Melanoma Update and Other Neoplasms of the Skin

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UCSF Dermatologic Surgery and Laser Center
Botox May Beat Cancer Concern in Race to Dermatologist. Wait Times Shorter for Patients Seeking Wrinkle Injections Than Those With Suspicious Moles

- **8 days median wait time for Botox**
- **26 days median wait time for changing mole**

Outline

• Melanoma epidemiology
• Risk factors
• Moles and Melanoma
• Early Diagnosis
• Tanning and Vitamin D
• Surgical Management of Melanoma
• Role and Indication for SLNBx
• Other skin tumors
Lifetime Risk Invasive Melanoma

**American Academy of Dermatology Annual Meeting, 2008*
## Top 10 Malignancies

### Estimated New Cases*

<table>
<thead>
<tr>
<th></th>
<th>Male</th>
<th></th>
<th>Female</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Male</strong></td>
<td></td>
<td></td>
<td><strong>Female</strong></td>
<td></td>
</tr>
<tr>
<td>Prostate</td>
<td>218,890</td>
<td>(29%)</td>
<td>Breast</td>
<td>178,480</td>
</tr>
<tr>
<td>Lung</td>
<td>114,760</td>
<td>(15%)</td>
<td>Lung</td>
<td>98,620</td>
</tr>
<tr>
<td>Bronchus</td>
<td>79,130</td>
<td>(10%)</td>
<td>Colon</td>
<td>74,630</td>
</tr>
<tr>
<td>Colon and Rectum</td>
<td>50,040</td>
<td>(7%)</td>
<td>Rectum</td>
<td>39,080</td>
</tr>
<tr>
<td>NHL</td>
<td>34,200</td>
<td>(4%)</td>
<td>NHL</td>
<td>28,990</td>
</tr>
<tr>
<td>Melanoma</td>
<td>33,910</td>
<td>(4%)</td>
<td>Melanoma</td>
<td>26,030</td>
</tr>
<tr>
<td>Kidney</td>
<td>31,590</td>
<td>(4%)</td>
<td>Thyroid</td>
<td>25,480</td>
</tr>
<tr>
<td>Leukemia</td>
<td>24,800</td>
<td>(3%)</td>
<td>Ovary</td>
<td>22,430</td>
</tr>
<tr>
<td>Oral Cavity</td>
<td>24,180</td>
<td>(3%)</td>
<td>Kidney</td>
<td>19,600</td>
</tr>
<tr>
<td>Pancreas</td>
<td>18,830</td>
<td>(2%)</td>
<td>Leukemia</td>
<td>19,440</td>
</tr>
<tr>
<td><strong>ALL SITES</strong></td>
<td><strong>766,860</strong></td>
<td>(100%)</td>
<td><strong>ALL SITES</strong></td>
<td><strong>668,470</strong></td>
</tr>
</tbody>
</table>

*Excludes basal and squamous cell skin cancers and in situ carcinoma except urinary bladder.
Note: Percentages may not total 100% due to rounding.

©2007, American Cancer Society, Inc., Surveillance Research
Melanoma ranks second among all cancers in years of productive life lost, 2nd only to leukemia.
Approximately $1.5 billion is spent in the United States each year on treatment of melanoma.

### Annual Change of Cancer Incidence 1995-2004

<table>
<thead>
<tr>
<th>Cancer Site</th>
<th>Annual Percent Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>All sites</td>
<td>-0.5</td>
</tr>
<tr>
<td>Prostate</td>
<td>-0.4</td>
</tr>
<tr>
<td>Breast</td>
<td>-1.1</td>
</tr>
<tr>
<td>Lung</td>
<td>-1.3</td>
</tr>
<tr>
<td>Colon</td>
<td>-1.6</td>
</tr>
<tr>
<td>Bladder</td>
<td>0.1</td>
</tr>
<tr>
<td>Melanoma</td>
<td>1.8</td>
</tr>
<tr>
<td>NHL</td>
<td>0.2</td>
</tr>
<tr>
<td>Kidney</td>
<td>2.3</td>
</tr>
<tr>
<td>Uterus</td>
<td>-1.2</td>
</tr>
<tr>
<td>Leukemia</td>
<td>-1.1</td>
</tr>
<tr>
<td>Pancreas</td>
<td>0.3</td>
</tr>
<tr>
<td>Oral Cavity</td>
<td>-1.3</td>
</tr>
<tr>
<td>Thyroid</td>
<td>5.7</td>
</tr>
<tr>
<td>Ovary</td>
<td>-1.4</td>
</tr>
<tr>
<td>Stomach</td>
<td>-1.4</td>
</tr>
</tbody>
</table>

