ELSEVIER

Seminars in Cutaneous Medicine and Surgery

Nonmelanoma Skin Cancer in Persons of Color

Brooke A. Jackson, MD

Skin cancer is the most common form of cancer in the United States. Although skin cancer is less common in persons of color than in Caucasians, the rates of morbidity and mortality associated with skin cancer often are significantly greater in darker-skinned ethnic groups. This article reviews special considerations in the approach and management of nonmelanoma skin cancer in patients of color.
Semin Cutan Med Surg 28:93-95 © 2009 Elsevier Inc. All rights reserved.

Skin cancer is the most common form of cancer in the United States.[1] Histologic studies of darker skin reveal larger and more heavily melanized epidermal melanocytes compared with those in Caucasian skin.[2] These larger melanocytes allow dark skin to filter up to twice as much ultraviolet B (UVB) radiation than white skin,[3] resulting in an estimated sun protection factor of 13.1 in black skin.[4] These unique features of ethnic skin serve to protect it against actinic damage, making sun-induced skin cancers less prevalent.

Although skin cancer is less common in persons of color than in Caucasians, it has an increased incidence of morbidity and mortality,[5,6] raising public health concerns. Current public-awareness skin cancer campaigns focus on Caucasians in high-risk groups. Most physicians do not immediately associate skin cancer with persons of color. However, the incidence of nonmelanoma skin cancer (NMSC) in most ethnic groups is increasing, suggesting that there are factors other than UV exposure that play a role in the development of skin cancer in persons of color.[7] According to the 2000 census, 50% of the US population will be nonwhite by the year 2050.[8] This changing demographic, combined with the disparate skin cancer mortality rates in persons of color, makes it imperative that physicians become familiar with skin cancer in persons of color so they may better educate their patients on prevention and early detection.

Basal Cell Carcinoma (BCC)

The classic presentation of a solitary pearly papule with rolled borders and central ulceration may occur in persons color, but pearly borders and surrounding telangiectasia may be difficult to appreciate in darker skin tones (Fig. 1). Although BCC does occur in sun-exposed areas; in skin of color, it is seen with increasing frequency at nonsun-exposed sites[9] and often presents in an atypical manner,[10] making diagnosis challenging. Physicians should therefore consider taking a biopsy of any suspicious or nonhealing lesion in persons of color. Histologically, pigmented BCC occurs more frequently in persons of color.[9] The differential diagnosis of BCC in persons of color includes blue nevus, seborrheic keratosis, lupus erythematosus, trauma (curling iron burn), sarcoid, and nevus sebaceous (Fig. 2).

Studies[11] have documented the correlation of BCC in African Americans to UV light exposure; however, persons of color often have a false sense of security with regard to awareness of skin cancer risk and tend not to follow sun-protection guidelines proposed in skin cancer campaigns aimed at high-risk patients.[12] Persons of color also have an increased incidence of medical conditions,[13] such as diabetes, hypertension and lupus, necessitating the use of photosensitizing medications. These combined factors support the need for better counseling, patient education, and perhaps a distinct skin cancer awareness campaign directed toward skin of color.

Squamous Cell Carcinoma (SCC)

SCC is the most common cutaneous malignancy in African Americans[14] and the second most common cutaneous malignancy in Caucasian, Japanese, and Chinese patients (BCC being the most common NMSC in the latter).[15] Although actinic keratoses, the precursor lesions to SCC, are seen commonly in Caucasians and Japanese patients,[16] they tend not to occur in African Americans.[17] SCC, which occurs in sun-exposed and nonsun-exposed areas with equal frequency in Caucasians, is 8.5 times more likely to occur in nonsun-exposed areas of African Americans, in areas such as the

Skin Wellness Center of Chicago, Chicago, IL.
Address reprint requests should be addressed to Brooke Jackson, MD, Medical Director, Skin Wellness Center of Chicago, SC111 N Wabash Ave., Ste. 1116, Chicago, IL 60602-3126. http://www.skinwellnesscenter.org.

1085-5629/09/$-see front matter © 2009 Elsevier Inc. All rights reserved.
doi:10.1016/j.sder.2009.04.010

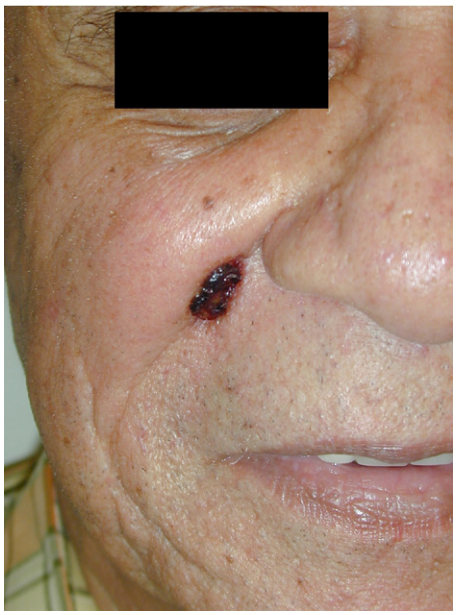

Figure 1 BCC in an 80-year-old male African-American golfer.

lower extremity and anogenital region,[18,19] suggesting that UV radiation plays less of a role in the development of SCC in African Americans. Mortality rates of African Americans with SCC are as high as 29% and may be related to delayed diagnosis of tumors in nonsun-exposed areas as well as potentially more biologically aggressive tumors.[20] Although Bowen disease (SCC *in situ*) is less common in African Americans (Figs. 3 and 4), it often occurs on the lower extremity as a hyperkeratotic plaque.

