

12 Management of definitive alopecia in African Americans

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INTRODUCTION

The hair and scalp for African Americans, because of their anatomical, histological, and physiological characteristics, have a specific pathology based on the fragility of the hair shaft and the inflammatory hyperreactivity of the scalp tissue. Some types of hairstyles practiced in this ethnic group can also cause disorders, manifesting in types of folliculitis, in traction alopecia, or in hypertrophic scars or keloids. These multiple clinical varieties must be distinguished from diseases common to all ethnic groups. The cosmetic, surgical, and medical treatments must be adapted to the etiology and also to specific ethnic considerations.

CHARACTERISTICS OF AFRICAN AMERICAN HAIR

Between the three main ethnic groups (Caucasian, East Asian, Black) there are few differences in biochemical structure and no differences in the composition of amino acids or proteins.

In contrast, the hair and scalp of African Americans have specific structural, anatomical, and physiological characteristics: the shaft has a helical and spiral appearance¹; in cross section it is flattened or elliptical; there are curved roots (Figure 12.1); there is hair density 20% lower than that of Caucasians; and there is a growth rate 30% lower than that of Caucasians.

The parameters of hair growth were compared in 38 African patients born in Africa (19 women and 19 men)



Figure 12.1 Specific anatomical features of African American hair (spiral shafts and curved bulbs) visible on the fragments of the scalp.

with those of Caucasians of the same age (27 ± 10 years).² The hair of Africans, compared to Caucasian hair, has a lower density (190 ± 40 vs. 227 ± 55 hair/cm²), slower hair growth (256 ± 44 vs. 396 ± 55 μ m/day), and a higher percentage of telogen hair (18 ± 9 vs. $14 \pm 11\%$).¹

Often, patients will have a biracial or multiracial character, rather than pure African heritage.

DISEASES COMMON TO ALL ETHNIC GROUPS

1. Alopecia areata: There are several types to be distinguished—patchy, ophiasis, total, and universal—for which the diagnosis, prognosis, and treatment are similar to those of other ethnic groups (Figure 12.2).^{3,4}

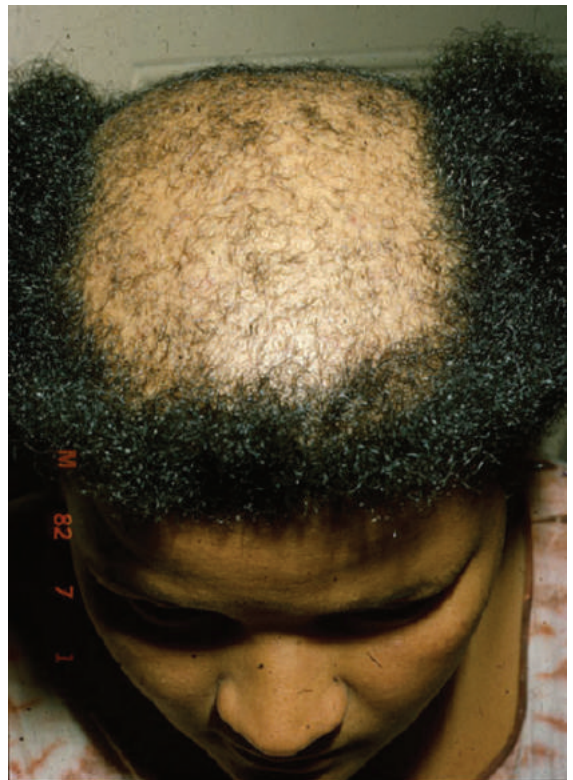


Figure 12.2 Alopecia of the vertex, which appeared suddenly in a woman after severe stress (the kidnapping of her child).

