Melanoma

The Lecture You Can’t Afford to Miss
1) Importance of Early Detection
2) Factors that Influence Survival
3) Understanding Dysplastic Nevi
4) Melanoma and Pregnancy
5) Biopsy Techniques
6) Understanding Sunscreen
The Importance of Early Detection

- Melanoma is the leading cause of death from diseases of the skin
- 6th most common cancer in the US
- 4% of skin cancers & 80% of deaths
History

- Alexander Breslow (1970)
  - <0.76mm - Excellent Prognosis
- “ABCDs” of Melanoma (1985)
- History of Previous Melanoma (2001)
  - 10-25 x greater risk
  - Primary Lesion (1.32mm)
  - Secondary Lesion (<0.63mm)
Clinical Characteristics

- Similar regardless of anatomic site
- Majority follow ABCDs rule
Asymmetry

Lesion cannot be easily divided in half
Border Irregularity

Regular border

Irregular border
Color Variability

- Subtle shades of tan/brown to black, grey-blue, white.
Diameter

\[ \frac{1}{4} \text{ inch or } 6 \text{ mm} \]
Evolving Lesion

- Change in color
- Change in size
- Change in shape
- Change in elevation
- Change in surface
- Change in surrounding skin
- Change in sensation
Partnership

- Early detection of melanoma saves lives
- Clinical features that distinguish melanomas from benign lesions
- Self examination
Age

- Early childhood - melanoma is rare
- Later childhood - nevi
- Teenage years - start screening
- >35yrs - non-melanocytic pigmented lesions
- 50yrs - Mean age for presentation
- Sex
  - Women - birth to 39
  - Men - after age 40
History

- New or changing mole
- Symptoms such as bleeding, itching, ulceration, and pain in a pigmented lesion
- Personal or family history of skin cancer
- Personal or family history of numerous nevi
- Personal or family history of dysplastic nevi
- Social history - sun exposure/sunburns
Examination

- Good light source
- Magnifying lens
- Dermatoscope
- Nurse present
- Have a routine
- Men - trunk
- Women - legs
Factors Influencing Survival in Melanoma Patients
Introduction

- Important to identify those at high risk
- 5-year survival rate
  - 1930s - 43%
  - 1983 - 83%
- Importance of understanding prognosis
  - Educating public to recognize early lesions
  - Adjuvant therapy for patients at high risk for relapse
  - Better understand the disease
Thickness

- Clark Classification
  - Based on anatomic level of invasion
- Breslow Thickness
  - Based on tumor depth
Ulceration

- Loss of continuity of the epithelium
- Microscopic ulceration
- Greater width ulceration (3mm)

<table>
<thead>
<tr>
<th>Depth (mm)</th>
<th>Ulceration</th>
<th>No Ulceration</th>
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<tbody>
<tr>
<td>&lt; 1.0</td>
<td>91</td>
<td>95</td>
</tr>
<tr>
<td>1.01-2.0</td>
<td>77</td>
<td>89</td>
</tr>
<tr>
<td>2.01-4.0</td>
<td>63</td>
<td>79</td>
</tr>
<tr>
<td>&gt;4.0</td>
<td>45</td>
<td>67</td>
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Anatomic Site

- Acral lesion (poorest prognosis)
  - Ears
  - Hands/Feet
- Head and Neck
- Trunk
- Arms and Legs (best prognosis)
Mitotic Rate

- Tumor mitotic rate was the second strongest independent prognostic factor after tumor thickness.
Tumor Infiltrating Lymphocytes

- Classified as:
  - Brisk (77% survival rate)
  - Non-brisk (53% survival rate)
  - Absent (77% survival rate)
Regression

✧ Common feature
✧ Relationship to prognosis isn’t clear
✧ Loss of visual tumor
✧ Understaging?
Age/Gender

- Advancing age - poor prognosis
- Thicker lesions at diagnosis
- Men and women have equal prognosis