Risk factors for SCC in persons of color include chronic inflammatory and scarring processes, such as lupus, radiation sites, burn scars, hidradenitis suppurativa, and cutaneous ulcers.[14] The decreased survival rate of SCC in African Americans warrants vigilant surveillance and biopsy of any nonhealing lesion associated with a chronic inflammatory process. Patients with cutaneous chronic inflammatory disease should be counseled regarding their increased risk for SCC and advised to seek medical attention for any nonhealing lesion.

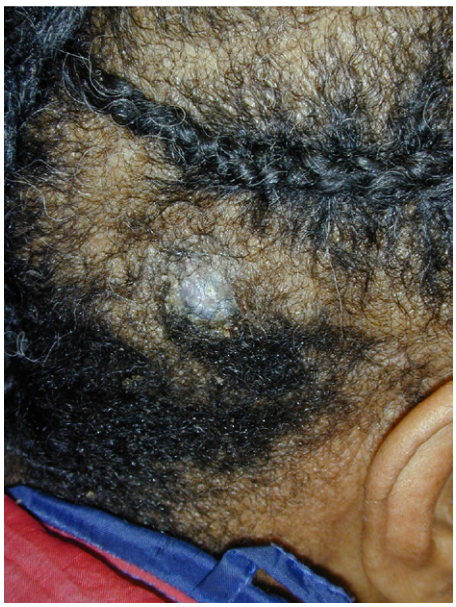

Figure 2 Nodular pigmented BCC on the scalp of an African American woman.

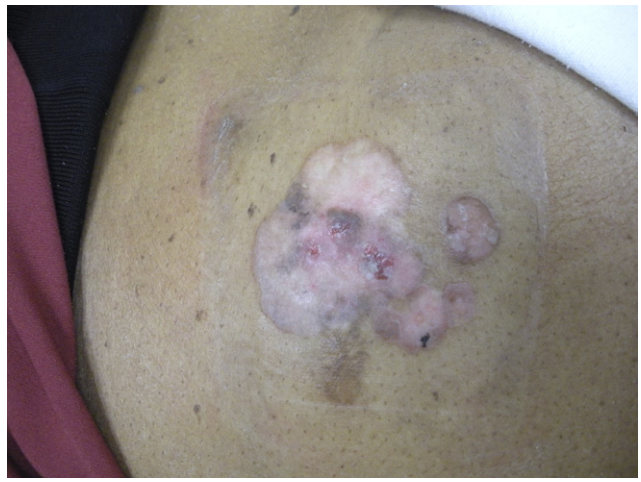

Figure 3 Bowen disease of the right lower extremity of an African American woman.

Hypopigmented Mycosis Fungoides

Hypopigmented mycosis fungoides, a variant of cutaneous T-cell lymphoma, occurs almost exclusively in persons of color and almost twice as often in African Americans than in

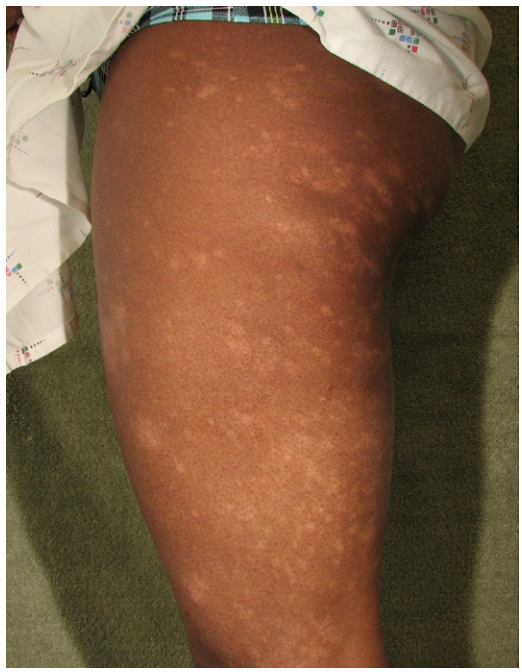

Figure 4 Patch stage hypopigmented mycosis fungoides.

Caucasians.[21] It presents as ill-defined hypopigmented patches in patients who often have an eczematous history (Fig. 4). The differential diagnoses of hypopigmented mycosis fungoides include *Tinea versicolor*, *Pityriasis alba*, *Tinea corporis*, vitiligo, and postinflammatory hypopigmentation. Biopsy should be considered in patients of color unresponsive to standard therapies for the aforementioned conditions or who have an unexplained exacerbation of their disease process. Diagnosis often requires several serial biopsies.

