

Plate 36

Transposition Flap (90 degrees)

DESCRIPTION

The transposition flap is a local flap technique with a wide variety of uses. It is a rotating flap that is applicable in most body regions in the dog, cat, and other species, including birds. When it is based on the subdermal plexus as its primary source of circulation, its size is more limited than axial pattern flaps.

SURGICAL TECHNIQUE

- (A) Local skin tension is assessed by grasping between the thumb and index finger the skin adjacent to the defect to determine the laxity and elasticity present. The elevated skin fold indicates a transposition flap can be created parallel to this cutaneous ridge without sacrificing the ability to close the donor bed.
- (B) The width of the flap, which equals the width of the defect, is measured and marked off along the baseline. This corresponds to the pivot point of the flap. The base or pedicle of the transposition flap is aligned along the lower border of this defect (upper dashed line). The transposition flap is developed within 90 degrees to the long axis of the defect (lower dashed line), depending on the loose, elastic skin available for wound closure.
- (C) Flap length is determined by measuring from the pivot point to the most distant portion of the defect. This measurement, in turn, begins at the established baseline. Two parallel lines are drawn using the measured length dimension.

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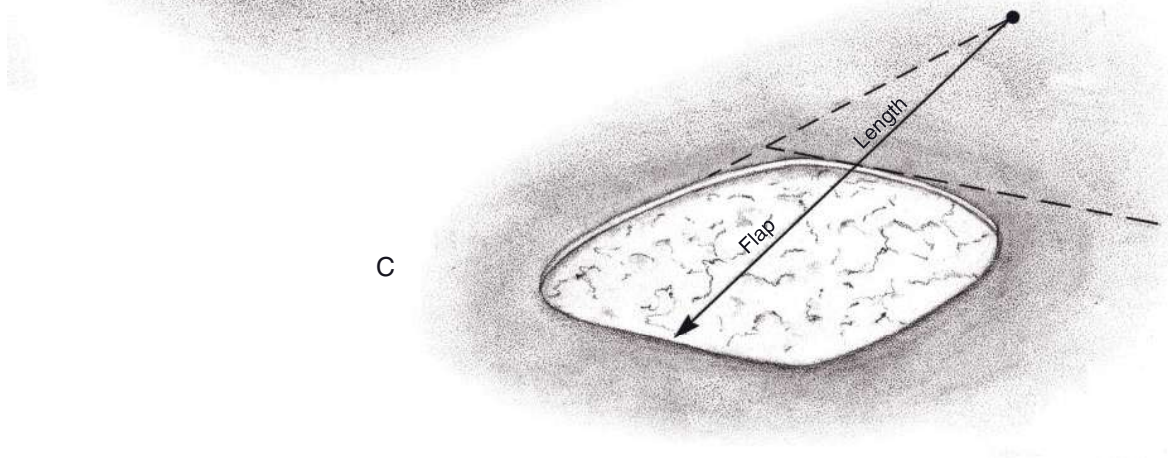
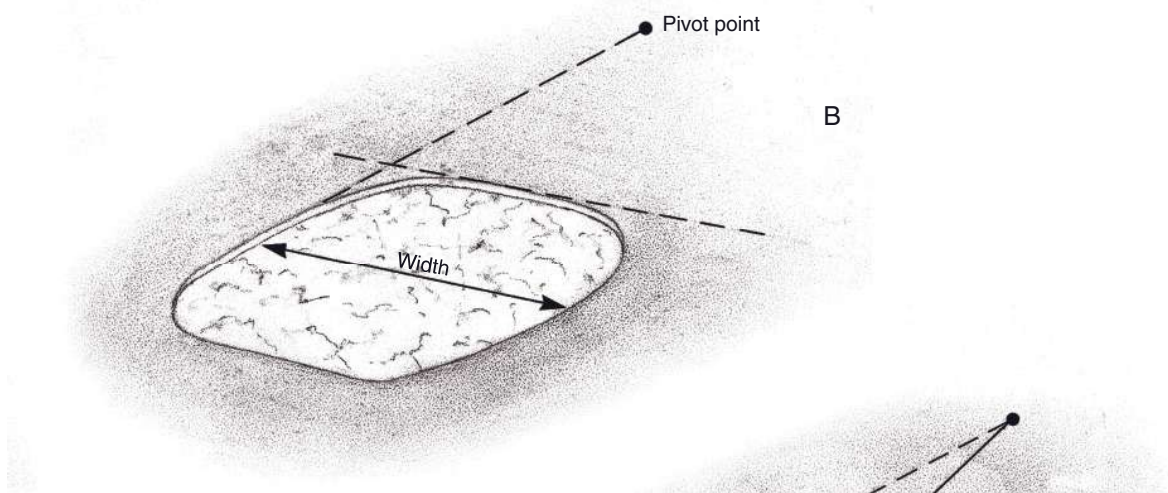
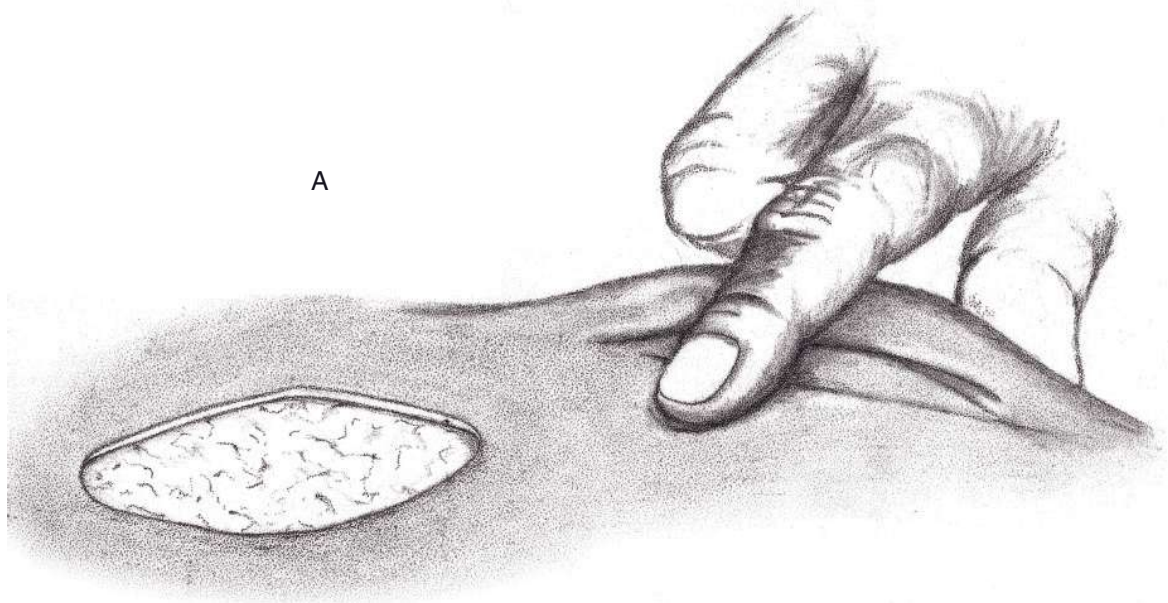