Estimated New Melanoma Cases & Deaths: US, 2007

Total Cases: 59,940
Female Cases: 26,030
Male Cases: 33,910

Total Deaths: 8,110
Female Deaths: 2,890
Male Deaths: 5,220

Death Rates:
- Total: 65% vs 35%
- Female: 35%
- Male: 58% vs 42%

Melanoma Incidence

<table>
<thead>
<tr>
<th>Type</th>
<th>Number (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Distant</td>
<td>1900 (3.5%)</td>
</tr>
<tr>
<td>Regional</td>
<td>5000 (9%)</td>
</tr>
<tr>
<td>4+ mm</td>
<td>2400 (3%)</td>
</tr>
<tr>
<td>1-4 mm</td>
<td>12,300 (23%)</td>
</tr>
<tr>
<td>&lt; 1mm</td>
<td>~40,000 (65%)</td>
</tr>
</tbody>
</table>

The majority (65%) of patients present with “low risk” or thin melanomas.

The Challenge

- Incidence of melanoma continues to rise
- Screening efforts have lead to capture of thinner melanomas
- Mortality from melanoma continues to rise
  - 4% of all skin cancers
  - 80% of deaths from skin cancer
  - 14% metastatic disease survive 5 years
The Clark Model of Melanoma Progression

<table>
<thead>
<tr>
<th>Stage</th>
<th>Benign Nevus</th>
<th>Dysplastic Nevus</th>
<th>Radial-Growth Phase</th>
<th>Vertical-Growth Phase</th>
<th>Metastatic Melanoma</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Epidermis</td>
<td>Basement membrane</td>
<td>Dermis</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Patch**

**Raised**

Miller & Mihm: MELANOMA; NEJM 2006
## The Clark Model of Melanoma Progression

<table>
<thead>
<tr>
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<th>Radial-Growth Phase</th>
<th>Vertical-Growth Phase</th>
<th>Metastatic Melanoma</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Epidermis</td>
<td>Basement membrane</td>
<td>Dermis</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Biologic Events
- **Benign**
  - Limited growth
- **Premalignant**
  - Lesions may regress
  - Random atypia
- **Radial-Growth Phase**
  - Decreased differentiation
  - Unlimited hyperplasia
  - Cannot grow in soft agar
  - Clonal proliferation
- **Vertical-Growth Phase**
  - Crosses basement membrane
  - Grows in soft agar
  - Forms tumor
- **Metastatic**
  - Dissociates from primary tumor
  - Grows at distant sites

### Molecular Lesions
- **BRAF mutation**
- **CDKN2A loss**
- **PTEN loss**
- Increased **CD1**

#### Additional Markers
- E-cadherin loss
- N-cadherin expression increase
- αVβ3 integrin expression increase
- MMP-2 expression increase
- Survivin
- Reduced **TRPM1**
- Absent **TRPM1**
P16 mutations are found in 30-50% cases of familial melanoma; and 25-40% of sporadic cases.

Uncontrolled growth
Chances of finding CDKN2A (p16 mutation)

- 2 affected 1\textsuperscript{st} degree < 5%
- 3+ 20-40%
- 6+ >60%
- Multiple primary 10-15%
When to offer testing CDKN2A

- Penetrance is highly variable
- Offering testing is premature
- Likelihood of finding mutation is low
- Doesn’t change clinical management
Families at Increased Risk of MM

- Familial Melanoma (FAMMM)
- XP 10,000 fold increased risk
- Werner Syndrome
- Retinoblastoma 50-100 fold increased risk
- Li-Fraumeni
• **Primary site**  
  Extremities females, trunk in males

• **Acral lentiginous melanoma**  
  Any ethnic origin  
  No history of significant sun exposures
Regional lymph nodes
Skin, soft tissues, lung, liver
Staging

- **Stage I**
  - "low risk" for metastases
- **Stage II**
  - "intermediate risk" for metastases
- **Stage III**
  - Regional metastasis
- **Stage IV**
  - Distant metastasis

* Presence of ulceration “up-stages” the prognosis
Melanoma Thickness

<table>
<thead>
<tr>
<th>Thin</th>
<th>&lt; 1mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intermediate</td>
<td>1-4mm</td>
</tr>
<tr>
<td>Thick</td>
<td>&gt; 4mm</td>
</tr>
</tbody>
</table>
## Survival

