

An Innovative Training Model for Practicing Hairline Designing

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Abstract

Hair transplantation has undergone a massive transformation in today's world. Besides advancement in technique there has also been a great increase in the demand for hair transplant. This rise in demand for hair transplant has further led to an increase in the requirement of professionally trained hair transplant surgeons. In this article we have described a new, versatile and simple technique for hair transplant surgeons to effectively practice hair line designing. This innovative technique proves vital in perfecting the art of the recipient area designing for the hairline, eyebrow, beard etc. for a surgeon who is undergoing training as well as for previously trained surgeons to rehearse an old skill to gain further confidence. Besides helping us practice the art of hairline designing this technique also teaches us the correct angle, direction, depth and density of slits which are ideal and thus helps us to be better prepared for the real life scenario.

Keywords: Eyebrow designing, frontal hairline designing, hair transplant training, practice techniques

INTRODUCTION

The global increase in the demand for hair transplantation (HT) has led to an increase in demand for trained hair transplant surgeons. As compared to the number of HT centers that are coming up all over the world, the number of training centers still remain scarce. Follicular unit HT has undergone several refinements to achieve its current form.^[1]

Despite these recent developments, the dearth of precious operating time for the surgeon results in a paucity of teaching time inside the operation theatre. On one hand, we claim that surgical skills cannot be mastered by simple observation, and on the other hand, cadaver training is not easily available. To overcome these problems, simulation-based learning becomes a vital technique. Along with providing an opportunity to teach surgeons, it provides an opportunity to rehearse extensively and gain confidence before entering the operation theater and operating on live patients. It is also a useful method for the surgeons wanting to learn and upgrade new skills. The most crucial step in this surgery is the creation of recipient sites to receive the follicular unit grafts. Keeping this in mind, we have developed a very effective, user-friendly, economical model to learn and practice one of the most important steps in HT, which is the recipient-site area designing.

TRAINING OF RECIPIENT-SITE SLIT MAKING

Materials used for this training model are a papaya, "cut-to-size" blade, blade holder, and Gentian violet [Figure 1]. However, this innovation can be modified by using other objects such as boiled potato, watermelon, and 21/20 G needles.

The advantages and disadvantages of other models as compared to papaya have been summarized in Table 1.

Traditionally, punches, Nokor needles,^[1] and Yeh needles^[2] have been used for recipient-site creation. Custom-cut blades^[3] were then developed for creating a perfectly fitting slit to receive the follicular unit grafts.

Method of slit designing on papaya:

1. To practice different densities of recipient-site slits, make small square boxes of size 1×1 cm on papaya.

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2. To practice the frontal hairline or eyebrow designing of recipient-area slits, we need to trace the required template on the papaya using a pen or Gentian violet.
 3. Hold the blade holder in dominant hand in pen-holding position, keeping the sharp edge of the blade at an angle of 30°–45° make an incision up to a depth of 4 mm.
1. Mark three points to replicate the midfrontal point (MFP) and both frontal temporal angles (FTA), and connect these points with a gently curved line.
 2. Make demarcations showing the transition zone (TZ), defined zone (DZ), frontal tuft (FT), micro- and macro-irregularities, and sentinel hairs.

Scalp hair restoration

Step-by-step approach for practicing the frontal hairline designing on a papaya is as follows^[4] [Figure 2]:

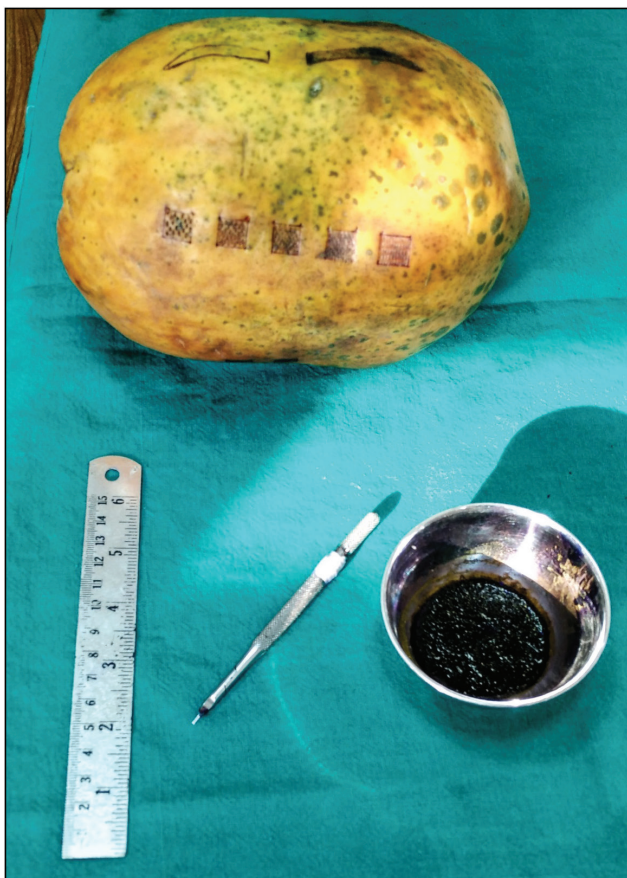


Figure 1: Materials used for recipient-site slit designing



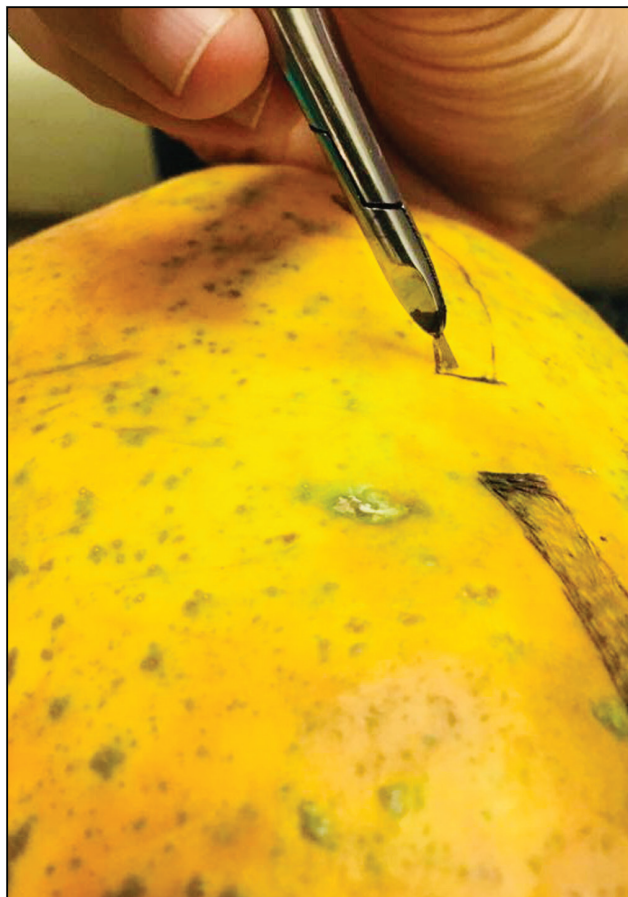
Figure 2: Approach for practicing frontal hairline designing on a papaya model

Table 1: Advantages and disadvantages of other models as compared to papaya

Models	Advantage	Disadvantage
Papaya	<ol style="list-style-type: none"> 1. Texture, size, and shape is comparable to human scalp 2. Color is suitable to appreciate the slits after staining with Gentian violet 3. Suitable for designing whorl 	<ol style="list-style-type: none"> 1. Surface of papaya is marked with many blotches 2. Shelf life of the papaya is short
Watermelon	<ol style="list-style-type: none"> 1. Shelf life of watermelon is longer 	<ol style="list-style-type: none"> 1. Hard outer watermelon rind makes it difficult to practice slit making 2. Texture of watermelon is not comparable to human scalp 3. Color of the rind being dark makes it difficult to appreciate the slits
Boiled potato	<ol style="list-style-type: none"> 1. After peel is removed, potato serves as a good background for appreciating slit pattern on staining 2. Its size is suited for eyebrow designing 	<ol style="list-style-type: none"> 1. Not suitable for hairline designing of scalp

Table 2: Angle and direction of hairline slits

Part of the frontal hairline	Angle	Direction
Frontal hairline	15°–20°	Anterior, slightly left/right
Midsalp	30°–45°	Forward toward the nose
Lateral hairline	10°–15°	Forward up to the FTA
Temporal hairline	5°–10°	Inferior lateral toward the ear

**Figure 3:** Sagittal slits

Angle and direction of slits

Angle refers to the degree of emergence at which the hair exits the scalp, whereas direction refers to the way the hair points when leaving the scalp.^[4] Angle and direction of hairline slits are given in Table 2.

With respect to direction of blade, slits can be made in either sagittal [Figure 3] or coronal [Figure 4] plane.^[5] With respect to pattern of arrangement of slits, they can be made in linear/curvilinear pattern or staggered/brick pattern^[5] [Figure 5]. Incision density for recipient area shows densities of 20, 30, 40, and 50 FU/cm² [Figure 6]. Thus, keeping in mind the above instructions, the pattern for recipient-site creation of the frontal hairline can be practiced on a papaya [Figure 7].

**Figure 4:** Coronal slits

Eyebrow restoration

Step-by-step approach for practicing eyebrow designing on a papaya is as follows^[6,7]:

1. Draw two symmetrical outlines of left and right eyebrows by tracing the head, body, peak, and tail of the eyebrow.

Recipient-site slits size^[6]: 0.6–0.8mm in “herringbone” pattern.