2. Male and female androgenetic alopecia⁵ have the same topography and are of the same prognosis in African Americans as in other ethnic groups, but the therapeutic approach and treatments are not always the same.
 - a. Lotions of 2% for female and 5% minoxidil for male have better cosmetic acceptance among African Americans than among Caucasians and East Asians, due to the “greasing” effects of propylene glycol on the hair shafts. The prescription advice and information are similar.
 - b. Finasteride is indicated almost identically as in other ethnic groups.
 - c. Hair transplantation in men and in women is similar to that of other ethnic groups. The peculiarities of transplantations among African American patients are essentially.
 - i. Harvesting a graft in the midoccipital donor zone to prevent a hypertrophic or keloid scar (Figure 12.3).
 - ii. Preparation of grafts in follicular units of two to four hairs rather than micrografts of one hair, harvesting of follicular units is possible with follicular unit extraction (FUE) or with strip segmentation (follicular units for long hair [FUL] or follicular unit transplantation [FUT]).
 - iii. In men, a design of a flatter frontal line than in other ethnic groups (Figure 12.4).
 - iv. In women, a more rectilinear design by combining frontal and temporal reconstruction (Figure 12.5).
3. Trichotillomania⁵ is observed in both children and adults. Clinical and psychological aspects are similar to those in other ethnicities. One should always look out for other types of additional traction, particularly in African American patients.
4. Scarring alopecia in children and adults⁶: Scarring alopecia is defined as the destruction of hair follicles,



Figure 12.4 Male frontal hair line (flatter than in other ethnic groups).

replaced by fibrous tissue. The diagnosis is clinical, with diagnostic confirmation coming from histological examination with direct immunofluorescence. There are multiple causes. We can distinguish congenital scarring alopecia (hereditary syndromes, localized forms, and diffuse forms) from primary or secondary scarring acquired alopecia:

- a. Acquired primary scarring alopecia acquired with lymphocytic infiltrate (discoid lupus erythematosus, lichen planus pilaris, pseudopelade of Brocq, follicular degeneration syndrome, mucinous alopecia).
- b. Acquired primary scarring alopecia with neutrophilic infiltration (decalsans folliculitis,



Figure 12.3 Area of harvesting of a graft (in the midoccipital region) a few days after closure of the suture.



Figure 12.5 Female frontal hair line (more rectilinear than in other ethnic groups).

ringworm, dissecting cellulitis of the scalp, acne keloid, necrotic acne, folliculitis in clumps).

- c. Acquired secondary scarring alopecia of physical origin (Figure 12.6) or of tumor-induced or infectious origin.
- 5. Seborrheic dermatitis: As with other ethnic groups, there are aggravating effects to cosmetic products often used by African Americans: lanolin oil, soybean oil, wheat germ, lecithin, squalene, and castor oil.

Stopping use of the product is essential. Rather than frequent washing, it is better to advocate a weekly shampoo with the aid of a low-strength cortisone lotion or shampoo.

SPECIFIC CONDITIONS TO AFRICAN AMERICANS

Traction alopecia

These occur in patients of all ages, due to the various types of hair-stylings practiced in this ethnic group such as ponytails, braids (Figures 12.7 and 12.8), brushing, curlers, and hairpieces (Figure 12.9). Of basically frontotemporal location, clinical signs vary between perifollicular inflammation, reversible alopecia, and permanent alopecia. Treatments include stopping traction and applying



Figure 12.6 A burn with caustic soda before (a) and after (b) good spontaneous healing without any treatment.



Figure 12.7 Early definitive traction alopecia following styling with braids.



Figure 12.8 Advanced traction alopecia, following styling with braids.



Figure 12.9 Occipital traction alopecia following wearing a hairpiece.

minoxidil 2% lotion. Hair transplants are recommended on patches of alopecia remaining after 6 months of treatment (Figures 12.10 and 12.11).⁷⁻¹³

“Hot comb” alopecia (follicular degenerative syndrome of Sperling)

Most often caused by a combination of hot oil and a hot or a curling iron comb, “hot comb” alopecia is sometimes idiopathic. It is a smooth and permanent alopecia with loss of follicular orifices, localized preferentially to the vertex. One sees islands of hair and scar patches, and sometimes there is polytrichia (Figures 12.12 and 12.13). Preventive treatment is to stop the hair manipulation taking place and to stop also the excessive use of heat. The definitive treatment is then provided by hair transplantation or the use of a hairpiece (Figure 12.14).¹⁴⁻¹⁶

