

# Assessing the Efficacy of Follicular Unit Extraction (FUE) in Beard and Moustache Transplants: A Comprehensive Analysis of 300 Cases

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**Abstract:** ***Aim:** To assess the effectiveness and safety of the FUE (follicular unit extraction) technique in beard and moustache transplant surgery. **Methodology:** This observational study was carried out at a Richardsons dental and craniofacial hospital. A total of 300 patients who underwent beard and moustache transplants were included in the study. The follicular unit extraction technique was used in all patients with postoperative follow-up till 1 year. This technique shows favourable results in the form of scarring, comfort and recovery. Pin-point white scars were noted in about 29 cases. However other postoperative complications like infection, necrosis, and numbness were not observed. **Conclusion:** The FUE procedure is a reliable and safe technique for beards and moustache transplants.*

**Keywords:** FUE technique, beard moustache transplant, hair transplant, patchy beard

## 1. Introduction

Beard and moustache transplants have gained popularity recently, aimed at enhancing facial regions with low hair density and improving existing facial hair aesthetics. This surgical technique, which involves the extraction of scalp grafts using the follicular unit extraction FUE method and their subsequent insertion into pre-made slits, has evolved to provide excellent aesthetic results with minimal side effects<sup>1</sup>.

A single hair unit predominates in areas like the beard and the scalp's outer borders, but thicker sections of the scalp typically have two to three hairs per unit. Additionally, in these denser places, individual follicles tend to create thicker (coarser) hair shafts, resulting in increased hair weight (volume)<sup>2</sup>.

Follicular unit transplantation (FUT) and follicular unit extraction (FUE) are the two main forms of hair transplantation methods. Currently, FUE is the more popular method since it may have advantages over FUT<sup>3,4,5</sup>.

Various surgeons have employed a variety of techniques in the past to repair beards and moustaches. In 1972, Vallis used a full-thickness strip graft from the parietal scalp to transplant hair to the upper lip to produce a moustache<sup>6</sup>. In 1999, Reed underwent a single follicular unit transplant (FUT) to treat cleft lip and moustache alopecia<sup>2</sup>. The process has been improved over the past 20 years to provide outcomes that are aesthetically acceptable. The purpose of

our study is to outline our observations following 300 cases of beard and moustache transplant surgery.

## 2. Aims and objectives

To determine the effectiveness of the FUE technique in beard and moustache transplant by assessing following parameters-

- 1) Mean surgical time for transplant.
- 2) Pain in the post op period.
- 3) Incidence of surgical site infection.
- 4) Scarring at the donor site.

## 3. Materials & Methods

### Inclusion Criteria

- 1) Beard or moustache enhancement for aesthetic reasons to achieve the desired styling.
- 2) Congenital hypotrichia or atrichia.
- 3) Scars due to trauma, burns, or surgery.
- 4) Traction alopecia.
- 5) Moustache reconstruction in cases of cleft lip repair.
- 6) Correction of previously transplanted beard.

### Exclusion Criteria

- 1) Age less than 18 yrs.
- 2) Uncontrolled diabetes.
- 3) Chronic alcoholics and smokers.
- 4) Psychiatric History
- 5) Patients on medications such as propranolol, coumadin, and amphetamines.

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This observational study was conducted at Richardsons Dental and craniofacial hospital, Nagercoil, Tamilnadu, India. In this study, 300 patients who underwent beard and moustache transplant surgery were included. Written informed consent was taken for the surgical procedure. All the cases were daycare procedures and were performed under local anaesthesia. A detailed medical history of the patient along with an examination of the face was done. Those patients on Antiplatelet and anticoagulation medications were stopped to mitigate bleeding risk. Local anaesthesia was administered with a mixture of 30ml xylocaine with adrenaline, 30ml 0.9% normal saline and 4ml of 0.5% bupivacaine hydrochloride. Hair grafts were harvested from the mid-occipital area of the scalp using the FUE technique as shown in Figure 1 and stored in cold Ringer's lactate solution as shown in Figure 2.

Typically, only one or two hair grafts are removed during extraction. Later, recipient area slit-making was completed. Planning for the frontal and lateral zones was completed and implantation of hair grafts into the recipient site was done as shown in Figure 3. The pain was assessed according to VAS (Visual analogue scale) Score on the 2nd post-operative day (POD-2). The results of the study are depicted in Table 1.

#### 4. Discussion

Men have always seen facial hair as a symbol of masculinity. As men have grown more mindful of their appearance, beard and moustache rebuilding and cosmetic enhancement have become popular. Various surgeons have employed a variety of techniques in the past to repair beards and moustaches.

Currently, FUE is the more popular method since it may have advantages over FUT.<sup>3,4,5</sup> Such as,

- More grafts are available for harvest.
- Since scarring is less noticeable, the patient's hairstyle is not important.
- Laxity and density of the donor location do not provide a substantial barrier.
- Less postoperative pain
- Postoperative recovery time is shortened
- The surgeon can focus on clusters of follicles that are a certain size or hairs that are a certain diameter or pigmentation.
- If necessary, the surgeon can focus on hairs in areas other than the traditional donor site, such as the pubis, chest, back, or parietal scalp.

At puberty, androgenic hair, particularly that in the beard, changes into terminal hair and keeps getting denser until the mid-thirties. The beard hair is coarser than the scalp, and has a larger root and a blunter tip, making it typically triangular in shape<sup>8</sup>.

According to the 2020 International Society of Hair Restoration Surgeons (ISHRS) practice consensus, 5% of treatments for men's beards and moustaches and nearly 15% of procedures for men's non-scalp parts of the body were performed<sup>7</sup>. Nearly twice as many targeted non-scalp zones are now present as there were in 2012 (7.1%). The

procedure's acceptance and demand have also increased significantly for indications related to decreasing follicular density in face regions and in patients looking to accentuate their natural facial features<sup>1</sup>.

In comparison to the scalp, the hair density is lower over the beard. The average beard has one hair per graft, 65 follicular units per square centimetre, and 70 hairs per square centimetre on average<sup>9</sup>. The density is extremely high, ranging from 45 to 50 FU/cm<sup>2</sup> over the cheek area to 75 to 80 FU/cm<sup>2</sup> over the chin area. Given that Middle Easterners and Southeast Asians have the highest beard densities of all ethnic groups, moustache hairs were even denser, averaging about 85 to 90 FU/cm<sup>2</sup> laterally and 150 to 160 FU/cm<sup>2</sup> in the centre area<sup>10</sup>.

In our study we found that the mean age was 29.5 years, the mean operative time was 320 mins, and the mean pain according to VAS Score on 2nd POD was found to be 2. The most common complication in our study was found to be pinpoint white scars over the donor area which accounts for 9.7% of the total study population. None of our patients had infections, necrosis and nerve damage. The results are shown in Table 1.

#### 5. Conclusion

This study demonstrates the reliability and safety of the FUE technique in beard and moustache transplants. With a focus on 300 cases, the study highlights minimal scarring and an absence of significant postoperative complications, confirming the techniques effectiveness for beard and moustache transplants.

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**Tables**

**Table 1**

Results	
Mean age	29.5 years
Mean operative time	320 mins
Mean Pain according to VAS Score on 2nd POD	2
Infection	0 case
Necrosis	0 case
Pinpoint white scars	29 cases (9.7%)
Numbness	0 case

**Figures**



**Figure 1:** Harvesting hair grafts from the midoccipital area of the scalp using FUE technique



**Figure 2:** Harvested hair grafts are stored in cold Ringer’s lactate solution.



**Figure 3:** Implantation of hair grafts into the recipient site.