Plate 36

(Continued)

- (D) The flap is drawn with a marking pen prior to incising the skin. (Note that the transposition flap shares a common border with the defect.) The skin is carefully undermined using Metzenbaum scissors. Thin triangular “tips” of skin created during the elevation of the flap are trimmed or rounded off since they are prone to ischemic necrosis.
- (E) The flap is sutured into place using a simple interrupted suture pattern.
- (F) The donor bed is closed in a similar fashion. A half-buried horizontal mattress suture is used to appose the junction of the flap and donor bed closure.

COMMENTS

The transposition flap is a rotating flap by design and is considered by the author to be the most versatile of the local flaps for wound closure. Although transposition flaps can be pivoted up to 180 degrees to cover a defect, a considerable loss of flap length occurs as it bends and kinks to extreme rotation. As a result, most transposition flaps are developed within 90 degrees to the axis (length) of the wound. Transposition flaps bring additional skin to the defect, unlike the single pedicle advancement flap, which relies upon the stretching of the elastic skin. For this reason, transposition flaps are best employed for wounds in which postoperative skin tension could cause distortion or compromise function. The transposition flap is adaptable to smaller defects of the limbs by developing the flap *parallel* to the length of the limb in order to take advantage of the limited circumferential skin laxity present in the dog and cat. While there is a certain degree of skin elasticity around wounds involving the trunk, which can compensate for small errors in flap dimension, measurements for flap development and transfer on the extremities must be precise. A 1-cm error in measurement can result in the inability to completely close the donor or recipient site.

