

Local & Regional Flaps in Head & Neck Reconstruction

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Local facial flaps are most often used in reconstruction of defects left after excision of skin tumors and represent the method of choice for repair of most facial defects that are too large for primary closure. Although skin grafts should be considered in reconstructing defects, local flaps are better suited for poorly vascularized recipient beds and frequently offer a better skin color match. Local flaps are the method of choice for repair of most facial defects that are too large for primary closure. This chapter reviews the commonly used flaps in facial reconstruction with an emphasis on their indications in particular circumstances. A review of regional flaps in head and neck reconstruction is also presented. Detailed information on skin tumors and their differential diagnosis is provided in corresponding chapters.

CLASSIFICATION

Method of Flap Movement

Local flaps can be classified by method of movement into pivotal, advancement, or hinged flaps (Table 76–1).

A. PIVOTAL FLAPS

Pivotal flaps rotate around a pivotal point and form one standing cutaneous deformity. Pivotal flaps may in turn be divided into transposition, rotation, and interpolated flaps. **Transposition flaps** have a linear axis with their base adjacent to the defect. In transposition, a lifting of the flap occurs, usually across a normal bridge of tissue. **Rotation flaps** are curvilinear in shape, with one border of the defect being the leading border of the flap. Although transposition and rotation flaps are both pivotal flaps, they differ in that the axis of a transposition flap is linear, whereas the axis of a rotation flap is curvilinear. An **interpolated flap** has a linear axis and its base is removed from the defect site. This flap requires either detachment of the pedicle as a separate procedure or burying of the pedicle under a bridge of skin at the time of reconstruction.

B. ADVANCEMENT FLAPS

Advancement flaps are flaps with sliding movement in one vector of movement. In an advancement flap,

one border of the defect is the leading border of the flap. Advancement flaps have two standing cutaneous deformities. These flaps can be further divided into single pedicle, bipedicle, or subcutaneous pedicle flaps.

C. HINGED FLAPS

Hinged flaps move like a page of a book in a swinging movement. They can be raised as subcutaneous flaps to fill a tissue defect in an adjacent site.

Flap Blood Supply

Flaps may also be classified according to their blood supply. The most commonly discussed are random and axial flaps.

A. RANDOM FLAPS

Random flaps are created by dissecting in the level of the subcutaneous fat. In so doing, the flap base derives its blood supply from perforating musculocutaneous vessels that lie in the deep subdermal and muscular plane. Perfusion at the free portion of the flap is derived from communication between the superficial papillary dermal plexus and the deeper subdermal plexus. Most advancement and rotation flaps fall into this category. An example of a random flap is the **rhombic flap**. For most random flaps, a length-to-width ratio of 1:1 is safe; however, in the face, this ratio can be extended to 2:1 or even greater without significant risk of flap loss or skin necrosis.

B. AXIAL FLAPS

In contrast to a random flap, an axial flap is based on a named vessel, which supplies the majority of the flap. Axial flaps have a subcutaneous artery extending along the linear axis of the flap. The blood supply of the most distal portion of an axial flap is often random. An example of an axial flap is the **paramedian forehead flap**, which is based on the supratrochlear artery and vein.