

Construction of a Flap That Can Move Functionally in Surgical Facial Repair

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Sir,

If soft tissue with muscle is resected because of tumor invasion, muscle function is lost. The face has soft tissues with free borders, for example, lips, eyelids, and soft palate. If they are reconstructed without functional movement, there can be many problems. If the total eyelid is reconstructed without elevating function, the patient cannot see with that eye. If the total upper or lower lip is reconstructed without the sphincter function of the orbicular oris muscle, eating and sucking are difficult. Therefore, we must add movement in the reconstruction of facial soft tissues with free borders.

To make a flap that can move functionally, we designed 2 types of reconstruction. Type A reconstruction incorporates muscle tissue into the flap (Fig. 1). The muscle flap chosen can be a free muscle flap transferred with neurovascular anastomosis or a neighboring muscle having the desired movement. The reconstructed flap must have space for incorporating the muscle flap in this type of reconstruction.

We have described functional lower lip,¹ upper and lower lips, and commissure reconstruction¹ with a forearm flap combined with a free gracilis muscle transfer. These reconstructions are classified as type A reconstruction. These patients obtained good oral sphincter function for eating, speaking, and air inflation.

For reconstructed flaps with no space for a muscle flap, we designed type B reconstruction, which incorporates tendon tissue into the flap (Fig. 2). The tendon is sutured to a neighboring muscle with the

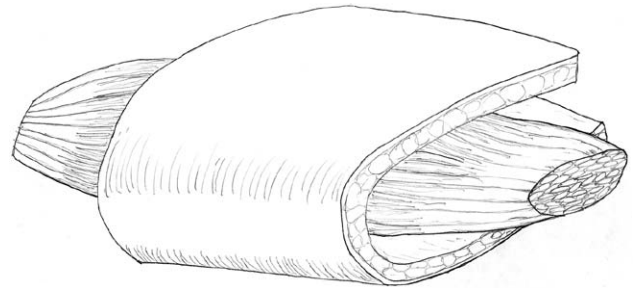


Fig. 1. Type A reconstruction incorporates the muscle flap.

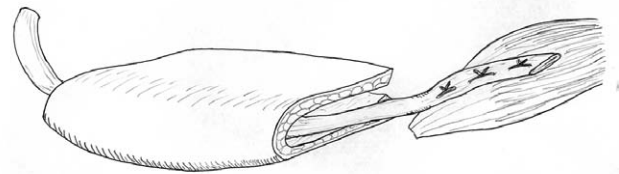


Fig. 2. Type B reconstruction incorporates a tendon that is sutured to a neighboring muscle with the desired movement. The neighboring muscle contraction conducts to the flap by the tendon.

desired movement. The neighboring muscle is attached to the flap by the tendon. Two tendons with different movements can be used, so the flap can be given a dual function. We have described eyelid reconstruction with a composite radial forearm palmaris longus tendon flap. In this case, a palmaris longus tendon was fixed to the frontal muscle to make it possible to open the eye.² We have also described dynamic velopharyngeal function restoration by a combined radial forearm-palmaris longus tenocutaneous free flap and a superiorly based pharyngeal flap in an oncology patient after total palatal excision.³ The palmaris longus tendons were sutured to the superior constriction muscle. The patient could resume oral intake 6 months after surgery. Speech intelligibility improved from severe to minimal hypernasality. These 2 reconstructions were classified as type B reconstruction.

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DISCLOSURE

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