<table>
<thead>
<tr>
<th>Stage</th>
<th>5-year</th>
<th>10-year</th>
</tr>
</thead>
<tbody>
<tr>
<td>MMIS</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>Stage IA</td>
<td>95%</td>
<td>88%</td>
</tr>
<tr>
<td>Stage IB</td>
<td>90%</td>
<td>80%</td>
</tr>
<tr>
<td>Stage IV</td>
<td>10%</td>
<td>8%</td>
</tr>
</tbody>
</table>

- < 0.75mm: 97-99% 5 year survival
- > 3mm: <50% 5 year survival

5 year survival is also indicated for larger tumors.
Risk Factors

- Fair skin
- History of sunburn
- Excessive sun exposure
- Sunny or high-altitude
- Moles
- FH
- Immunodeficiency
- Carcinogen exposure
- Hereditary conditions

Can develop in people of darker complexion

The greatest damage seems to occur before you're 18 but sunburn in adulthood also are a risk factor

One dysplastic nevus doubles risk of MM

FAMMM

coal tar, the wood preservative creosote, arsenic compounds in pesticides and radium
<table>
<thead>
<tr>
<th>Risk Factor</th>
<th>RR</th>
<th>Risk Factor</th>
<th>RR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fair skin</td>
<td>2-18</td>
<td>PH of 1 melanoma</td>
<td>9-10</td>
</tr>
<tr>
<td>Freckles</td>
<td>3-20</td>
<td>FH of melanoma</td>
<td>8</td>
</tr>
<tr>
<td>Blonde hair</td>
<td>2-10</td>
<td>50-100 common nevi</td>
<td>2-64</td>
</tr>
<tr>
<td>Red hair</td>
<td>2-6</td>
<td>1 or 2 atypical moles</td>
<td>2-11</td>
</tr>
<tr>
<td>Inability to tan</td>
<td>2-5</td>
<td>AMS</td>
<td></td>
</tr>
<tr>
<td>Blue eyes</td>
<td>2-5</td>
<td>No PH/FH</td>
<td>2-92</td>
</tr>
<tr>
<td>Constant Sun</td>
<td>2-5</td>
<td>PH, no FH</td>
<td>8-127</td>
</tr>
<tr>
<td>Intermittent Sun</td>
<td>2-3</td>
<td>1 family member w/MM</td>
<td>33-444</td>
</tr>
<tr>
<td>Immunosuppp</td>
<td>2-8</td>
<td>2 family member w/MM</td>
<td>85-1269</td>
</tr>
<tr>
<td><strong>NMSC</strong></td>
<td><strong>3-17</strong></td>
<td><strong>Kopf &amp; Bart. AMS. JAAD 1995</strong></td>
<td></td>
</tr>
</tbody>
</table>
PEOPLE AT HIGH RISK OF MELANOMA

- Prior history of melanoma
- Familial melanoma (pancreatic cancer)
- Atypical mole syndrome
  - $\geq 50$ common nevi
  - $\geq 5$ atypical nevi
- Multiple melanocytic nevi
  - $\geq 100$ common nevi
Moles and melanoma risk
Are Moles Precursors to Melanoma?
May 1978: Origin of familial malignant melanomas from heritable melanocytic lesions. 'The B-K mole syndrome'

W. H. Clark Jr, R. Reimer, M. Greene, A. Ainsworth and M. Mastrangelo

- Described distinct mole syndrome in 6 melanoma prone families with a total of 37 patients
- “B-K mole syndrome” designation based on last names of 1st two families studied
- The transformation of two B-K moles into malignant melanomas was documented photographically
Sequential dermatoscopic images from Drs. Garbe and Bauer
Pre-existing Nevi and Melanoma

What percentage of melanomas evolve from an existing mole?

Excision of all nevi would reduce the melanoma risk to zero.

<table>
<thead>
<tr>
<th>Reference</th>
<th>No. of cases</th>
<th>Histologic types</th>
<th>Percent of associations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stolz et al. 1989</td>
<td>150</td>
<td></td>
<td>22 %</td>
</tr>
<tr>
<td>Stadler &amp; Garbe 1991</td>
<td>581</td>
<td></td>
<td>23 %</td>
</tr>
<tr>
<td>Friedman et al 1983</td>
<td>557</td>
<td></td>
<td>23.3 %</td>
</tr>
<tr>
<td>Kopf et al. 1987</td>
<td>679</td>
<td>all types</td>
<td>26 % for &lt; 1.5 mm, 15 % for 1.5 - 3 mm</td>
</tr>
<tr>
<td>Rhodes et al. 1983</td>
<td>234</td>
<td></td>
<td>27.4 %</td>
</tr>
<tr>
<td>Clark et al. 1984</td>
<td>241</td>
<td></td>
<td>30.7 %</td>
</tr>
<tr>
<td>Sagebiel 1993</td>
<td>1954</td>
<td>SSM/NM</td>
<td>57.6 %</td>
</tr>
</tbody>
</table>
31!

