Identifying Skin Cancer

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**SKIN CANCER**

IS THE **MOST COMMON**

OF ALL CANCER TYPES

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<table>
<thead>
<tr>
<th>Cancer Type</th>
<th>Cases</th>
</tr>
</thead>
<tbody>
<tr>
<td>SKIN CANCER (non-melanoma)</td>
<td>5,400,000</td>
</tr>
<tr>
<td><strong>FEMALE BREAST CANCER</strong></td>
<td>252,710</td>
</tr>
<tr>
<td><strong>LUNG CANCER</strong></td>
<td>222,500</td>
</tr>
<tr>
<td><strong>PROSTATE CANCER</strong></td>
<td>161,360</td>
</tr>
<tr>
<td><strong>COLORECTAL CANCER</strong></td>
<td>135,430</td>
</tr>
</tbody>
</table>

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5.4M cases of non-melanoma skin cancer diagnosed in 3.3M people, with some patients having more than one diagnosis.

Skin cancer cases don’t just outweigh these four cancers — they outweigh all cancers combined!

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American Cancer Society web site
Skin Cancer

- Melanoma
- Non-Melanoma Skin Cancer
  - Basal Cell carcinoma
  - Squamous Cell carcinoma
- Merkel cell carcinoma
- Angiosarcoma
- Lymphoma
- Sarcomas, etc
Skin Cancer

• More people are diagnosed with skin cancer each year in the U.S. than all other cancers combined.

• One in five Americans will develop skin cancer by the age of 70.3

• The annual cost of treating skin cancers in the U.S. is estimated at $8.1 billion: about $4.8 billion for nonmelanoma skin cancers and $3.3 billion for melanoma.

*Information from skin cancer foundation*
Skin Cancer Mortality rates

- The vast majority of skin cancer deaths are from melanoma.
- In 2018 in the US, it is estimated that 9,320 deaths will be attributed to melanoma — 5,990 men and 3,330 women.
Non melanoma Skin Cancer Mortality

• An estimated 4.3 million cases of BCC are diagnosed in the U.S. each year, resulting in more than 3,000 deaths.

• > 1 million cases of SCC are diagnosed in the U.S. each year, resulting in more than 15,000 deaths.

Skin Cancer Foundation
Melanocytic Tumors
Lentigo

- Brown macules
- No seasonal variation
- Melanocyte numbers are increased
- Melanocytes singly distributed along the basal layer of the epidermis.
Nevi

- Go through natural evolution from lentigo to junctional, to compound, to dermal nevus and then may involute.
Table 113.6 Nevus phenotypes.

<table>
<thead>
<tr>
<th>NEVUS PHENOTYPES</th>
<th>Normal nevus pattern</th>
<th>Abnormal nevus phenotype</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number Size</td>
<td>None to few (&lt;25) nevi &lt;5 mm</td>
<td>Many (&gt;50) nevi</td>
</tr>
<tr>
<td>Color</td>
<td>Uniform or homogeneous color</td>
<td>Variable: small to large, often several &gt;5 mm</td>
</tr>
<tr>
<td>Borders</td>
<td>Well circumscribed</td>
<td>Some to many nevi with irregular or haphazard color, erythema Irregular or ill-defined borders</td>
</tr>
</tbody>
</table>

“Dysplastic” Nevi

- Synonyms: Atypical nevus, Clark’s nevus
- Used for clinically atypical lesion with characteristic histology
- Single lesions common
- Not “pre-malignant”
- Multiple nevi associated with increased risk of melanoma
- Dysplastic nevus syndrome associated with very high risk
Biopsy of atypical nevi

