Romberg's Disease: Modified Washio Flap for Facial Contour Reconstruction

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Progressive hemifacial atrophy, popularly known as Romberg's disease, can manifest in varying grades of severity. In the majority of persons, the lower half of the face and chin are the most severely affected areas. The defect gets sharply demarcated in the midline, with changes in hair growth, making the face cosmetically disfiguring.

Most patients require only soft-tissue augmentation.[1] Free flaps have been suggested as the standard procedure,[2–6] because nonvascularized tissues are prone to resorption,[7] whereas synthetic materials have the risk of extrusion.[8] The commonly used free flaps are non–hair-bearing, thus reducing the options for a male patient who wants a beard.

We reconstructed the face of a male patient with Romberg's disease by using a modification of the Washio flap[9] with a good cosmetic result on long-term follow-up.

Case Report

A 30-year-old man presented with Romberg's disease affecting the right side of his face, with the chief complaints of contour defect and patchy hair loss (Fig. 1, *above, left* and *right*). The right-sided facial atrophy had started when he was 14 years old and progressed insidiously until he reached age 23, after which it remained stationary.

The patient had been treated elsewhere, over a period of 2 years, with two sittings of dermis-fat graft and four sittings of fat injections without significant improvement. There was severe thinning of the facial skin and a prominent mandibular margin on the affected side. The mandible was uninvolved, and occlusion was normal. The left side of his face was normal.

A free flap was planned, but the patient was very insistent on having a beard, which forced us to look for further options. Posterior scalp skin, with its thickness and hair-bearing nature, ideally suited the requirements.[10] This transfer was executed by modifying the Washio flap.

Design of the Flap

The area of the cheek to be resurfaced measured 12 × 8 cm. Hair-bearing scalp skin of a similar size from the postauricular region was planned for shifting. The flap was designed as described by Washio and Giampapa,[9] except that the skin chosen was hair-bearing instead of the non–hair-bearing skin of the postauricular region.

The superficial temporal artery was first identified with Doppler ultrasonography because the area was scarred from previous operations. Points A, B, C, and D were marked (Fig. 1, *center, left* and *right*) and the flap was designed as follows:

1. Point A, the key point around which the entire flap rotates, is marked just in front of the anterior end of the helix and behind the superficial temporal artery.
2. The selection of point B is important because the line A–B forms the base of the pedicle. The length of line A–B should be about 8 cm. Usually, this point is selected near or at the hairline.
3. Point C is marked. When the flap is raised, it is divided along the line A–C. For the flap to reach the defect, line A–C must be approximately half the distance between point A and the farthest extent of the defect (which, in the present case, was the chin). In this patient, the distance from point A to the chin was 14 cm; therefore, the line A–C was 7 cm. To avoid injury to the superficial temporal artery and to facilitate the flap design, line A–C is drawn 15 degrees behind an imaginary

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