Folliculitis and pseudo-folliculitis

These are the result of skin inclusion by the curved hair shaft (after scalp shaving in men or after traction hair alopecia in women), which causes the formation of papules, follicular papules and pustules, perifollicular papules

or pustules, or foreign body granulomas. Severe scarring may result. Preventive treatment is to stop shaving or hair traction with tweezers and to advocate waxing, using depilatory creams or lotions, or using special shavers (with triple blade or an electric shaver with adjustable length) or permanent hair removal. The treatment of lesions consists of administering topical or oral (erythromycin, cyclin) antibiotics locally (topical erythromycin) or orally (Figure 12.15).^{3,5,17}

Keloid folliculitis

Located mainly on the neck, keloid folliculitis is a chronic inflammatory and potentially scarring process characterized histologically by a preliminary papule (inflammation of the infundibulum and isthmus) and a granulomatous



Figure 12.10 Definitive traction alopecia (6 months after stopping traction), (a) before and (b) after a session of follicular unit long (FUL) hair grafts.



Figure 12.11 Definitive traction alopecia (6 months after stopping traction), in a postmenopausal woman (a) before and (b) after a session of follicular unit grafts.



Figure 12.12 "Hot comb" alopecia caused by a combination of hot oil and heated comb.



Figure 12.13 Burning after using a "hot comb."

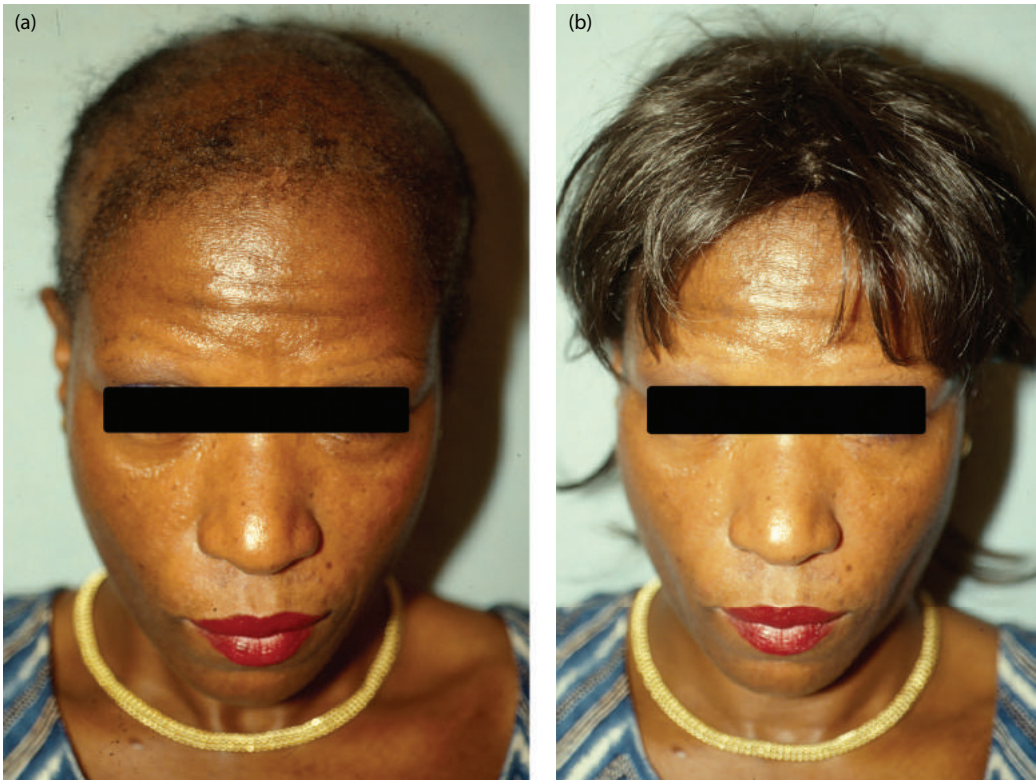


Figure 12.14 “Hot comb” alopecia, (a) before and (b) after correction by the use of a wig.

