Ethnic Considerations in Hair Restoration Surgery

Jeffrey Epstein, MD[a,b,c,*], Anthony Bared, MD[b], Gorana Kuka, MD[d]

KEYWORDS

• Hair transplant • Follicular unit extraction • Ethnic hair transplant • Eyebrow transplantation • Hispanic hair transplant • Asian hair

KEY POINTS

- Different ethnic groups have specific characteristics of the hair that affects the results of hair transplants.
- Asian hair, typically of thick caliber and dark, is often more challenging to achieve natural appearing results.
- Patients of African ethnicity are good candidates for eyebrow and scalp hair transplants, because the curly hair and minimal color contrast between scalp and hair facilitate achieving results that appear natural.
- Follicular unit extraction is the preferred technique for harvesting grafts in patients of African and most of Asian ethnicity.

INTRODUCTION

Consistent with the trends acknowledged by the other contributors in this issue of *Clinics*, and confirmed by demographic shifts in the United States, the ethnic patient constitutes a growing trend in the use of plastic surgery, and the specialty of surgical hair restoration is no exception. In our practice, with offices located in 2 ethnically diverse cities, most of our patients are non-European/nonwhite. This diversity is further magnified by the wide scope geographically in which our patients reside; more than 70% of them travel for surgery commonly from throughout Latin America but also the Middle East and Asia, including East Indians and Asians. This ethnic diversity provided to us by our international presence is duplicated by the ethnic makeup of our patients, who come from throughout North America, not only Miami and New York. In particular, this North American trend includes increasing numbers of African Americans and also Middle Easterners, Asians, East Indians, and, of course, Hispanics seeking out hair restoration.

As hair restoration surgeons, we essentially perform 1 common procedure: hair grafting, in which hair is transplanted from the back or sides of the head into areas of hair loss, most commonly the frontal and midscalp and crown regions, but sometimes, into other areas, including the beard and eyebrows. In addition to these hair transplants, we perform several other procedures, including hairline lowering surgery (surgical hairline advancement [SHA]), in which the hairline is advanced and the forehead shortened, and the repair of previous plastic surgery procedures, including but not limited to the repair of alopecic scarring and hairline distortion caused by previous browlifts and facelifts. With these procedures, ethnic considerations affect not only technique and patient candidacy but more subtly and just

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[a] Department of Otolaryngology, University of Miami College of Medicine, University of Miami Hospital & Clinics, P.O. Box 016960 (D-48), Miami, FL 33136, USA; [b] Foundation for Hair Restoration, 6280 Sunset Drive, Suite 504, Miami, FL 33143, USA; [c] Foundation for Hair Restoration, 20 East 56th Street, 3rd Floor, New York City, NY 10021, USA; [d] Colic Hospital, Surdulička 5, Belgrade 11000, Serbia
* Corresponding author. 6280 Sunset Drive, Suite 504, Miami, FL 33143.
E-mail address: jse@drjeffreyepstein.com

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as importantly, patient motives, expectations, and concepts of beauty as a result of ethnicity (ie, Middle Eastern men desiring full beards so as to appear masculine). In this article, these considerations are presented.

ANATOMIC AND HAIR CHARACTERISTIC ETHNIC DIFFERENCES

Although there exist a multitude of hair types in the lay literature, within the medical literature, human hair has been categorized into 3 ethnic groups according to distinguishable characteristics: Asian, white, and African hair. These ethnic groupings show distinct characteristics in hair density, diameter, shape, mechanical properties, and composition.[1] The hair follicle itself determines the appearance of the hair. The typical hair follicle of Asian hair is round, whereas those of whites and African are ovoid and elliptical, respectively.[2] The shape of the hair follicle is thus believed to contribute to the appearance and the geometry of the hair. Asian hair has a circular geometry, African hair has an elliptical shape, and hair of whites is of an intermediate shape. The chemical and protein composition of hair does not vary across ethnic groups, and there is no difference in the keratin types. However, African hair generally has less tensile strength and breaks more easily than hair of whites. The hair follicles of Asians are metabolically more active than those of whites, and therefore, the grafts of Asians are more vulnerable to dehydration and a prolonged preservation period.

An important issue when considering ethnic characteristics in evaluating patients for hair transplantation is the density of hairs in the donor site. This density is a product of 2 factors: the concentration of hairs and the size or caliber of each individual hair. The concentration of hairs is presented in the form of follicular units per cm^2; a single follicular unit is the natural occurring grouping of hairs as they grow in the scalp. A follicular unit, as described by Headington,[3] Sperling,[4] and Kim,[5] consists of 1 to 4 hairs, surrounding by an adventitial sheath, which also contains some supportive structures. A hair graft typically consists of a single follicular unit, which is the building block of aesthetic hair restoration. Asian hair has the largest cross-sectional diameter or caliber, whereas the density of hair is intermediate in whites (whose highest density of hair follicles is 100 follicular units/cm^2) and lowest in Africans. This characteristic may be deceptive to the novice hair transplant surgeon, because African hair gives the appearance of a higher density, given the curly nature of the hair. This characteristic is beneficial to the patient because the appearance of higher density may be achieved with lower graft density in the recipient area. Asians have a high proportion of single hairs (24%–30% compared with 14% found in whites).

HAIR GRAFTING TO THE SCALP

Donor Site Follicle Extraction

We use 2 hair transplantation techniques: the follicular unit grafting (FUG) or strip technique and the follicular unit extraction (FUE) technique. Both use the same basic concept of transplanting hair from more permanent donor areas (usually the sides and back of the scalp, but in cases of severe limited supply of donor hairs, usually as a result of previous procedures, the donor area can be the chest or beard) into the recipient areas, where more hair is desired. FUG and FUE differ in how these donor hairs are obtained. FUG is the traditional technique of donor hair harvesting, whereby parallel incisions are made in the donor scalp area to remove a strip. The length and width of the excision depend on the amount of grafts being transplanted in the procedure. From this strip, individual FUGs are then dissected under the microscope, a process that requires a team of trained assistants, and separated out based on the number of hairs per graft (1, 2, 3, or 4).

In the FUE technique, individual punches, typically ranging in size from 0.8 to 1.0 mm, are used to extract individual follicular units from the permanent donor areas. As the fastest growing component of our practice, the FUE technique is relevant in ethnic hair transplantation cases. We perform FUE procedures almost exclusively in patients of African American and Asian ethnicity. FUE obviates the linear scar from a traditional FUG strip procedure (**Fig. 1**). Because of the geometry of the hair in Asians, resulting in more a more spiky pattern of hair growth, whereby the hairs tend to grow less vertically downward instead of growing more outward or horizontally, the linear scar in patients of Asian ethnicity can be more conspicuous. Similarly, in the African American patient, FUE provides a cosmetic advantage, because the African American patient can continue to cut his hair very short and avoid the appearance of a linear scar. The hair transplant surgeon needs to be aware of the geometry of the African American hair follicle when performing an FUE procedure. The curliness of the hair does not stop at the skin, so the surgeon needs to be cognizant of the potential change in hair direction underneath the epidermis.

In our practice, most of our FUEs are performed by a specially designed handheld drill and do not