Hairstyling Practices to Prevent Hair Damage and Alopecia in Women of African Descent

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Highly textured hair has been found to be more susceptible to breakage than other hair types due to an increased proportion of spirals and relatively fewer elastic fibers anchoring the hair follicles to the dermis. Women of African descent frequently employ hairstyles and hair treatments for ease of management and as a form of self-expression, but a number of these practices have been implicated as risk factors for alopecia. Herein, we provide an overview of hairstyles for patients with highly textured hair so that physicians may better identify high-risk hairstyles, provide individualized recommendations for safer alternatives, and manage and stop the progression of hair loss before it becomes permanent.

Central centrifugal cicatricial alopecia (CCCA), traction alopecia, and acquired proximal trichorrhexis nodosa are 3 forms of alopecia that disproportionately affect women of African descent.[1] Central centrifugal cicatricial alopecia is characterized by a shiny smooth patch of hair loss over the vertex of the scalp that spreads centrifugally (Figure 1).[1-4] Traction alopecia results from prolonged or repeated tension on the hair root that causes mechanical damage, hair loss, and shortening of hairs along the frontotemporal line (the so-called fringe sign)(Figure 2).[1,3,5] Acquired proximal trichorrhexis nodosa, a result of trauma, is identified by a substantial number of hairs breaking off midshaft during a hair pull test.[1] By understanding the unique structural properties and grooming methods of hair in

women of African descent, physicians can better manage and stop the progression of hair loss before it becomes permanent.[1,4,5]


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FIGURE 1. A and B, Central centrifugal cicatricial alopecia presenting as a shiny smooth patch of hair loss over the vertex of the scalp.

The characterization of hair between and within ethnic groups is challenging and lies on a spectrum.[6,7] Many early studies broadly differentiated hair in 3 ethnic subgroups: African, Asian, and Caucasian[6-8]; older descriptions of hair texture also included terms such as *straight, wavy, curly,* and *kinky*.[6] However, defining hair texture should be based on an approach that is more objective than an inaccurate ethnicity-based classification or the use of subjective, ill-defined, and overlapping descriptive terms.[7] The segmentation tree analysis method (STAM) is an objective classification system that, when applied to hair, yields 8 curl-type groups (I=straight; VIII=tightly curly) based on curve diameter, curl index, number of waves, and twists.[6-9] (We discuss the “tightly coiled” [group VII] through “tight, interwoven small curls” [group VIII] groups in the STAM classification of hair.)