On occasion, the surgeon may note a variable amount of skin elasticity along the distant border of the cutaneous defect. *Note:* Whenever possible, it is advisable to shorten the premeasured flap accordingly to improve the probability of maintaining adequate circulation to the terminal flap border.

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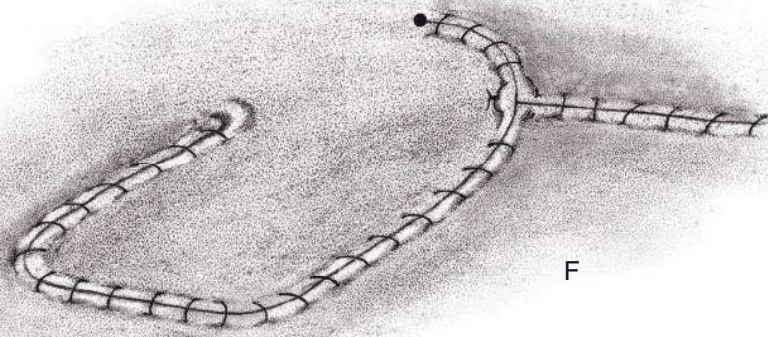
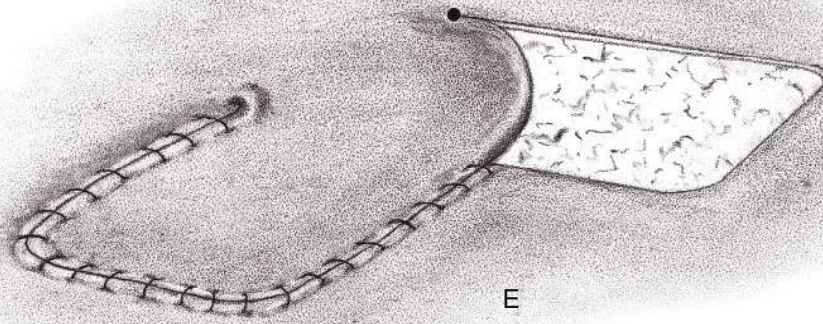
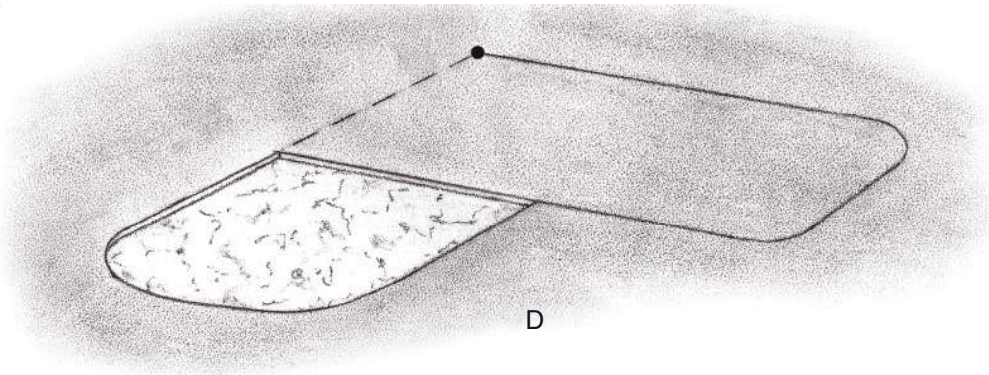


Plate 37

Transposition Flap (45 degrees)

DESCRIPTION

The 45-degree angle transposition flap is developed at a more acute angle to the axis of the defect compared to the preceding right-angle variation. Its use is more commonly associated with closure of triangular defects.

SURGICAL TECHNIQUE

- (A) Flap development is similar to the 90-degree angle transposition flap. The flap is created at a 45-degree angle to the axis of the defect.
- (B) The flap is pivoted and sutured into the prepared recipient bed.
- (C) The donor site is closed primarily after undermining the bordering cutaneous tissue.

COMMENTS

The 45-degree angle transposition flap variation generally is used to close triangular wounds where local skin immediately adjacent to this wound is ample to support its development. The 90-degree angle transposition flap, however, has greater ability to bring additional loose skin into defects from its (slightly) more distant donor site. As a result, the 90-degree transposition flap is better able to close wounds that require more skin for closure or wounds in which wound tension must be avoided to prevent regional distortion and functional impairment.

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