<table>
<thead>
<tr>
<th>Decade</th>
<th>Five-Year Survival Rate</th>
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<tbody>
<tr>
<td>30’s</td>
<td>87%</td>
</tr>
<tr>
<td>60’s</td>
<td>78%</td>
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<tr>
<td>70’s</td>
<td>71%</td>
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<tr>
<td>80’s</td>
<td>60%</td>
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Metastases

- **Nodal metastases**
  - Indicates poorer prognosis
- **Distant metastases**
  - Most ominous clinical finding
  - Median survival is 7.5 months
- **Lactate Dehydrogenase Level**
Understanding Dysplastic Nevi
Introduction

- Presence of dysplastic nevi (DPN) identifies if an individual is at risk for developing melanoma
- DPN fall in the tumor pathway between banal nevi and melanoma
- There appears to be a genetic basis
The Continuum

Dysplastic Nevi

Nevi > Mild > Moderate > Severe > Melanoma
Management

- Family/personal hx of DPN/MM
- Thorough physical exam
- Regular follow-up
- Biopsy of lesions suspicious for MM
- Prophylaxis through sun protection
- Nevi reduction to prevent MM
Genetic Counseling

- Completion of the human genome project in 2003
- 10% of patients with MM will have family member affected
- Those with a MM susceptibility gene have an 82-100% lifetime risk of MM
Removal of Dysplastic Nevi

- Some DPN progress to MM
- Biopsies are obtained to exclude melanoma not confirm DPN
- Complete excision of incompletely excised DPN
Melanoma and Pregnancy

- **MM** is one of the most common cancers diagnosed during pregnancy (8%).
- Most common cancer to metastasize to the placenta.
- 25% of newborns are affected with placental metastases.
- No evidence that pregnancy affects the prognosis in pregnant women.
Melanoma and Pregnancy

- Should a woman postpone or avoid subsequent pregnancy after being diagnosed with MM?
- How should patients with a history of MM be advised concerning the use of oral contraceptives or hormone replacement therapy?
Biopsy Techniques
Key Points

- Critical start to the diagnosis of skin cancer
- A properly performed biopsy is important
- It is important to understand and master the different types of biopsy techniques
Types of Biopsies

- **Excisional Biopsy** - total removal of the suspicious lesion
- **Incisional Biopsy** - To evaluate only a part of a suspicious lesion
- **Shave Biopsy** - Refers to the shallow removal of a lesion
- **Saucerization Biopsy** - Goes through the dermis into the subcutaneous fat
- **Punch Biopsy** - Circular blade removes down to subcutaneous fat and is sutured
Things to Consider

- **Glove selection**
- **Anesthesia**
  - Lidocaine w/epi - Low pH
  - Allergy vs side effect
  - Diphenhydramine or normal saline
- **Contraindications**
- **Careful handling of the specimen**
Punch Biopsy

- Available in 1.5-10mm sizes
- May be used for excisional and incisional biopsies
- Traction is placed perpendicular to the natural skin tension lines
- Care must be taken not to crush the specimen
Shave Biopsy

- Used to remove the superficial component of the lesion that is raised above the level of the skin
- Cosmetically elegant
Saucerization Biopsy

- Deeper than a shave biopsy
- How most pigmented lesions are biopsied
Excisional Biopsy

- Preferred method to biopsy a suspicious pigmented lesion
- Can be performed with a punch or an elliptical excision

![Diagram of an elliptical excision with a ratio of Length:Width = 3:1 and a 30° angle]
Understanding Sunscreen
What is a Sunscreen

A Sunscreen is...

- Anything that protects the skin from UV radiation (i.e. umbrellas, hats and clothing)
- Any lotions, oils and/or creams that help to protect the skin from UV radiation.
  - Sun blocks create a barrier that reflect UV light away from the skin
  - Sunscreens absorb the UV rays and help to prevent penetration through the skin
What Does S.P.F. Stand for?

- S.P.F. stands for Sun Protection Factor
- SPF can range from 2-70
- The higher the SPF rating, the more it will protect your skin
Choosing and Using Sunscreens

- Use a sunscreen with an SPF of 15 or higher
- Apply sunscreen 15-30 minutes before going outside
- Apply sunscreen generously
- Reapply sunscreen every 2 hrs