

Aesthetic Importance of the Parietal Eminence Area (Posterior Parietal Triangle), an Essential Island of Scalp Requiring Hair Restoration

Anil Kumar Garg, MBBS, MS, MCh, FISHRS | Indore, India | anilgarg61@yahoo.com;
Seema Garg, MBBS, MSc, FISHRS | Indore, India

ABSTRACT

Introduction: Hair loss is a progressive disorder that if not treated in the early stages may lead to baldness, requiring a hair transplantation. Hair restoration of the frontal area of the scalp, followed by mid-scalp and vertex, is the usual order of priority for hair transplantation. Because of the progressive nature of hair loss, patients who undergo hair transplantation in the frontal and mid-scalp may later show prominent bald scalp in the parietal eminence area (posterior parietal triangle). This thinning in the parietal eminence is noticeable in frontal lateral profile views, which can be concerning to the patient. The parietal eminence, or posterior parietal triangle, is part of the vertex/crown, and the vertex is the last priority of scalp hair restoration. However, to maintain the patient's aesthetic appearance, we feel the parietal eminence area should be covered when implanting the mid-scalp.

Method: We examined our patients who underwent hair transplant in the frontal and mid-scalp areas. Some showed thinning and/or baldness in the parietal eminence area, which was readily visible in the patients' lateral profile and frontal view. We concluded that the parietal eminence area is an essential aesthetic area of the scalp and therefore should be treated as an extension of the mid-scalp area. Based on this, we modified how we transplanted the mid-scalp. The mid-scalp area was extended to both sides to include the parietal eminence (posterior triangle) area. The transplanted hair in the parietal eminence area shadows the central vertex area.

Results: The patients who underwent hair transplant procedures to cover the frontal and mid-scalp along with the parietal eminence area showed good hair coverage and were happy on follow-up.

Conclusion: Hair transplant of the parietal eminence is an underappreciated means to maintain balance in the frontal and lateral profiles and restore the head's contours. In limited donor availability, when the vertex is not transplanted, preferential attention to parietal eminence can provide indirect cosmetic benefit to the vertex.

Keywords: occipitoparietal area, parietal eminence, posterior parietal triangle

This article is open access and may not be copied, distributed, or modified without written permission from the International Society of Hair Restoration Surgery.

INTRODUCTION

Androgenetic alopecia (AGA) is one of the common causes of hair loss in men.¹ A typical initial presentation is receding of the anterior hairline with loss in the frontotemporal area of the scalp.² When hair loss progresses, it leads to hair loss in the parietal and occipital areas leading to a loss of the parietal hump.³ The usual priority of reconstruction is the frontal area, followed by mid-scalp, and lastly, the crown.⁴ Because of the limitation of donor hair follicle supply, the occipitoparietal region remains uncovered or minimally covered.^{4,5}

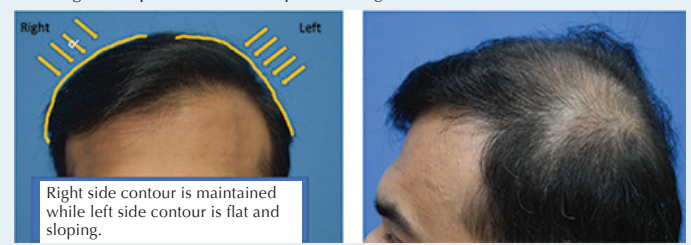
We studied cases of patients who had transplants in the frontal and mid-scalp areas who later complained about bare scalp showing in the parietal eminence areas, resulting in a widening of the part line, which was apparent when looking from the side.⁶ This led to our belief that parietal eminence is as essential as the frontal area of the scalp, and therefore it is advisable to include the parietal eminence as an extension of the mid-scalp area, especially in cases where there is still the possibility for a higher grade of baldness and/or thinning.⁷ As a result of this study, we now cover both parietal eminences while transplanting the mid-scalp area.

Hair transplantation of the parietal eminence is an underappreciated means to maintain balance in the frontal and lateral profiles and to restore the contour of the scalp hair. In patients with limited donor availability that will not allow for vertex transplantation, attention during transplant to the parietal eminences can provide indirect cosmetic benefit to the vertex.