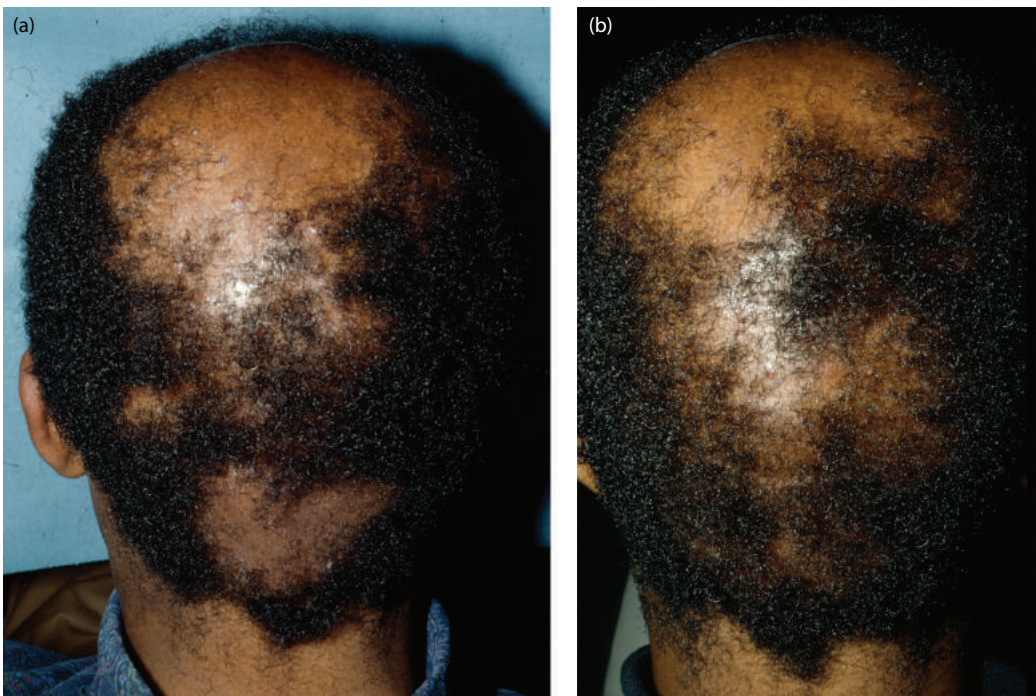


Figure 12.15 (a) Folliculitis before treatment, (b) scar appearance after healing of inflammation by antibiotic therapy.

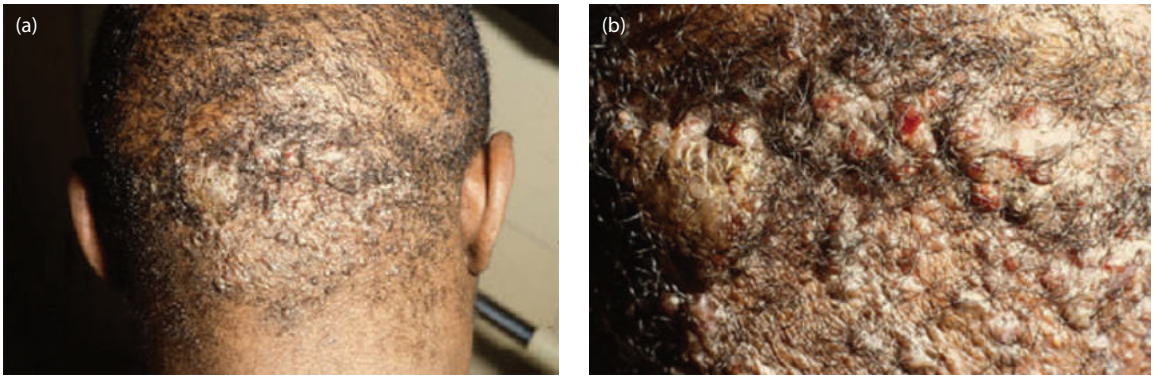


Figure 12.16 (a,b) Folliculitis and keloid papules of the neck.

infiltrate (at the deep end), then by a scar plate (Figure 12.16). Mainly in African American men, the lesions are distributed in areas where a razor is used to shave the hairline. Do not shave the area, and treat with antibiotics locally and orally (cyclin), intralesional corticosteroids (1 time per month), and surgical excision (performed with caution).^{3,5,8}

