A METHOD OF MANAGING HEMICRANIAL SCALP LOSS

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SUMMARY

A method of management for hemicranial scalp loss is described. The contralateral hair bearing scalp is transferred anteriorly. In due course it enables the individual to cover the denuded area by natural hairs with a better aesthetic result and near normal rehabilitation in the society.

The incidence of scalp avulsion has shown a rising trend in recent years. The anatomic considerations and pathophysiology are already well documented (Bhattacharya et al., 1982). Replantation of the avulsed scalp by microvascular surgery has limited role as the specimens are badly crushed and lacerated. Immediate split thickness skin graft is considered to be a judicious approach in majority of cases, provided the pericranium is intact. However, this

Fig. 1. Pre-operative view.

Fig. 2. The flap has been tubed.
method may not satisfy patients who would prefer to cover their denuded scalp by natural hairs and not by a wig. In such a situation the present technique achieves gratifying result, even if there is hemianal loss of scalp. The defect is reconstructed by transposing a large flap that contains the whole remaining scalp.

We have applied the technique in three female patients, ranging between fifteen to twenty years. The mode of injury in all was entanglement of one of their plaits of hair in the moving shaft of the pumping set.

Case Report

A fifteen-year old female suffered an extensive avulsion injury 7 years back by the moving shaft of a pump. This resulted in loss of left half of her scalp extending from the frontal to the occipital region (Fig. 1). Initially she was treated in another hospital where primary thin split skin grafting was done. Two years back she was referred to our unit with two main problems: (i) she refused to wear a wig which was advised, (ii) repeated ulceration of the grafted area. The patient was treated by transposing the anteriorly based right hemiscalp in the left fronto-parietal region. The rest of the previous unstable skin graft was replaced by a thicker graft. Within two years the hair grew from the frontal flap covering completely the
posterior grafted area. The need for a wig was obviated. The regrafted area became soft and free from ulceration. Thus she was satisfactorily rehabilitated both aesthetically and functionally.

**Technique**

*Stage I:* A bipedicle scalp flap measuring $10 \times 22$ cms was elevated, covering whole of the right hemicranium. The plane of dissection was in the loose areolar tissue lying between the pericranium and the galea aponeurotica. The flap was tubed and the secondary defect was split skin grafted (Fig. 2).

*Stage II:* Three weeks later the occipital end of the tube was detached. The whole flap was unfolded taking care of the posterior branch of the superficial temporal artery (Fig. 3). The previous graft of the left frontoparietal region measuring equal to the size of the flap was excised. The flap was transposed anteriorly, covering both frontoparietal areas (Fig. 4). The posterior unstable graft was replaced by a thicker split-skin graft. Thus approximately frontal one-third of the whole scalp was covered by a hair-bearing flap and posterior two-thirds was replaced by the skin graft. Within two years, the hair from the frontal flap grew sufficiently long to conceal the whole of the posterior grafted area (Fig. 5). Finally she regained her natural appearance and started attending her school happily (Fig. 6).
Discussion

Permanently stable and cosmetically acceptable resurfacing of denuded scalp, resulting from avulsion or burn, present many problems. Although in majority of cases free skin graft may tide over the immediate crisis, yet it is often associated with local complications. Further the trauma of scarring and baldness is alleviated only by wearing a wig. They may even require future replacement by a flap. Distant flaps have their own disadvantages and do not provide adequate amount of hairs, while local scalp-flaps tend to advance hairs on to hairless areas. Orticochea (1967, 1971) has described four-flap and three-flap scalp reconstruction techniques. Hamilton (1971) and Ship and Packer (1971) have transposed hair-bearing scalp to the forehead and temporal areas to provide adequate soft tissue on 'Crane principle', which were later skin-grafted.

The proposed technique can be performed as a primary procedure. One large flap including half of the scalp ensures better circulation. The operation in the first patient (illustrated) was done in two stages because we were over cautious to prevent the further loss of scalp tissue. Subsequently in two more cases the operations were performed as a primary single stage procedure, without delay. This method justifies its advantages by providing natural hairs capable of concealing and protecting the rest of the grafted scalp and thus allows complete social rehabilitation of the patient.

REFERENCES


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