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Research Article

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Scalp Rotation Flap-Minor Changes Major Gains

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Abstract

Introduction: Scalp plays an important role in individual's identity because of the hair at the same time it is prone for injury as it is exposed. Restoring a hairy scalp is a challenge. Rotation flaps are local option for medium defects reconstruction. However larger defects will need transposition flaps which leave big donor site defects. We modified the traditional method of rotation flap to cover large defects with either minimal or no donor site defect.

Materials and methods: 10 cases of scalp defects were operated with modification of rotation flaps.

Results: All flaps healed well. Donor site defect was completely closed or covered with minimal skin graft.

Conclusion: Minor changes in planning of rotation flap helped to cover large defects with less or no donor site defect.

Keywords: Scalp; Rotation flap; Reconstruction; Cosmetic; Trauma

Introduction

Scalp is unique structure, as it is hair bearing, has complex histology, and widely exposed. Because of these reasons scalp is susceptible to a multitude of neoplastic as well as inflammatory condition [1-3]. Scalp defects can arise following treatment of same and also following traumatic insults. The hair-bearing characteristics of the scalp and forehead being the cosmetic unit of face, reconstruction of scalp is challenging for all surgeons. The Rotation flap described is a good tool to close the medium sized defects without donor site defects [4]. However large defects cannot be closed by rotation flaps and need transposition flap which leave large alopecic donor site defects. Hence modified the traditional planning and elevation of rotation flaps so as to cover larger defects and could have minimal donor site defect [5]. So, the article is titled: "Scalp reconstruction with modified rotation flap-minor changes major gains".

Materials and Methods

This study was conducted in the department of plastic and reconstructive surgery at our institute, Bangalore during the period of 2012 august to 2013 august with Total 10 cases.

Rotation flap is designed as follows:

Modification

The defect is triangulated (any shape but the widest will be the base of defect-ABC). Then the widest distance AC is halved and projected onto distance AC (as CD) and BC (as BE). Then DE becomes the arc of rotation for the proposed modified rotation flap. The extra tongue of tissue between point E and point A is curved arbitrarily (Figure 1).

Modification-1: As the triangle is not isosceles the flap elevated with DE as the arc will not close the defect (i.e., point E won't meet point A) hence the extra tongue (ABE) elevated by DE as the arc is utilised. Sometimes the tongue projects beyond the defect, such extra flap is utilised to fill in the gap created by incision along AF. This closes the defect completely and also breaks the straight line, to give clear contour for flap (Figures 2-3B).

Modification-2: Some of the defects the flap tongue (ABE), is utilised to close the defect by a U-turn onto the flap beyond marking DE. This flap was helpful in large defects (Figures 4-5B).

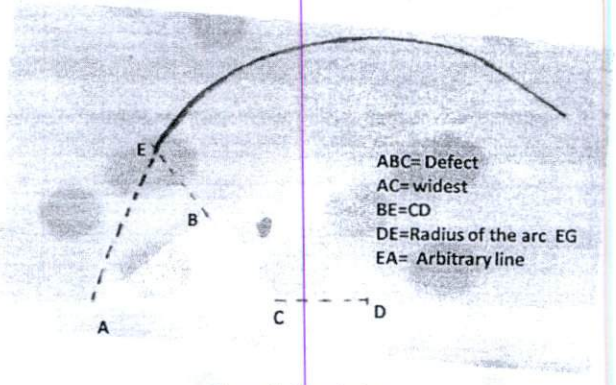

Figure 1: Flap design.

Results

Table 1 shows the patient details, the modification used and the flap status. Our 6 patients were male and 4 female. Majority of scalp defects originated because of trauma. The defects ranged between 5-12 cms (average 6.9 cms). Both modifications were used. Modification 2 was used in larger defects and 2 cases needed donor site skin grafts. No patients had flap necrosis or any complication. In modification -2, when tongue was rotated on itself there was dog ear near the closure. But this was very small and settled over the period.

Discussion

Scalp due to its exposed nature is affected own to by variety of insults like trauma, burns and infection [6]. The complex histology of scalp comprising of hair follicles, aponeurosis and fat can give rise to varied

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