METHOD

Patients who had undergone a hair transplant and were now showing thinning and/or baldness in the parietal eminence area (posterior parietal triangle) were selected for this study. We examined the frontal and mid-scalp areas. Some showed thinning and/or baldness in the parietal eminence area, which was readily visible in the lateral as well as frontal view (Figure 1). The compromised aesthetics of the scalp inspired the lead author to look at all of his previously transplanted cases. It was concluded that it is essential to include the parietal eminence when transplanting the mid-scalp as a preventive measure for future balding in that area.

FIGURE 1. Results at 11 months post hair transplant. Patient whose front and mid-scalp were transplanted now showing loss of contour on his left side (left) and thinning in the parietal area and part line (right).

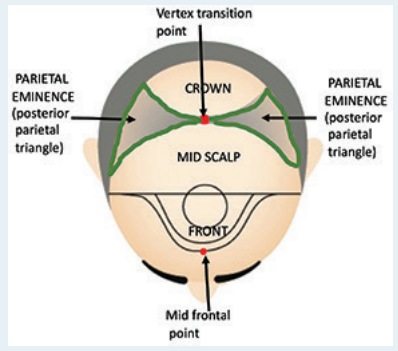


Covering the Parietal Eminence

The mid-scalp is delineated anteriorly by an imaginary line connecting both left and right tragi, laterally by both parietal humps, and posteriorly by the vertex transition point.⁸ The parietal eminence, or posterior parietal triangle,

is part of the vertex area as shown in Figure 2. If you look at the side profile of the face, the posterior parietal triangle/parietal eminence area shadows the central vertex area, and the central vertex area is visible only in the posterior profile of the scalp.

FIGURE 2. Scalp major zones and posterior parietal triangles or parietal eminence areas.



Usually, the parietal eminence/posterior parietal triangles are not covered when transplanting the mid-scalp. To transplant the parietal eminences along with the mid-scalp, additional grafts are required. If additional grafts are not available, the number of grafts transplanted

to the mid-scalp will need to be reduced. This can be accomplished by either reducing the transplanted density or reducing the size of the area covered in the mid-scalp. We prefer to reduce the size of the mid-scalp area transplanted by moving the posterior border anteriorly (Figure 3). Grafts can also be transplanted in the part lines if there is conspicuous thinning present. For Norwood grades V–VII, in the first stage of hair transplantation, we typically do 4,500-5,000 grafts.⁹ On the first day, 2,500-3,000 grafts are harvested from the scalp using FUE.¹⁰ Scalp hair follicles are implanted all over the planned area, leaving gaps between for beard grafts. On the second day, around 2,000 donor hair follicles are harvested from the beard. The beard follicles are implanted between the scalp hair follicles that were implanted the day before, using the combination technique of grafting of scalp and body hair.^{11,12} The areas transplanted are frontal, mid-scalp, and parietal eminence areas as per the plan shown in Figure 3.

FIGURE 3. Modification to cover posterior parietal area by extending posteriorly laterally in areas b and c. The final area looks like a heart shape.



RESULTS

Case I (Figure 4)

This young man had hair loss and thinning in the front, mid-scalp, and crown. A total of 5,256 grafts were implanted over two days. On the first day, 3,030 were harvested from the scalp; on the second day, 2,226 grafts were harvested from the beard. The front and mid-scalp, including parietal eminence (posterior parietal triangle), were transplanted. At 8-month follow-up, there was good coverage over the parietal eminence.

Case II (Figure 5)

This young man presented as Norwood grade VII. FUT was done. A total of 3,506 grafts were implanted. Six years

later, a total of 4,550 grafts were harvested, 2,526 from the scalp and 2,024 from beard by FUE. The anterior hairline was revised, and the mid-scalp and upper crown, including side parietal eminence areas, were transplanted. At 10-month follow-up, the results showed good coverage, except for the lower crown area.

FIGURE 4. Case I



FIGURE 5. Case II



Case III (Figure 6)

This young man was Norwood grade VI baldness. He had had a prior transplant (with another surgeon) of approximately 2,500 grafts by FUT. However, the patient was concerned about thinning in his part line and parietal eminence areas, which were quite noticeable in oblique and lateral profiles. We implanted 5,023 grafts from the scalp and beard by FUE, covering the parietal area and part of the crown. The results shown are at 13 months post-transplant.

