

A prefabricated hair-bearing island flap for lip reconstruction

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Summary—We report a case of reconstruction of the upper lip in the male using a prefabricated hair-bearing island flap. The flap was made by implantation of a superficial temporal vascular bundle with microvascular anastomoses to the facial vessels. We conclude that the technique is a useful alternative to other methods of reconstruction because of its reliable blood supply.

In this paper we report a case of upper lip reconstruction in the male with a secondary island flap made by free vascular bundle transfer.

Case report

A 46-year-old man who had a basal cell epithelioma extirpated from his upper lip about 5 years previously sought correction of the deformity (Fig. 1). We planned a bearded skin island flap transfer from the chin. The ipsilateral superficial temporal vascular bundle was first anastomosed to facial vessels in the area (Figs 2 and 3). A small skin island was attached to the tip of the vascular bundle and used to monitor the success of the anastomosis. Three weeks later we elevated the bearded skin island flap (30 × 30 mm; the length of the vascular pedicle was 80 mm) without a delay procedure (Fig. 4).

The flap has survived perfectly and the beard's growth can be seen (Fig. 5). The operative procedures are summarised in Fig. 6.

Discussion

The concept of vascularising a flap by the preliminary introduction of a vascular bundle was introduced by Orticochea in 1971. He reported the transplantation of superficial temporal vessels based distally, to create a compound retro-auricular flap for the reconstruction of nasal defects. More recently Erol and Spira (1980), Shen (1981) and Guyuron *et al.* (1984) described applications of this principle. Shintomi and Oura (1982) and the present writers (Hyakosoku *et al.*, 1984) have reported the use of microvascular techniques to introduce the new blood supply.

The former made prefabricated flaps by implanting under the skin the thoracodorsal vascular bundle with a small latissimus dorsi muscle mass at the tip, and later transplanting the composite block of tissue as a free flap. In contrast, we made a pre-

fabricated flap by a free superficial temporal vascular bundle transfer with a microsurgical technique for secondary transposition as an axial pattern flap. On this occasion we again applied the concept to make a skin island flap from a more suitable donor site than would otherwise have been available.

Until now, the best way of reconstructing the upper lip in the male has been with a tubed or arterial island flap of hairy scalp, or with a submental bearded tubed flap (Tsur *et al.*, 1983). The former method has the disadvantages of colour and texture mismatch and the thickness of the scalp skin island. The latter has a limited flap length without a preliminary delay.

In contrast to them, our method has several advantages. The flap can be designed to use the most suitable donor site and shaped to the specific requirements of the repair. The patient need not suffer from a strange appearance during the transfer of a distant flap. The only disadvantages are the need for two operative stages and the use of microsurgical technique.

Two questions arise from our experience. The first is, how much tissue must the surgeon take with the vessels at the first operation in order to maintain the anastomotic circulation between the artery and the vein? Shen (1981) suggested, after dissections of fresh human cadavers, that blood circulation from artery to vein takes place within the vascular bundle. In our case we took a small island of skin to monitor the viability of the vascular bundle but we do not know if this was a significant factor in maintaining the circulation. The second question is, could the size and the thickness of the secondary flaps be enlarged by using delay procedures? We are now investigating these questions.



Fig. 1



Fig. 2



Fig. 3



Fig. 4



Fig. 5

Figure 1—Preoperative view of the patient. Figure 2—Superficial temporal vascular bundle elevated with a small skin island at the distal end. Figure 3—The vessels of the vascular bundle were anastomosed with facial vessels microscopically. The bundle was then implanted under the bearded skin. Figure 4—Three weeks after the operation, a bearded skin island flap was designed on the implanted vascular bundle. The hairy skin fragment for monitoring blood circulation was resected after elevation of the skin island flap. Figure 5—About 6 months after the operation, the growth of the transplanted beard is seen. The scars of the donor sites are inconspicuous. Figure 6—(Top) The first stage of the operation. (Bottom) 3 weeks after the first operation, the secondary flap elevation and transposition were performed.

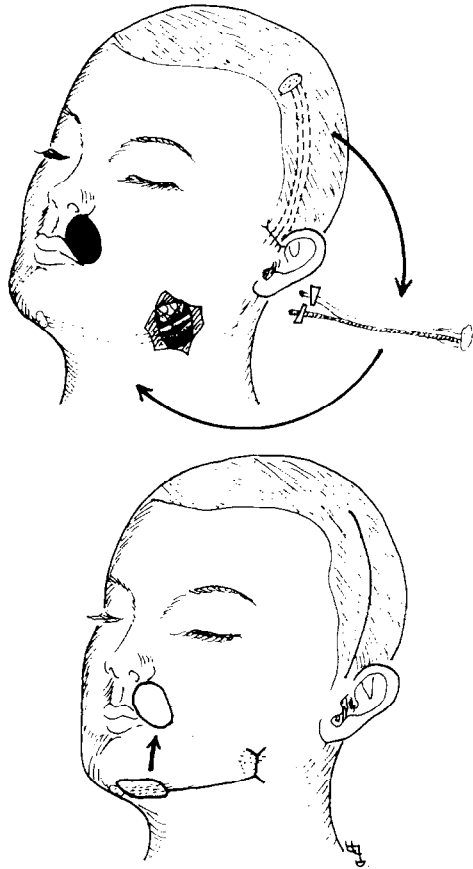


Fig. 6

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