melanoma with lower risk of SLN positivity?

Outcomes after SLN Biopsy

2. What are the outcomes of patients with thin melanoma with + SLN?

Role of further surgery after + SLN

3. Which patients, if any, with a positive SLN should go on to get a completion lymph node dissection?
Reasons for SLN biopsy

- Prognostication/Staging
- Regional Control of Disease
- Therapeutic Value?
Morbidity of SLN biopsy

Lymphedema rates $\leq 5\%$
Infection $< 5\%$
Hematoma $< 5\%$
Seroma 5-10\%
Parasthesias 5-10\%
Anaphylaxis from dye injection $< 1\%$

False Negative rate: 4.8\%*

Clinical Threshold for performing SLN biopsy: + rate of $\sim 5\%$

* Morten et al. NEJM 2014
Clinical case: Thin melanoma

40 M with a 0.7 mm thick melanoma on the back, Clark level IV, 3 mitoses/mm² (non-ulcerated, no LVI, no regression)

SLN Biopsy?
Predictors of SLN positivity in patients with Thin Melanoma

Thin (T1) melanomas (≤1.00 mm) account for majority of newly diagnosed melanomas (approximately 60-70%).

SLN positivity in this group is < 5%.

Current NCCN guidelines recommend discussing and considering SLN biopsy in T1b melanomas (≥0.8 mm irrespective of ulceration status) and in ulcerated melanomas ≤0.8 mm.

Little consensus as to which factors should drive decision for SLN biopsy in non-ulcerated T1 lesions <0.8 mm.
NCCN guidelines for SLN biopsy

**Stage IA** (<0.8 mm*) → WE alone

**Stage IB**
- <0.8 mm ulcerated or 0.8-1.0 mm ± ulceration)
  → WE, discuss and consider SLN

**Stage IB (T2a) or Stage II**
  → WE, discuss and offer SLN

- * high mitotic count (≥2/mm²), transected specimen, LVI, younger age

There are low risk subgroups for SLN positivity in patients with intermediate depth melanoma in which group we routinely recommend SLN biopsy; factors such as tumor depth and age can risk stratify these subgroups.
Incidence of finding additional non-sentinel nodes on completion lymphadenectomy for a + SLN is approximately 15-20%.

Various factors may help to predict which patients are at risk for harboring additional metastatic disease in the non-sentinel nodes.

Disease in the non-sentinel nodes may portend a worse prognosis.

Completion lymphadenectomy has been the standard approach for patients with + SLN, but there are now two randomized trial results which have been published which demonstrate close surveillance is also a “safe” approach.

The pendulum has swung towards more nodal observation and far less completion LND.
The landscape has changed dramatically for adjuvant therapy in melanoma

Therapies used in the metastatic setting (targeted and immune checkpoint inhibitors) have been brought to the adjuvant setting and have demonstrated efficacy
Rationale for neoadjuvant therapy

“Downstaging” tumors, making “borderline resectable” tumors “resectable”

Assessment of response to therapy in the individual patient

Patient selection—identify patients with early progression of disease who would not benefit from an extensive surgery

Presence of more antigen for priming of the immune system

Progression on neoadjuvant therapy
**Conclusions**

SLN biopsy is routinely offered to patients with T2 or greater melanomas (≥1 mm) and considered in patients with T1b lesions.

SLN biopsy can be selectively considered in other T1 lesions (+ deep margin, LVI, Clark level IV/V, high mitotic count, younger age).

Primary value of SLN biopsy is prognostic/staging and therefore risks of procedure must be weighed against potential benefits. There may be therapeutic value, and increasingly so as newer adjuvant regimens have demonstrated efficacy in stage III disease.

Patients with +SLN may be considered for either close surveillance with nodal ultrasound versus CLND (increasingly the former); for “high risk” patients, consideration can be given for completion LND for regional control and improved staging.

Neoadjuvant approaches are increasingly being explored in resectable melanoma.