Acral lentiginous melanoma: A rare variant with unique diagnostic challenges

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Introduction

- Acral lentiginous melanoma (ALM), named for its location and histological growth pattern, is a rare variant of melanoma. ALM presents on palms, soles, or in association with the nail unit. While ALM accounts for approximately 5% of melanomas diagnosed each year, it is the most commonly diagnosed subtype of melanoma in non-Caucasian patients.

Case Presentation

- **HPI:** A 72-year-old, Fitzpatrick skin type (FST) 5 female presented with concern of an enlarging dark spot on the plantar surface of her right foot. She stated she first noticed the lesion ten years ago, but that it had been rapidly enlarging and darkening for the past 3 years. Patient denied pain, pruritus, or any other symptoms associated with the lesion. She also denied systemic symptoms including fevers, chills, unintentional weight loss, cough and headache.

- **PMHx:** diabetes mellitus II, essential hypertension

- **Physical exam:** 3 x 1.5 centimeter poorly demarcated, brown to black patch with two adjacent smaller brown to black patches, all with scalloped borders, were noted on the right plantar surface (Figure A).

Diagnosis and Treatment

- **Histopathology:** Multiple shave biopsies were performed to remove all clinical pigment; pathology revealed extensive proliferation of malignant melanocytes in a lentiginous, nested and pagetoid array consistent with malignant melanoma in situ, acral lentiginous type (Figure B).

- **Treatment:** Patient underwent wide local excision, under general anesthesia, to the level of underlying fascia with 1 cm margins. An acellular allograft dermal matrix was utilized to close the defect created by lesion removal. Surgical margins were negative for residual acral lentiginous melanoma. No further treatment was required. Patient was instructed to follow with dermatology for full body skin exams every 3 months.

Discussion

- While the incidence of ALM is similar in all racial and ethnic groups, ALM represents a disproportionate percentage of melanomas in darker skinned individuals. This may be due to unique pathophysiology of ALM as these lesions often develop on sun protected areas, in contrast to other forms of melanoma, in which UVB exposure is a well-known risk factor for development.

- While available treatment options for cutaneous melanomas continue to improve, plantar melanomas, the most common site of involvement in non-Caucasian patients, are often associated with a poor prognosis.

- While the explanation for this is likely multi-factorial, one important factor is that non-Caucasian ethnic groups tend to present with more advanced tumors than Caucasian patients. Reasons for this may include less access to preventative screenings and a misconception that darker races do not develop skin cancer.

- Current public health education programs for skin cancer are directed towards Caucasian patients, specifically high-risk individuals with fair skin and light eyes. Physician training, patient education and public awareness campaigns directed toward all ethnic groups may decrease time to diagnosis for ALM and, therefore, lead to more favorable prognosis.

Table 1: Pathogenic Mutations by Melanoma Subtype

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<thead>
<tr>
<th>Melanoma Subtype</th>
<th>Genetic Mutation</th>
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<tbody>
<tr>
<td>Superficial Spreading</td>
<td>BRAF (V600E)</td>
</tr>
<tr>
<td>Nodular</td>
<td>NRAS</td>
</tr>
<tr>
<td>Lentigo Maligna</td>
<td>BRAF (V600E)</td>
</tr>
<tr>
<td>Acal Lentiginous/Mucosal</td>
<td>cKIT</td>
</tr>
<tr>
<td>Uveal</td>
<td>GNAQ</td>
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References