• Ideally get entire lesion
  – Melanoma prognosis and management based on depth
  – Partial sampling may miss diagnostic area
• Either punch or adequately deep “scoop” shave an option
CONCLUSIONS AND RELEVANCE This consensus statement reviews the complexities of management of CAN/DN. A review of the literature and 2 rounds of a structured Delphi consensus resulted in the following recommendations: (1) mildly and moderately DN with clear margins do not need to be reexcised, (2) mildly DN biopsied with positive histologic margins without clinical residual pigmentation may be safely observed rather than reexcised, and (3) observation may be a reasonable option for management of moderately DN with positive histologic margins without clinically apparent residual pigmentation; however, more data are needed to make definitive recommendations in this clinical scenario. Copyright © 2015 American Medical Association. All rights reserved.
RESULTS The 498 patients had a mean (range) age of 57.6 (14-93) years and 90% were male. Among 590 positive-margin DN, 191 were reexcised and 399 clinically observed without further surgery; 170 reexcised and 304 observed DN had available follow-up data, with mean (SD) follow-up of 5.5 (4.6) years. Cases in the observation group were more likely to demonstrate nevus recurrence than those that were reexcised (3.3% vs 0%; P =.02). Six of 304 (2.0%) observed DN subsequently developed melanoma at the same site, compared with 1 of 170 (0.6%) that were reexcised (P =.43). Five of 6 observed patients who developed melanoma initially underwent partial biopsy with grossly positive margins; 1 melanoma in situ evolved from an excisionally biopsied moderately dysplastic nevus 5 years later. Only 1 case of thin invasive melanoma (≤1 mm) was observed, and no deaths from melanoma arising from biopsy-proven DN occurred through the latest dermatology follow-up. New primary melanoma developed at other sites in 9.9% of excised and 9.4% of resected DN. CONCLUSIONS AND RELEVANCE In cases of mild and moderate DN with microscopically positive margins and no concerning clinical residual lesion, observation, rather than reexcision, was a reasonable management option. Partial biopsies of pigmented lesions suspicious for melanoma may lead to delayed melanoma diagnosis and should be discouraged.
A,B,C,D,E’s of Melanoma

- **A**symmetry
- **B**order irregularity
- **C**olor variability
- **D**iameter > 6mm
- **E**volving lesion

- Also “ugly duckling sign”, as patients tend to have “signature” nevi
Melanoma incidence by ethnicity

- White: 18.9/100,000
- Black: 1.02/100,000
- American Indian/Alaskan native: 2.02/100K
- Asian/Pacific islander: 1.46/100,000
- Hispanic: 4.01/100,000

http://seer.cancer.gov
• An estimated 178,560 cases of melanoma will be diagnosed in the U.S. in 2018. Of those, 87,290 cases will be in situ (noninvasive), and 91,270 cases will be invasive.

• An estimated 9,320 people will die of melanoma in the U.S. in 2018: of those, 5,990 will be men and 3,330 will be women.

Information from skin cancer foundation
Who’s at Risk?

• Constitutional Risk Factors:
  – Fair skin
  – Blue / green eyes
  – Red / blond hair
  – Tendency to tan poorly and burn easily
  – Family hx of melanoma (8-12x risk)
  – Personal hx of skin cancer
  – Large congenital nevi (>20cm)
Environmental risk factors

- Intense intermittent sun exposure
- Chronic sun exposure
- Residence in equatorial latitudes
- Tanning bed use, especially under age 35 (75% increased risk)
- Immunosuppression
Indoor Tanning

• The International Agency for Research on Cancer, an affiliate of the World Health Organization, includes ultraviolet (UV) tanning devices in its Group 1, a list of agents that are cancer-causing to humans. Group 1 also includes agents such as plutonium, cigarettes and solar UV radiation.

• Fifteen states plus the District of Columbia prohibit people younger than 18 from using indoor tanning devices. Brazil and Australia have banned indoor tanning altogether. Austria, Belgium, Finland, France, Germany, Iceland, Italy, Norway, Portugal, Spain and the United Kingdom have banned indoor tanning for people younger than age 18.
Indoor Tanning Youth Access Laws

- Under 18 prohibited from indoor tanning
- Under 17, 16 or 14 prohibited from indoor tanning
- Parental consent and/or accompaniment required for indoor tanning
- No indoor tanning restrictions for youth

* Three county bans in Maryland: Howard County, Montgomery County, and Prince George's County.
• Those who have ever tanned indoors have a 67 percent increased risk of developing squamous cell carcinoma and a 29 percent increased risk of developing basal cell carcinoma.

• Any history of indoor tanning increases the risk of developing basal cell carcinoma before age 40 by 69 percent.

• Women who have ever tanned indoors are six times more likely to be diagnosed with melanoma in their 20s than those who have never tanned indoors. At all ages, the more women tan indoors, the higher their risk of developing melanoma.

• Individuals who have used tanning beds 10 or more times in their lives have a 34 percent increased risk of developing melanoma compared with those who have never used tanning beds.