Dissecting cellulitis of the scalp (perifolliculitis capitis abscedens and suffodiens)

Of poorly defined etiology, dissecting cellulitis of the scalp is a mixture of follicular occlusion, acne conglobata, and hidradenitis suppurativa. Observed especially in men, it presents clinically with multiple abscesses sometimes coalescing, follicular occlusion, scarring alopecia, hypertrophic scars, or keloids (Figure 12.17). Bacteriological



Figure 12.17 Dissecting cellulitis of the scalp.

tests are negative (for *Staphylococci*). Various treatments can be applied: corticosteroids and oral antibiotics, surgical excision, isotretinoin (40 mg/d), zinc sulfate (400 mg orally), cephalosporin (500 mg) + rifampicin (600 mg/d), or incision/drainage for fluctuating abscesses.^{3,5,8,18}

SPECIFIC THERAPEUTIC CONSIDERATIONS FOR THE AFRICAN AMERICAN SCALP AND HAIR

Treatments also will need to be adapted to these ethnic differences.

Cosmetologic treatments

The particular cosmetic features among African Americans are related to dryness and brittleness of hair shafts. The best cosmetologic advice will then aim to prevent and correct these ongoing structural abnormalities of the hair.^{3,5,6,11}

Shampoos

Excessive dryness will result if those of African descent shampoo their hair too frequently. Shampoos that contain anionic agents are particularly drying to the hair. Their hair needs shampoos that contain humectants and milder cleansing agents, such as amphoteric and nonionic blends (Table 12.1).

Oils and pomades

African Americans often employ some type of heavy emollient or oil to assist in grooming their hair or to treat a dry, scaly scalp. Castor oil, wheat germ oil, olive oil, and mineral oil are some of the most popular oils used (Table 12.2). Jojoba oil does not appear to aggravate dandruff or seborrheic dermatitis.

Pomades consist primarily of petrolatum, lanolin, mineral oil, olive oil, and perfume, whereas solid *brilliantines* are vegetable or mineral oils stiffened with waxes. Both of these agents coat the hair, thereby reducing the static electric charges between the hairs and allowing for ease of combing and styling.

Table 12.1 Hair Grooming Products for African American Hair

Uses of Product	Brand Name
Dry brittle hair, natural or curly perm, hot-pressed or chemically relaxed hair	Black Alive Moisturizing Shampoo Black Alive Curl Shampoo Optimum Care Moisture Shampoo
Hard-to-comb hair, any style	Crème of Nature Shampoo Black Alive Curl Shampoo
Chemically relaxed hair	Optimum care Mizani Nexus
Split ends, hair chemically damaged from relaxers	Optimum care Mizani Nexus
Unusually dry hair with breakage from chemicals and dryes	Pure karite Nexus Humectress Optimum Care Black Alive Curl Revitalizer Moisture Max Luster's Pink Lotion Mizani Cholesterol
For those with seborrheic dermatitis: free of lanolin and other contributing agents	Murray's Superior Hair Dressing White petrolatum Black Alive Line Jojoba oil Mineral oil

Moisturizers

Moisturizers contain humectants that attract and hold water in the keratin fibers. Hair that has been chemically curled or waved will require more moisturizing than non-chemically treated hair. Most of the moisturizers contain lanolin (Table 12.1), glycerin, and propylene glycol.^{3,5,8,18}

Activators

Activators are products specifically designed for curls. They contain surface active agents such as proteins, cationic agents, and/or plant oils (soybean and wheat germ oil) (Table 12.1).

Conditioners

Hair conditioners enhance manageability of the hair. A conditioner may be simply an emollient or a very complex mixture of proteins, quaternary ammonium compounds, oils, gums, and humectants (Table 12.1).

