

Local Transposition Flap - A Novel Method To Fill The Facial Defects

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Abstract

Large soft-tissue defects of the face present a challenging reconstructive problem to the surgeon. Optimal treatment of facial soft-tissue injury includes definitive reconstruction of the main aesthetic units of the face. We present a case of delayed soft-tissue flap reconstruction of the face following electric burn of face. The accident resulted in loss of the soft facial structures over the body of the mandible on the right side. Delayed soft tissue reconstruction was performed utilizing a transposition flap from the front of the neck to cover the defect over the exposed body of the mandible.

INTRODUCTION

The principles of immediate reconstruction of facial soft-tissue defects following trauma or tumor excision are well documented in the literature (^{1,2,3,4,5}). Aesthetic facial reconstruction requires adequate understanding of the face regional anatomy, the dynamics of tissue movement and the ability to use innovatively the tissue adjacent to the defect to create a reconstruction that preserves the function of the area and the cosmetic facial units.

The temporoparietal scalp flap is a useful source of tissue for correcting aesthetic units of the face (^{6,7,8,9,10,11,12}). The donor scar is hidden under the hair-bearing area.

The cervicopectoral flap has the same characteristics as facial tissue, consisting of thin, pliable tissue with a perfect color match (¹³). Cervicopectoral rotation flaps provide a straightforward, reliable, and efficient means to reconstruct complex defects of the face, lateral skull base, and neck, with the potential for excellent cosmetic results. The pedicle of the flap is quite reliable and enables a wide range of applicability.

CASE REPORT

A 10-year-old male suffered from electric shock on the right side of the face while consuming water from a tap with his hand. The patient took domiciliary treatment for the wound on the face till it turned black and gangrenous. The patient reported in our hospital where a thorough debridement of the wound was done. This resulted in a facial defect with exposed the body of mandible on the right side. The defect

was 8cm by 5cm in dimension. Concurrent anemia was corrected and the patient was built up for surgery. Wound infection was adequately treated with antibiotics. The patient was operated under general anesthesia. A local transposition flap consisting of skin, subcutaneous tissue and platysma from the front of the neck was fashioned and the defect over the mandible was repaired with this flap. The resultant defect over the neck was covered with a split skin graft taken from the thigh of the patient. Both the flap and the skin graft were accepted over a period of time and the recovery was uneventful. There was minimal cosmetic and no functional deformity.

Figure 1

Facial defect with exposed body of mandible



Figure 2

Transposition flap taken from the neck region



Figure 3

A healthy flap and split skin graft take-up after 1 month



DISCUSSION

For facial skin defects, the reconstructive surgeon should strive to optimize tissue match and scar camouflage while minimizing the distortion to neighboring facial landmarks. The surgeon must have an intimate understanding of the local anatomy and must be able to use the appropriate flap for the given characteristics of each defect and patient. Knowledge of several types of flaps and versatility in modifying these flaps are required for optimal facial soft tissue aesthetic results.

Segmenting the facial wound, in this case, was useful to develop a reconstruction plan to replace tissue with similar tissue and to provide consistently satisfying aesthetic results.

The temporoauricular scalp flap is a reliable technique for reconstructing large scalp and forehead defects (8). This flap reliability is based on the rich anastomotic arterial network of the scalp. The flap can be harvested in variable length and width with excellent tissue match. The main disadvantage of this flap is the residual donor defect. However, the skin graft can be reduced in size by serial excision.

The cervicopectoral skin flap is a massive flap of chest and neck skin, the major application of which is coverage of large cheek and facial defects (14,15,16,17). The cervicopectoral skin flap is analogous to the popular deltopectoral flap of Bakamjian (18). The blood supply consists of internal thoracic artery perforators. The overlying neck skin receives nourishment from platysma musculocutaneous perforators as well. The flap will reach, in ideal situation, cephalad to the zygomatic arch. The residual scars are favorably located with acceptable aesthetic result and with excellent flap reliability.

We now believe that the deep plane is the level of choice for dissection of cervicopectoral flaps when used for reconstruction of cheek or other facial defects.

Relatively bigger defects of the cheek can be easily covered with this flap with preservation of cosmesis and without any distortion in the symmetry of the face.

References

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