Courtesy Claus Garbe, MD and Jurgen Bauer, MD
Eberhard-Karls-University Tuebingen, Germany
DERMATOSCOPY INCREASES SENSITIVITY AND SPECIFICITY
Mole Counts and Melanoma
Melanoma risk and number of common melanocytic nevi.

How does mole count relate to melanoma risk? High mole count is a marker of melanoma risk.
Atypical Moles

- Clark’s nevi or dysplastic nevi
- Potential pre-cursors of melanoma
- Markers of increased melanoma risk
Melanoma risk and number of atypical melanocytic nevi.

1 dysplastic nevus doubles risk of melanoma
Atypical Mole Syndrome
Atypical Mole Syndrome
- >100 common nevi
- At least one > 8mm
- At least one that is clinically atypical
- FH not required, but if (+) then even higher risk of melanoma

FAMMM
- Melanoma in 1 or more first- or second-degree relatives
- Many (often >50) melanocytic nevi, at least 1 clinically atypical
- Histologic confirmation of dysplasia
Persons with atypical moles are not at equal risk

- Atypical moles
- (+) FH
- (+) PH
- (+) PH and FH
- FAMMM

Melanoma Risk

RR 2-92

RR 85-1269
What is the risk of a mole transforming into melanoma over a lifetime?
Risk of Transformation into Melanoma

Tsao et al.: Arch Dermatol., 2003
• Annual transformation rates of a single MN ranged from a minimum of 1:200000 in patients <40yo to a maximum of 1:33000 in > 60yo
• Lifetime risk for transformation of any melanocytic nevus in a 20yo Caucasian: 1:3000 in men, 1:10,000 in women

Bauer et al.: Arch Dermatol., 2004
Lifetime risk in German population: < 1:2000 for MN, < 1:60 for DN

Sagebiel (personal communication)
  1:150,000 (MN)
  1:2000 (DN)
Moles and Melanoma

- Screen and risk stratify
- Low rate of transformation into melanoma
- Atypical nevi and large number of nevi are risk factors for melanoma
- Avoid prophylactic excisions of large number of nevi
Will I get another melanoma?
1993 SURGERY, Slingluff and Seigler (DUKE)
- 7899 patients with melanoma, 3.6% (283) with multiple (2-9)
- 1 year risk 2%
- 5 year risk 3.4%
- 10 year risk 5.3%
- 64% within 5 years

1999 Ann Surg Onc, Elashoff and Morton (City of Hope)
- 3300 patients with stage I and II, 3.4% developed multiple melanomas
- 5 year risk 2.8%
- 10 year risk 3.6%
- Bimodal risk: 15-39; 60-79
- Did not report on thickness of the 2nd primary
- 78% within 5 years

2003 Cancer, Goggins and Tsao (HARVARD)
- SEER data base 61,245 patients with melanoma
- 1 year risk 1%
- 5 year risk 2.1%
- 10 year risk 3.2%
- No comment on thickness of 2nd primary melanoma
- 66% within 5 years

Cumulative 10 year risk of a second primary is 3-5%
Majority of this risk occurs within the first 5 years
Multiple Primary Melanomas

- History of 2 melanomas – 3rd 30% at 5 years
- Dysplastic Nevi
- FH
- Mutations (p16, tumor suppressor)

The magnitude of risk depends on presence of nevi and other risk factors

Patel and Coit, JAMA 2005
Early Diagnosis of Melanoma

http://www.cs.wright.edu/people/faculty/agoshtas/skinseg.zip
Nodular melanoma

- Make up 15% of all types of melanoma
- Frequently lack classic ABCDs
- Account for thicker melanomas
- Account for majority of mortality from melanoma
Ultraviolet Radiation

- Genetic changes
- Impairs cutaneous immune function
- Induces formation of DNA-damaging reactive oxygen species
- Melanin is main defense against UV radiation
- Variation in pigmentation associated with variations in susceptibility to melanoma
- Nature of exposure is important
Tanning and melanoma risk