Styling gels and spritzes

The gels contain carbomer 940 and hydrolyzed animal protein: this combination forms a thick, tacky gel that dries on the hair, leaving it very stiff and fixed in the style

Table 12.2 Oils and Pomades

Ingredients	Products Containing
Petrolatum, mineral oil, fragrance	Murray's Superior Hair Dressing Pomade
Petrolatum, olive oil, fragrance	Royal Crown Hair Dress
Petrolatum, mineral oil, lanolin, fragrance	Dax-Wave and Groom Hair Dress
Petrolatum, lanolin, lecithin, mineral oil, fragrances, D&C green No. 6, D&C violet No. 2	Blue Magic Conditioner Hair Dress
Petrolatum, coconut oil, castor oil, mineral oil, fragrance	Dax-Short and Neat
Petrolatum, lanolin, mineral oil, fragrance, D&C green No. 6, D&C violet No. 2	Blue Magic Pressing Oil
Petrolatum, lanolin, olive oil, lecithin; fragrances, isopropyn myristate, D&C yellow No. 11, D&C green No. 6	Blue Magic Bergamot Hair and Scalp Conditioner Queen Bergamot Hair and Scalp Conditioner
Petrolatum, mineral oil, lanolin, aluminium stearate, microcrystalline wax, fragrance, lauric acid, propylparaben, D&C green No. 6	Ultra Sheen Conditioner and Hair Dress

sculptured into the hair. The spritzes usually contain a copolymer of polyvinyl-pyrrolidone and vinyl acetate.

Medical treatments

The specific medical treatments are based upon the prevention effort, antibiotherapy, and anti-inflammatory prescriptions (Table 12.3). Medical treatments will be selected primarily to stop the inflammation that has occurred despite prevention efforts (Table 12.3).^{3,5,6,10}

Surgical treatments

Surgical treatments need to be specific to African Americans because of the nature of the curly shafts, the curvature of the roots, the risk of hypertrophic scarring or keloid scars, and the risk of hyperpigmentation or hypopigmentation. They should always be selected based on the location of the surgery to best prevent the risk of excessive or discolored scarring. The surgical techniques themselves (resections, flaps, grafts, etc.) must be adapted to the particular features of the African American scalp.⁹ As with any dermatologic surgery of the scalp, the indications are guided by many factors, such as the nature, extent, and location of the alopecia; the sex, age, and individual characteristics of the patient; and finally, the development of alopecia. This surgery follows three main technical principles: autologous hair transplantation in the form of follicular unit grafts, or transposition flaps, or assisted excision by placing an expander.¹⁹⁻²¹

Table 12.3 Specific African American Hair Diseases and Therapy

African American Specific Pathologies	Advice	Medical Treatments
Traction alopecia	Stop the traction Hair transplant (in some cases)	2% minoxidil lotion for 6 months
Hot comb alopecia	Stop the hair traction Hair transplant in some cases Hairpieces (in some cases)	
Folliculitis and pseudo-folliculitis	Stop shaving or hair traction	Local antibiotherapy Oral antibiotherapy
Keloid folliculitis	Stop shaving Excision (with caution)	Local antibiotherapy Oral antibiotherapy Intralesional corticosteroids
Dissecting cellulitis of the scalp	Incision/drainage Fluctuating abscesses Excisions (with caution)	Oral antibiotherapy Oral corticosteroids Isotrétinoïn (40 mg/d) Zinc sulfate (400 mg per os)

- The follicular unit (FU) graft technique consists of harvesting small fragments of the scalp in the mid-occipital donor area.

The intradermal curl follicles are associated with higher transection rates. This rate can be lowered with certain surgical modifications. The use of tumescent solution prior to donor harvesting reduces transection by separating follicles and by partially straightening their curled intradermal elements.

Schematically two procedures are selected (see Chapter 15):

- The strip harvesting technique has a closure with sutures or staples and a segmentation onto 1–4 hours FU. It is called the follicular unit technique (FUT) if the scalp is previously shaved and follicular unit long hair (FUL)²² if the scalp is unshaved. These procedures are the most commonly indicated (Figure 12.18 through 12.21).
- The follicular unit extraction (FUE) consists of harvesting on a scalp previously shaved follicular unit with manual or automated rotated punches of 0.8–1 mm diameter. The FUE are then extracted manually with forceps. The very small round scars are nearly invisible. Follicular unit extraction (FUE) might be an appropriate



Figure 12.18 Definitive traction alopecia, (a) 6 months after stopping any traction; (b) appearance after the first session; (c) and after a second session of follicular unit long (FUL) hair transplantation.