Treatment of NMSC in Persons of Color

Treatment options do not differ from those used in Caucasian patients; however, because of the increased risk of keloid formation in persons of color,[22,23] caution must be taken to minimize tension on surgical wound closures. Erythematous hypertrophic scars in light-complexioned persons of color (skin types 1IV) may be treated with the pulsed dye laser. This author uses Cynosure 595 nm, 10-mm spot, 0.5-ms pulse duration and fluences of 3-6 J, with fading witnessed in 1 to -3 treatments. When treating precancerous lesions, this author avoids use of liquid nitrogen in persons of color in favor of imiquimod in effort to avoid posttreatment loss of pigment associated with liquid nitrogen.

Conclusions

Skin cancer does occur in persons of color, although less commonly than in Caucasians. Persons of color are more likely to die from their disease when compared with their Caucasian counterparts. This disparity may be attributable to delayed diagnosis as well as more biologically aggressive tumors. Little is known regarding the sun-protective behaviors of persons of color, many of whom have a false sense of security regarding their skin cancer risks. Public awareness skin cancer campaigns directed at persons of color should be considered and physicians treating these patients should consider skin cancer surveillance and counseling as they do with Caucasian patients.

References

1. US Department of Health and Human Services: Healthy. People 2010. 2nd edition. With Understanding and improving Health and Objectives for Improving Health. 2 Vol. Washington, DC: US Government Printing Office, November 2000
2. Montagna W: The architecture of black and white skin. J Am Acad Dermatol 24:29-37, 1991
3. Halder RM, Bridgeman-Shah S: Skin cancer in African Americans. Cancer 75:667-673, 1995
4. Halder RM, Ara CJ: Skin cancer and photoaging in ethnic skin. Dermatol Clin 21:725-732, 2003
5. Gloster HM, Jr, Brodland DG: The epidemiology of skin cancer. Dermatol Surg 22:217-226, 1996
6. Jemal A, Siegel R, Ward E, et al: Cancer statistics, 2006. CA Cancer J Clin 56:106-130, 2006
7. Halder RM, Ara CJ: Skin cancer and photoaging in ethnic skin. Dermatol Clin 21:725-732, 2003
8. US Census Bureau, Population Division: Projections of the Resident Population by Race, Hispanic Origin, and Nativity: Middle Series, 1999-2100. Washington, DC, US Census Bureau, 2000
9. Nadiminti U, Rakkhit T, Washington C: Morpheaform basal cell carcinoma in African Americans. Dermatol Surg 30:1550-1552, 2004
10. Chorun L, Norris JE, Gupta M: Basal cell carcinoma in blacks: A report of 15 cases: Am Plast Surg 33:90-95, 1994
11. Matsuoka LY, Schauer PK, Sordillo PP: Basal cell carcinoma in black patients. J Am Acad Dermatol 4:670-672, 1981
12. Briley JJ, Chaveda K, Lynfield YL: Sunscreen use and usefulness in African Americans. J Drugs Dermatol 6:19-22, 2007
13. Ferdinand KC, Armani AM: The management of hypertension in African Americans. Crit Pathw Cardiol 6:67-71, 2007
14. Mora RG, Perniciaro C: Cancer of the skin in blacks: A review of 163 black patients with cutaneous squamous cell carcinoma. J Am Acad Dermatol 5:535-543, 1981
15. Koh D, Wang H, Lee J, et al: Basal cell carcinoma, squamous cell carcinoma and melanoma of the skin: Analysis of the Singapore Cancer Registry Data 1968-1997. Br J Dermatol 148:1161-1166, 2003
16. Suzuki T, Ueda M, Naruse K, et al: Incidence of actinic keratosis of Japanese in Kasai city, Hyogo. J Dermatol Sci 16:74-78, 1997
17. Hale EK, Jorizzo JL, Nehal KS, et al: Current concepts in the management of actinic keratoses. J Drugs Dermatol 3:S3-X16, 2004 (suppl)
18. Mora RG, Perniciaro C, Lee B: Cancer of the skin in blacks III: A review of nineteen black patients with Bowen's disease. J Am Acad Dermatol 11:557-562, 1984
19. Sing B, Bhaya M, Shaha A, et al: Presentation, course and outcome of head and neck cancer in African Americans: A case controlled study. Laryngoscope 108:1159-1163, 1998
20. Fleming ID, Barnawell JR, Burlison PE, et al: Skin cancer in black patients. Cancer 35:600-605, 1975
21. Akaraphanth R, Douglass MC, Lim HW: Hypopigmented mycosis fungoides: Treatment and a 61/2 year follow up of 9 patients. J Am Acad Dermatol 42:33-39, 2000
22. LeFlore IC: Misconceptions regarding elective plastic surgery in the black patient. J Natl Med Assoc 72:947-948, 1980
23. Arnold HL, Franer FH: Keloids; etiology and management by excision and intensive prophylactic radiation. Arch Dermatol 80:772, 1959