

Donor Site Morbidity in Submental Flap: Emphasizing on Facial Hairs Direction

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Abstract

Introduction: Donor site morbidity is an important factor for selecting a flap for reconstruction. Submental flap using submentum skin for reconstruction has low donor site morbidity. Up to now, donor site morbidity of submental flap in Caucasians has not been evaluated. **Materials and Methods:** In a retrospective study, donor site morbidity of the submental flap including changes in hair direction, hypertrophic scars, and suture marks was evaluated. **Results:** Forty patients with at least 2 years of follow-up were evaluated. Female patients indicated better esthetic results. Abrupt beard hair direction change occurred in five male patients. Two hypertrophic scars and one suture mark were recorded. **Conclusion:** The direction of beard hairs in submentum may be changed after submental flap harvest. Accordingly, this is important in some ethnic and religious groups.

Keywords: Beard hairs, donor site morbidity, submental flap

INTRODUCTION

Donor site morbidity is an important factor for selecting a flap for reconstruction.^[1] Submental flap uses submentum skin for reconstruction and has low donor site morbidity.^[2] This flap has a large paddle area, reliable, and in proximity to oral cavity. Flap harvest is easy and oncological safe in necks without metastasis. Some beneficial esthetic effects are also mentioned in the articles, to improve the cervical angle and eliminate the ptotic chin.^[3,4] Morbidity of donor site for this flap has been earlier evaluated in an article with significant results. Five evaluated parameters were smiling, whistling, neck extension, beard hair changes, and esthetic outcomes.^[5]

This investigation was done on Taiwanese population with less hairs in their upper neck and submentum, while Caucasian males had high-density thick beard hairs.

MATERIALS AND METHODS

Those patients for whom myocutaneous submental flap was used for oral cavity reconstruction were included in a retrospective study. All the patients were operated in the Oral and Maxillofacial Department of a university hospital (2005–2017) for oral cavity reconstruction. Minimum follow-up

duration was 2 years. Donor site morbidity including change in hair direction, hypertrophic scar, and suture marks was evaluated.

RESULTS

Fifty-two patients had been managed by submental flap, among them 40 patients responded to recall. Twenty-two patients were male and 18 of them were female. Age range was between 8 and 82 years.

Female patients were more satisfied, but variable results were recorded in male patients; some with good esthetic results and the others with more noticeable changes. Patients with low-density hairs in the submentum and upper neck had better esthetic outcomes along with the patients with high-density hairs in these

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two regions. The worst results were obtained in five patients with high-density hairs in the submental region and low-density hairs in their upper neck region [Figure 1]. Hypertrophic scar was observed in two patients; an 8-year-old girl and a 16-year-old boy [Figure 2]. Suture marks were present in one female patient. The sutures were removed with delay, due to the fear of wound opening expressed by the patient [Figure 3].

DISCUSSION

Submental flap is known as a flap with low donor site



Figure 1: (a) Linear submental scar in a female patient, (b) submental donor site in a patient with low-density beard hairs, (c) submental donor site in a patient with high-density beard and low density hairs in upper neck. Demarcation line is 1 cm under the inferior mandibular border, (d) submental donor site in a patient with high-density hairs in upper neck and beard



Figure 3: Suture marks because of late suture removal, due to the patient fear from wound opening

morbidity.^[6] Based on the composition of the flap, it can be classified as fasciocutaneous, myocutaneous, or myoosseous. Myocutaneous variant with inclusion of anterior belly of digastric and mylohyoid muscle is the most prevalent form [Figure 4]. In male patients, donor site morbidity is more important due to their problem with growth of beard hair.^[7] Hair density in the submentum and upper neck determines the esthetic results. Abrupt hair direction changes occur in patients with high-density hairs in the submentum and low-density hairs in the upper neck. Transition zone between these two areas has been transferred with submental flap. After submental flap harvest, a distinct demarcation line remains in 1 cm under the inferior mandibular border, which is coincided with the upper limit of submental flap design. Before the surgery, patients with long beard hairs were forced toward clean shaven or light stubble after submental flap harvest.

Patient age is another important factor in donor site morbidity of submental flap.^[8] Children and teenagers had less skin laxity



Figure 2: Hypertrophic scar in a 16-year-old male patient with submental flap



Figure 4: Donor site after harvest of myocutaneous submental flap with inclusion of digastric and mylohyoid muscles in the pedicle side and before the skin closure. The flap was transferred to oral cavity, so it is not visible in this figure

in the submentum. Exceeding the limitation of pinch test due to defect dimensions results in tension closure and consequently causes hypertrophic scar.^[9]

Suture marks are less important and can be avoided if correct surgical technique and strict adherence to the limitations of the flap width in the submental region are adhered.

CONCLUSION

The direction of beard hairs in the submentum may be changed after submental flap harvest. This is important in some ethnic and religious groups.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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Conflicts of interest

There are no conflicts of interest.

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