Current Guidelines for Surgical Management of Malignant Melanoma

Keyvan Nouri, M.D.
Professor of Dermatology, Ophthalmology, Otolaryngology & Surgery
Louis C. Skinner, Jr., MD Endowed Chair of Dermatology
Richard Helfman Professor of Dermatologic Surgery
Vice Chairman of the University of Miami Medical Group
Director of Mohs, Dermatologic and Laser Surgery
Director of Surgical Training
Department of Dermatology & Cutaneous Surgery
University of Miami School of Medicine
Current Guidelines For Surgical Management of Malignant Melanoma

MARGIN AND SLNBX RECOMMENDATIONS
Background

- The incidence of primary cutaneous melanoma has been increasing dramatically for several decades.
- Melanoma accounts for the majority of skin cancer related deaths, but fortunately treatment is nearly always curative with early detection of disease.
- Melanomas have two growth phases, radial and vertical.
- During the radial growth phase, malignant cells grow peripherally in the epidermis but with time, most melanomas progress to the vertical growth phase, where malignant cells invade deeply.
- Breslow thickness (along with mitotic rate and Clark level) is important in prognostic determination and therapeutic recommendations.
- Surgery is the definitive management for early-stage melanoma, with medical management generally reserved for adjuvant treatment of advanced melanoma.
For lesions clinically suspicious of cutaneous melanoma, one should perform an **excisional biopsy** encompassing the entire breadth of the lesion.

This biopsy should aim for **clinically negative margins** to a depth sufficient to ensure that the lesion is completely included in the specimen and not transected.

Theoretically, punch, shave, or excision can accomplish this goal.

Guidelines suggested that 1- to 3-mm margins are required to clear the subclinical component of most atypical melanocytic lesions.

These narrow margins will in most cases permit a subsequent wide local excision with or without SLNBx if indicated.
Surgical management of MM

- In the case of Melanoma in situ: Margin size 0.5-1.0 cm
- In the case of invasive Melanoma, the national comprehensive cancer network (NCCN) and American Academy of Dermatology (AAD) guidelines agree upon the following wide excision margins:
  - Tumor smaller than 1 mm - Margin size 1 cm
  - Tumor 1-2 mm - Margin size 1-2 cm
  - Tumor 2-4 mm - Margin size 2 cm
  - Tumor greater than 4 mm - Margin size at least 2 cm
Mohs Micrographic Surgery (MMS)

Mohs micrographic surgery has been deemed appropriate for melanoma in situ and lentigo maligna, according to the most recent AAD guidelines in 2011.

In 2015, NCCN also revised their guidelines to approve of MMS for melanoma in situ.

The appropriate-use criteria for MMS from the AAD, in addition to the American College of Mohs Surgery (ACMS), American Society for Dermatologic Surgery Association (ASDSA), and the American Society for Mohs Surgery (ASMS) state that MMS is also appropriate for recurrent melanoma in situ and lentigo maligna, as well as primary lesions at the following sites:

- Head
- Neck
- Hands
- Feet
- Pretibial surface
- Nails
- Ankles
Appropriate Use Criteria for Mohs in Melanoma in situ – mobile app example

Cancer Type
- Basal Cell Carcinoma
- Squamous Cell Carcinoma
- Lentigo Maligna
- Melanoma in situ
- Other

Location
- Area H
- Area M
- Area L

Primary/Recurrent
- Primary
- Recurrent

Area M
- Cheeks, forehead, scalp, neck, jawline, Pretibial surface

MOHS SURGERY IS
APPROPRIATE
The use of Mohs is appropriate for the specific indication and is generally considered acceptable.

MEDIAN SCORE
1 2 3 4 5 6 7 8 9

SELECTED CRITERIA
Melanoma in situ
Area M
Primary

View decision tree
Mohs vs. Excision
Advantages and Disadvantages

<table>
<thead>
<tr>
<th><strong>Pros</strong></th>
<th><strong>Cons</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Theoretically, Mohs will preserve the most tissue, resulting in a smaller defect</td>
<td>Mohs is more technically challenging, requiring a unique skill subset, stains, equipment, and staff</td>
</tr>
<tr>
<td>Cure rate for Mohs is higher with fewer recurrences both locally and systemically</td>
<td>Mohs requires a longer time commitment for both patient and physician</td>
</tr>
<tr>
<td>5-year survival rate is increased</td>
<td>Insurance coverage for Mohs may vary</td>
</tr>
<tr>
<td></td>
<td>Not approved for invasive Melanoma</td>
</tr>
</tbody>
</table>
When to perform SLNBx

- Sentinel lymph node biopsy (SLNBx) should be performed when the Breslow thickness of a lesion exceeds 1mm in depth or whenever there is clinical suspicion for nodal involvement.

- NCCN guidelines recommends against SLNBx for melanoma in situ or melanoma less than 1mm in thickness.

- SLNBx should be considered in lesions from .76 to 1mm if the patient is less than 40 years of age, has significant vertical growth phase, increased mitotic rate, and Clark level ≥IV.
Contraindications

- SLNBx is **unnecessary** for patients who are already **presenting systemically with melanoma**.
- Fine-needle aspiration (FNA) is preferable to SLNBx when a patient presents with a clinically apparent node.
- Definitive recommendations for SLNBx after a previous SLNBx do not exist however the consensus is that additional SLNBxs should not be performed but it is not considered a contraindication.
Advantages and Disadvantages of SLNBx

<table>
<thead>
<tr>
<th>PROS</th>
<th>CONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>More knowledge is gained about disease stage and progression</td>
<td>Invasive technique</td>
</tr>
<tr>
<td>Patient is spared a larger procedure if nodes are negative (lymphadenectomy)</td>
<td>Risk of scarring, bleeding, infection..</td>
</tr>
<tr>
<td>This will help guide further therapies ie. Interferon, clinical trials, biologics, vaccines...</td>
<td>Risk of lymphedema in the affected limb</td>
</tr>
<tr>
<td>More tissue for pathology</td>
<td>Questionable benefit for increasing survival</td>
</tr>
<tr>
<td>There may be a positive therapeutic effect to removing positive nodes</td>
<td></td>
</tr>
</tbody>
</table>
Summary

- One should perform an excisional biopsy for lesions suspicious for melanoma that encompasses the entire breadth of the lesion.
- Final surgical margins vary depending on depth of invasion.
- Mohs micrographic surgery can be used for melanoma in situ.
- Sentinel lymph node biopsy (SLNBx) should be performed when the Breslow thickness of a lesion exceeds 1mm in depth or whenever there is clinical suspicion for nodal involvement.
References

THANK YOU