FIGURE 6. Case III



DISCUSSION

The aesthetics of the face lie in maintaining the facial proportions, bilateral symmetry, and contour of the scalp.^{9,10} The anterior hairline and temporal fringes maintain the frame of the face and the aesthetic proportionality of the parts of the face. The volume of hair on the scalp contributes significantly to the contour of the head.¹⁴

In balding males due to AGA, there is receding of the anterior hairline followed by temporal area recession and loss of hair bulk in the parietal and crown areas. Restoration of the anterior hairline is the first priority of hair restoration, followed by mid-scalp, and, lastly, the crown. Thinning and loss of hair in the parietal and crown area leads to loss of scalp contour, which leads to compromised aesthetics.

The parietal eminence is the most projecting part of the scalp, visible in the front, oblique, and lateral profiles. The loss of hair in this zone is conspicuous in the oblique and lateral profiles of the face. After examining cases in our clinic in which the front and mid-scalp were restored, we found many of the patients were concerned about and wanted to cover the thinning and baldness in the parietal eminence area. Therefore, we concluded that restoration of the parietal eminence should be done during mid-scalp restoration.

Coverage of the parietal eminence is an underappreciated means to maintain balance in the frontal and lateral profiles and to restore contours of the head. In situations of limited donor availability, preferential attention to parietal coverage can indirectly benefit the appearance of the crown.

CONCLUSION

Androgenetic alopecia is a progressive disorder. Young males with positive family history have a high chance of developing a high grade of baldness. When transplanted in the frontal and mid-scalp area, such patients are likely to develop additional thinning and/or baldness in nearby areas, such as the parietal eminence and/or parietal-occipital area. This thinning looks prominent in the side profile, and this may be of great concern to the patient.

After studying many such cases on follow-up, we concluded that during transplantation of the mid-scalp area of such patients, the parietal eminence and/or part line area should be included so that the side profile of the patient looks balanced. Therefore, hair restoration of the parietal eminence area is as essential as the frontal area of the scalp.

References

1. Rathnayake D, Sinclair R. Male androgenetic alopecia. *Expert Opin Pharmacother*. 2010; 11(8):1295-1304.
2. Gupta M, Mysore V. Classifications of patterned hair loss: a review. *J Cutan Aesthet Surg*. 2016; 9(1):3.
3. Tamashunas NL, Bergfeld WF. Male and female pattern hair loss: treatable and worth treating. *Cleve Clin J Med*. 2021; 88(3):173-182.
4. Jimenez F, Ruifernández JM. Distribution of human hair in follicular units: a mathematical model for estimating the donor size in follicular unit transplantation. *Dermatol Surg*. 1999; 25(4):294-298.
5. Garg AK, Garg S. The use of body hair with scalp hair for "combination grafting" to enhance visual density of hair transplantation and increase coverage in advanced alopecia. *Hair Transplant Forum Int'l*. 2018; 28(6):217-223.
6. Parietal eminence. Wikipedia. Accessed December 15, 2021. https://en.wikipedia.org/wiki/Parietal_eminence
7. Lipsett BJ, Reddy V, Steanson K. Anatomy, Head and Neck, Fontanelles. [Updated 2021 Jul 26]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2022 Jan. Available from <https://www.ncbi.nlm.nih.gov/books/NBK542197/>
8. Bernstein RM, Rassman WR. Follicular transplantation. Patient evaluation and surgical planning. *Dermatol Surg*. 1997(Sep); 23(9):771-784.
9. Gupta M, Mysore V. Classifications of patterned hair loss: a review. *J Cutan Aesthet Surg*. 2016; 9(1):3.
10. Garg A, Garg S. Donor harvesting: follicular unit excision. *J Cutan Aesthet Surg*. 2018; 11(4):195.
11. Garg AK, Garg S. "Combination grafting" of scalp and body hair to enhance the visual density of hair transplant and coverage of higher grade of baldness. *J Cutan Aesthet Surg*. 2020; 13(2):163.
12. Garg AK, Garg S. A histological and clinical evaluation of plasma as a graft holding solution and its efficacy in hair growth and graft survival. *Indian J Plast Surg* (Official Publication of the Association of Plastic Surgeons of India). 2019; 52(2):209.
13. Anand S, et al. Vertical and horizontal proportions of the face and their correlation to phi among Indians in Moradabad population: a survey. *J Indian Prosthodont Soc*. 2015; 15(2):125.
14. Calvo Peretti M, et al. Look at your hair the way you look at your face: concept of total facial skin and hair care. *Skin Appendage Disord*. 2020; 6(2):67-76. ■