*Information from skin cancer foundation*
Malignant Melanoma (superficial spreading type)

- Most common type
- Starts with intrapidermal (in situ) disease and grows laterally, and then invades
Malignant Melanoma
Nodular type
Malignant Melanoma – Lentigo Maligna type

- Lentigo maligna is *in situ* melanoma
- Lentigo maligna melanoma is invasive melanoma
Acral-lentiginous melanoma
Breslow Depth

• Microscopic measurement from the granular layer of the epidermis to the point of deepest tumor invasion
• Most important prognostic factor
10 year survival by Breslow level

- <0.85mm 98%
- 0.86-1.69 mm 89%
- 1.70-3.59 mm 67%
- >3.60 mm 43%
Biopsy Techniques

• As depth is the most important prognostic factor, biopsy should be deep enough to determine depth
  – Punch, incisional or excisional biopsy optimal
  – Narrow margins best if sentinel node procedure anticipated
  – Deep shave technique has strong advocates, but risks inadequately deep biopsy
Excision Margins for Melanoma*

• In situ melanoma: 0.5 cm
• Invasive melanoma Breslow <2.0 mm: 1.0 cm
• Invasive melanoma Breslow > 2.0 mm: 2.0 cm

* AAD Task Force JAAD 2001;45:579-86.
Sentinel Node Biopsy

- Provides extremely useful prognostic information
- Appropriate to consider with T1b or greater tumors (Breslow depth >0.8 mm or any ulcerated tumor)
- Evidence that prognosis altered by undergoing procedure meager
Non-melanoma Skin Cancers

• Basal cell carcinoma and Squamous Cell carcinomas most common
• Ratio 20 BCC/SCC in immunocompetent individuals
• SCC outnumber BCC in the immunosuppressed
Basal Cell Carcinoma

- Most common type of cancer
- 90% occur on head and neck
- Related to chronic sun exposure
- Slow growth with local extension
- Rarely metastasize
Squamous Cell Carcinoma

- Primary risk factor is ultraviolet light exposure.
- Risk of metastasis <5% on sun exposed skin.
- Tumors on ear, lip and genitalia have highest risk.
- Incidence increased with immunosuppression. 100X risk with organ transplantation. Major cause of death in transplant patients.
Actinic Keratosis

- Scaly papules on sun-exposed skin. Small percentage develop into invasive SCC
- If unresponsive to therapy, or if dermal induration on palpation, biopsy needed to exclude SCC
- Appropriate treatment
  - Cryotherapy
  - Topical 5-fluorouricil
  - Topical imiquimod
Keratoacanthoma

- Characteristically rapidly growing
- Low grade squamous cell carcinoma
- May resolve spontaneously
Non-melanoma skin cancer

• Appropriate biopsy
  – Shave, punch incisional/excisional all appropriate
Major factors affecting management

• Clinical size
• Clinical appearance (discrete?)
• Location
• Histologic subtype
• Primary or recurrent
• Lesion duration
• Patient related factors
Treatment Techniques for NMSC

• **Curettage and electrodesiccation**: <2cm, low risk histology, not invasive into subcutis- appropriately done, has 95% cure rate.

• **Topical 5-FU or imiquimod**: Superficial basal cell carcinoma or squamous cell carcinoma in situ

• **Excision**

• **Mohs surgery**
Table 150.1 Indications for Mohs surgery.

<table>
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<th>INDICATIONS FOR MOHS SURGERY</th>
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<tbody>
<tr>
<td>• Recurrent tumor</td>
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<tr>
<td>• Tumor in high-risk anatomic locations (periorbital, perinasal, preauricular, perioral)</td>
</tr>
<tr>
<td>• Additional anatomic sites where tissue preservation is imperative (fingers, genitals)</td>
</tr>
<tr>
<td>• Aggressive histologic subtype: morpheaform, micronodular, sclerosing, or fibrosing BCC; or high-grade and deeply penetrating SCC</td>
</tr>
<tr>
<td>• Large tumors (&gt;2 cm)</td>
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<tr>
<td>• Tumors with poorly defined clinical borders</td>
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<tr>
<td>• Tumors arising in irradiated skin</td>
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<tr>
<td>• Tumors in immunosuppressed patients</td>
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<tr>
<td>• Tumors with positive margins on prior excision</td>
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<tr>
<td>• Tumors in chronic scar (Marjolin’s ulcer)</td>
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<tr>
<td>• Neviod BCC syndrome</td>
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<tr>
<td>• Tumors in xeroderma pigmentosa</td>
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<tr>
<td>• Tumors with perineural invasion</td>
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<tr>
<td>• Tumors in Bazex’s syndrome</td>
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PATHOLOGIC EXAMINATION OF TISSUE MARGINS

Representative sample of tissue examined by traditional ‘bread loaf’ pathologic examination

Piece of excised elliptical skin with central ‘slice’ removed

100% peripheral margin examined by Moh's micrographic surgery

Circle of excised tissue with peripheral 100% ‘pie tin’ specimen removed
Skin Cancer and the Primary Care Physician

• Make skin exams part of the annual screening exam
• Educate patients about sun protection
• Oppose indoor tanning
• When in doubt about a suspicious lesion, biopsy or seek consultation