- 1,000,000 people use tanning beds every day in the US!
- 50,000 tanning facilities nationwide
- 28 million users of tanning facilities

NO SUCH THING AS A ‘PRE-VACATION’ or ‘PRE-SUMMER’ TAN
Vitamin D

- Incidental sun exposure of face and hands 3x/week is sufficient to achieve normal serum levels of Vitamin D
- Daily intake of 2 8-oz glasses of fortified milk or OJ
- One MVI

Wolpowitz and Gilchrest. The Vitamin D question: how much do you need and how should you get it. JAAD 2006.
Surgical Management and Sentinel Lymph Node Biopsy in Cutaneous Melanoma
Diagnostic Biopsy in Primary Melanoma

• Goals
  – Rule out lesions with potentially similar features
    • seborrheic keratosis
    • pigmented basal cell cancer
    • solar lentigines
    • atypical nevi
  – Determine depth and level of invasion
  – Identify other prognostic features of the 1º lesion

• Narrow excisional biopsy (2-3 mm)
# Surgical Excision for Localized Cutaneous Melanoma: Recommended Margins

<table>
<thead>
<tr>
<th>Melanoma Thickness</th>
<th>Margin*</th>
</tr>
</thead>
<tbody>
<tr>
<td>≤1 mm</td>
<td>1 cm</td>
</tr>
<tr>
<td>1.01–2.00 mm</td>
<td>1–2 cm†</td>
</tr>
<tr>
<td>2.01–4.00 mm</td>
<td>2 cm</td>
</tr>
<tr>
<td>&gt;4 mm</td>
<td>2 cm</td>
</tr>
</tbody>
</table>

*Maximal achievable with 1 closure
†Where anatomically feasible

NCCN Practice Guidelines: Melanoma.
Sentinel Lymph Node (SLN) Mapping and Biopsy

- Lymphatic metastases from tumor spread first through afferent channels
- SLN is first node along those channels

Sentinel Lymph Node and Melanoma: MSLT-1 trial 2006

Primary Melanoma (1269)

WLE (all pts)

Observation

SLNBx: Nodes tested at time of WLE

(+)

(−)

(+)

(−)

CLND when clinically palpable

CLND tested at time of WLE

CLND

CLND

Morton et al: Sentinel Node Biopsy or Nodal Observation in Melanoma. NEJM 2006; 355(13);1307-17
<table>
<thead>
<tr>
<th></th>
<th>OBS</th>
<th>SLNBx</th>
</tr>
</thead>
<tbody>
<tr>
<td>5yr- OS</td>
<td>86.6%</td>
<td>87.1%</td>
</tr>
<tr>
<td>5yr- DFS</td>
<td>72%</td>
<td>78%</td>
</tr>
</tbody>
</table>
Subgroup analysis of (+) nodal disease

<table>
<thead>
<tr>
<th></th>
<th>OBS</th>
<th>SLNBx</th>
</tr>
</thead>
<tbody>
<tr>
<td>5yr-OS</td>
<td>52%</td>
<td>72%</td>
</tr>
<tr>
<td>Mean # nodes</td>
<td>3.3</td>
<td>1.3</td>
</tr>
</tbody>
</table>
What information and benefit do we get from the SLNBx procedure in melanoma

- Prognostic information - those with nodal disease do worse compared to node (-) patients
- Allows patient selection for additional treatment (such as interferon)
- In patients with nodal disease, a complete dissection:
  - Decreases bulky tumor recurrence
  - Offers significant disease free survival
  - Appears to offer overall survival advantage
## Sentinel node positivity by depth of melanoma

<table>
<thead>
<tr>
<th>Depth (mm)</th>
<th>Positivity</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt; 1</td>
<td>nearly 0%</td>
</tr>
<tr>
<td>1-2.9</td>
<td>16-17%</td>
</tr>
<tr>
<td>3-3.9</td>
<td>50%</td>
</tr>
<tr>
<td>4-4.9</td>
<td>40%</td>
</tr>
</tbody>
</table>

Indications for SLN Biopsy

- Melanomas > 1 mm thick
- Melanomas of unknown primary
- Melanomas < 1 mm thick
  - Clark level IV or V/ Ulceration (T1b)
  - Vascular invasion/ microsatellites
  - Extensive regression
Other Neoplasms of the Skin
The differential diagnosis includes

A. Melanoma
B. Merkel cell carcinoma
C. Squamous cell carcinoma
D. Cutaneous metastasis
E. All of the above
Merkel Cell Carcinoma