Graft count^[6]: 100–400 grafts per eyebrow.

Angle and direction of eyebrow slits are given in Table 3.

With the help of these guidelines, we may be able to master the intricate pattern of slit making to create the recipient zone for the eyebrow as shown in Figure 8.

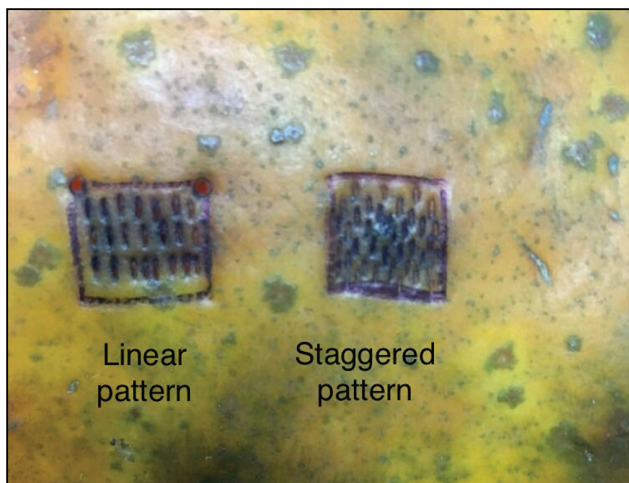


Figure 5: Linear and staggered pattern of slits

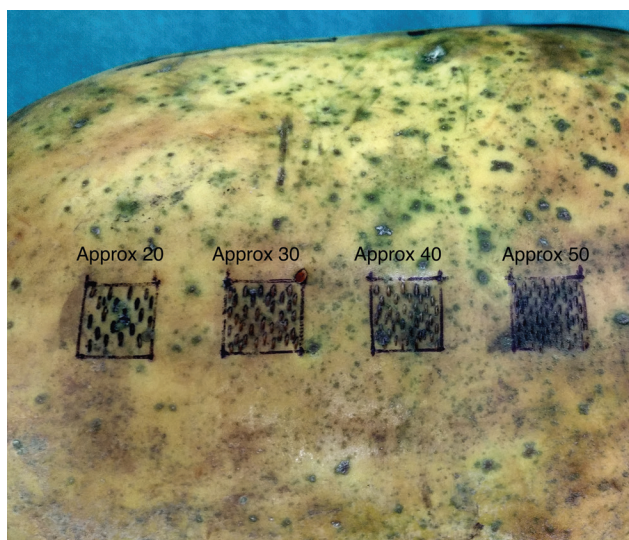


Figure 6: Density for recipient area

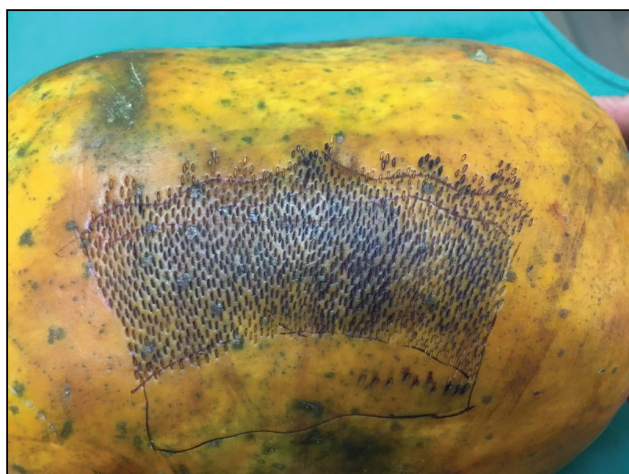


Figure 7: Frontal hairline slits practiced on a papaya

CONCLUSION

To keep up with the fast-pacing demand of HT across the globe, better training methods are required. This simple

Table 3: Angle and direction of slits of eyebrow

Part of the eyebrow	Direction	Angle
Head	Vertical	As flat as possible to the surface
Body	Upper border: downward and lateral	As flat as possible to the surface
	Lower border: upward and lateral	
Tail	Crosshatched pattern	As flat as possible to the surface
	Upper border: downward and lateral	
	Lower border: Upward and lateral without crosshatching at the end	



Figure 8: Eyebrow slits practiced on a papaya

innovative module is a cost-effective, acceptable, and easily replicable refinement in creating hair transplant recipient sites without compromising on the aesthes. The only drawback of this method is that we may not be trained to deal with the bleeding and oozing that occur while making slits in a patient. Nevertheless, besides, helping us practice the art of designing hairlines in different recipient areas, this method also teaches us the importance of using the appropriate angle, direction, depth, and density of incisions so that we may be confident and better equipped in doing so in a real-life scenario.

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Conflicts of interest

There are no conflicts of interest.

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