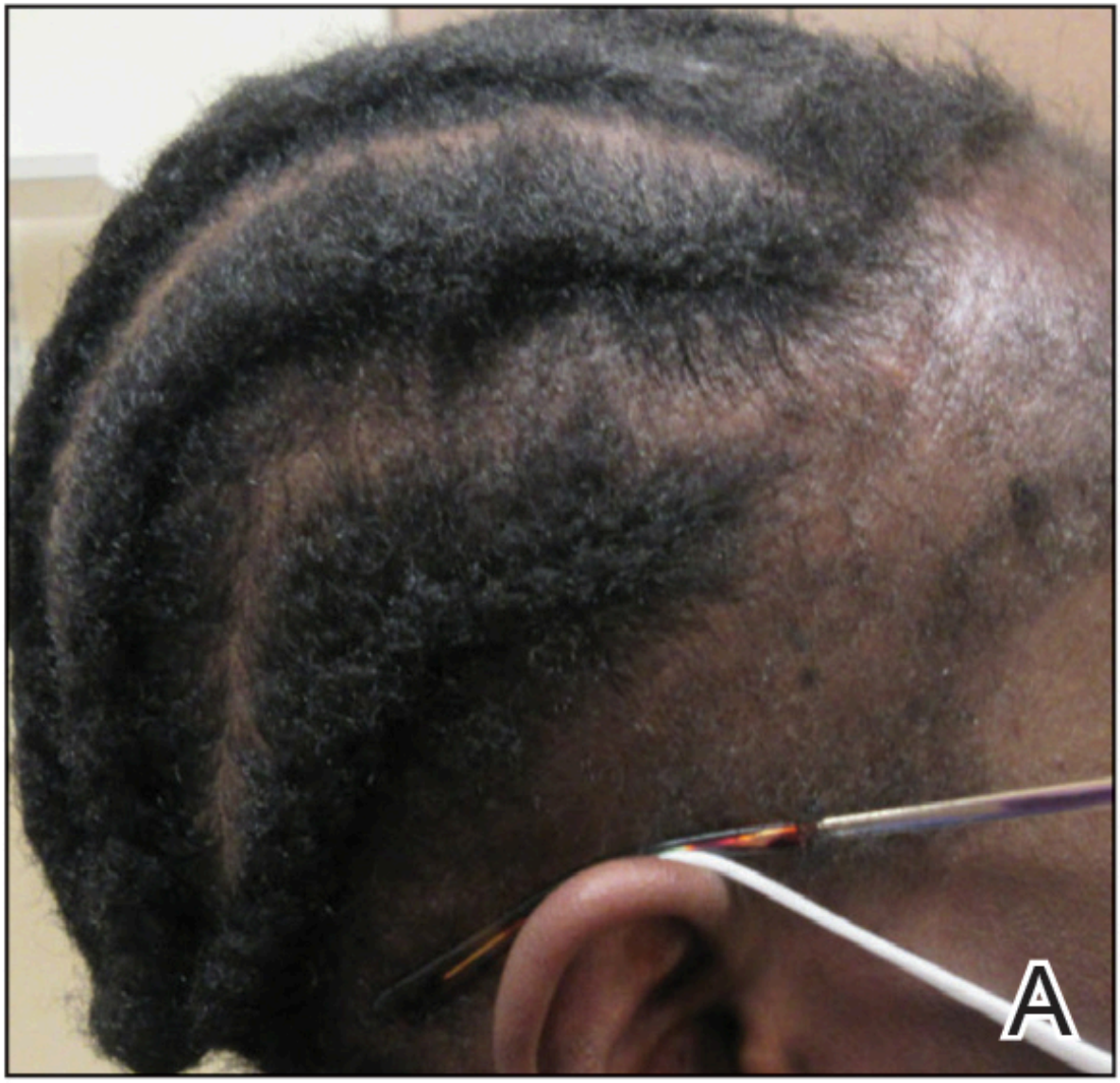
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FIGURE 2. A, Fringe sign in traction alopecia. B, Clinical presentation of traction alopecia.

Highly textured hair has been found to be more susceptible to breakage than other hair types because of an increased percentage of spirals and relatively fewer elastic fibers anchoring hair follicles to the dermis.[1-4,10,11] In a cross-section, the hair shaft of individuals of African descent tends to be more elliptical and kidney shaped than the hair shaft of Asian individuals, which is round and has a large diameter, and the hair shaft of Caucasian individuals, which structurally lies between African and Asian hair.[1,2,4,11] This axial asymmetry and section size contributes to points of lower tensile strength and increased fragility, which are exacerbated by everyday combing and grooming. Curvature of the hair follicle leads to the characteristic curly and spiral nature of African hair, which can lead to increased knotting.[2,4]

Practice Gap

Among women of African descent, a variety of hairstyles and hair treatments frequently are employed to allow for ease of management and self-expression.[1] Many of these practices have been implicated as risk factors for alopecia. Simply advising patients to avoid tight hairstyles is ineffective because tension is subjective and difficult to quantify.[5] Furthermore, it might be unreasonable to ask a patient to discontinue a hairstyle or treatment when they are unaware of less damaging alternatives.[3,5]

We provide an overview of hairstyles for patients who have highly textured hair so that physicians can better identify high-risk hairstyles and provide individualized recommendations for safer alternatives.[1,3,5]

Techniques for Hair Straightening

Traditional thermal straightening uses a hot comb or flat iron[1,2,4,12] to temporarily disrupt hydrogen bonds within the hair shafts, which is reversible with exposure to

moisture.[1,2,4,5] Patients repeat this process every 1 or 2 weeks to offset the effects of normal perspiration and environmental humidity.[5,12] Thermal straightening techniques can lead to increased fragility of the hair shaft and loss of tensile strength.[11]

Alternate methods of hair straightening use lye (sodium hydroxide) or nonlye (lithium and guanidine hydroxide) “relaxers” to permanently disrupt hydrogen and disulfide bonds in the hair shaft, which can damage and weaken hair.[1-5,11,12] Touch-ups to the roots often are performed every 6 to 8 weeks.[1,2]

References

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