- Rare and aggressive neuroendocrine carcinoma
- Higher mortality than melanoma (25% at 3 years)
- Significant local recurrence, regional, distant metastasis
- Disparate recurrence and survival data
- Therapy differs from other cutaneous malignancies
- Optimal treatment remains controversial
Epidemiology: MCC

Rate of increase: 8% per year 1986-2001 (P<0.05)

SEER-9 data

Rate per 100,000

Epidemiology

- Organ transplantation 10 fold risk
- HIV infected population 8 fold risk
- Hematologic malignancy
- Post radiation therapy
- In association with other cutaneous malignancies
- Polyomavirus

Clinical Presentation

- Red/violaceous non-tender nodule
- Rapid growth
- Sun exposed anatomic location
- Rarely may ulcerate
- "Cyst" on biopsy ddx
Survival: Stage at Presentation

MCC is cause of death in 35%, within first 3 years of diagnosis.

70 yo woman presented with a scar-like lesion, no antecedent trauma
A. Merkel cell carcinoma
B. Basal cell carcinoma
C. Metastatic tumor
D. Squamous cell carcinoma
E. Trauma
Cutaneous Metastasis

Occur in ~ 5% of patient with malignancy

<table>
<thead>
<tr>
<th>WOMEN</th>
<th>MEN</th>
</tr>
</thead>
<tbody>
<tr>
<td>Breast – 69%</td>
<td>Lung – 24%</td>
</tr>
<tr>
<td>Colon – 9%</td>
<td>Colon – 19%</td>
</tr>
<tr>
<td>Melanoma 5%</td>
<td>Melanoma – 13%</td>
</tr>
<tr>
<td>Ovaries – 4%</td>
<td>Oral cavity – 12%</td>
</tr>
<tr>
<td>Lung – 4%</td>
<td></td>
</tr>
</tbody>
</table>
55yo wm 10 years s/p renal transplant, presents with this:
Diagnosis

A. Merkel cell
B. Melanoma
C. Basal Cell
D. Squamous Cell
E. Seborrheic keratosis
Post-transplant skin cancer

- Nearly 30,000 organ transplantations annually
- Majority being kidney transplants
- NMSC most common
- 65 fold increased risk SCC
- 20 fold increased risk SCC – lip
- 10 fold increased risk BCC
- 3-4 fold increased risk of melanoma
- Following 20 years of transplantation, 40-50% will get at least 1 NMSC
Organ Transplant Recipient
Organ Transplant Recipient

Photo courtesy of Isaac Neuhaus, MD
Diagnosis

A. Seborrheic keratosis
B. B cell cutaneous lymphoma
C. Leukemia cutis
D. Basal cell
E. Melanoma
Leukemia cutis

- Infiltration of neoplastic leukocytes into the epidermis, dermis, or subcutis
- Clinically identifiable cutaneous lesions
- Usually have concomitant systemic leukemia
- Pathogenesis not well defined
- Skin tropism may be due to chemokine receptors and adhesion molecules
78yo presents with dry flaky skin that is diffuse and associated with weight loss and malaise

A. Xerosis
B. Psoriasis
C. Sézary syndrome
D. Drug eruption
E. Adult onset atopic dermatitis
Erythrodermic CTCL – Sezary Syndrome

- Leukemic phase of cutaneous T cell lymphoma (*Mycosis fungoides*)
- CTCL is considered a type of NHL
- Older patient
- Red, burning, scaly skin
- Weight loss, lymphadenopathy, malaise
QUESTIONS
What percent of newly diagnosed melanomas are thin and can be managed with surgery alone?

A. 10%
B. 25%
C. 50%
D. 65%
What is the 10-year cumulative risk of a 2\textsuperscript{nd} melanoma?

A. less than 1%
B. 1-2%
C. 3-5%
D. 20%
E. 50%
Having one atypical mole increases your lifetime risk of melanoma by:

A. 1x
B. 2x
C. 3x
D. 10x
E. 100x
What percent of melanomas arise from a pre-existing mole?

A. 100%
B. 80%
C. 50%
D. 30%
E. 5%
The projected lifetime risk of melanoma in the United States by 2010

A. 1/1500
B. 1/150
C. 1/100
D. 1/50
E. 1/25
The average wait time to see a dermatologist for a changing mole is

A. 2.6 mos
B. 2.6 weeks
C. 26 days
D. 1 year
The average wait time to see a dermatologist for Botox is

A. 8 mos
B. 8 weeks
C. 8 days
D. 8 minutes
E. 8 seconds