

Reconstruction of Larger Nasal Defects using Tip Divided-Scalping Forehead Flap

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The scalping forehead flap, first reported by Converse in 1942 [1], is one of the best techniques for total and subtotal nasal reconstruction because this flap is extremely reliable and provides skin of good quality and colour-match [2]. We introduce the technique and refinements of nasal reconstruction for defects together with the nasal lining and the upper lip by using the divided distal part of the scalping forehead flap. This method provides adequate tissue for large and three-dimensional defects in a one-stage procedure.

The flap is elevated, as described by Converse [1], beginning from the selected side of the forehead in the subcutaneous plane, superficial to the frontalis muscle.

In this manner, the selected part of the forehead, which will be used to cover the defect, is split vertically into the two flaps (flap X and Y). The upper lip and right-nostril floor is constructed with the lateral flap: Flap X; and the extra nasal structure with the medial-side flap: Flap Y. First, transferring the Flap X to the defect in the lower half of the nose and upper lip, which the local lining flaps could not cover, by rotation and advancement, allows the upper lip and right-nostril floor to be reconstructed. Next, flap Y is transferred to the nasal area, where the distal part of the flap is trimmed, depending on the defect size (Figure 1).

The pedicle is usually divided, after an interval of 2 or 3 weeks days. When appropriate, late revisions can be performed, such as flap defatting, configuration of the nostril symmetry, and restoration of the nasal framework, thus improving the esthetic appearance of the nose.

We introduce one representative case of squamous cell carcinoma (SCC) on the medial floor of the right nasal cavity. A complete tumoral resection was performed with a distance of 1cm or more from the tumor, including the ala base, tip, colmella, and full thickness of the upper lip (Figure 2a).

We reconstructed the upper lip and right-nostril floor with the Split-Scalping forehead flap (Figure 2 b,c).After the operation, mild venous congestion was observed in the tip of flap X, but it improved within 6 days. 18 days later, the flap divided after delay procedure was added substantially. The aesthetic and functional results were acceptable, except for a slightly slanted nose and contracture of the upper lip due to a twisting effect of the flap X (Figure 2d).

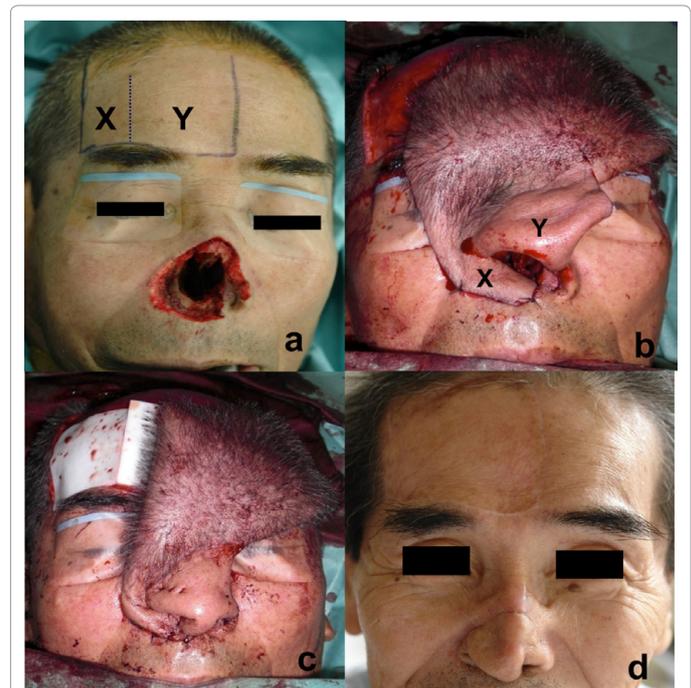


Figure 2: (A) Preoperative design of tip divided-scalping forehead flap. (B) Elevation of the flap. (C) intraoperative view of flap setting. (D) post-operative result at 1 year.

This refinement surgical technique has the following advantages 1) the forehead is adjacent to the upper lip, as well as the nose, it has similar color and texture and it has an excellent and reliable blood supply. 2) The flap can provide sufficient tissue as a result of a single flap in a one-stage procedure. 3) This technique reduces the operation time and the number of donor sites. However, the following points still remain as minor problems: 1) after the operation, venous congestion was observed in the distal third of flap X, owing to twisting and inseting of the flap, though gradual improvement is found within 5 days. 2) Little raw surface remained, especially on the back wall of the upper lip. Therefore, the mucosal flap or skin graft should sometimes be used to avoid contracture of the lip.

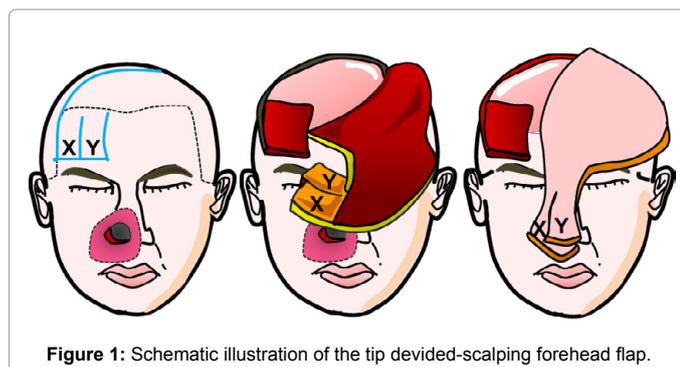


Figure 1: Schematic illustration of the tip divided-scalping forehead flap.

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